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SYLLABUS

OF

THE COURSE OF LECTURES

ON THE

PRINCIPLES AND PRACTICE OF SURGERY,

DELIVERED IN THE

377

JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

BY

THOMAS D. MÜTTER, M. D.

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NOTE.

The classification adopted in my lectures differs materially from that of any other surgeon, and its utility has been fully tested for several years. It will be perceived that I arrange all the subjects comprised in the course under *six* heads.

1. Under the *first*, I include *Inflammation*, its products and varieties, and *Wounds*.

2. Under the *second*, I shall consider all the diseases of the different tissues and organs, commencing with the *Bones*, and concluding with the *Skin*.

3. Under the *third*, the various affections of *Regions* may be considered.

4. The *fourth* division comprehends all *Tumours*, whether malignant or non-malignant.

5. In the *fifth*, the Diseases peculiar to *Females* will be considered.

6. In the *sixth*, *Amputation*.

THOMAS D. MÜTTER.

11th and Walnut Streets.

Oct. 1, 1855.

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4. The fourth division comprehends all Tumors, whether malignant or non-malignant.
5. In the fifth, the Diseases peculiar to Females will be considered.
6. In the sixth, I shall treat of the Venereal.

THOMAS D. MITCHELL
M.D. and F.R.S.E.

Oct. 1, 1855

SYLLABUS OF LECTURES.

INFLAMMATION.

DEFINITION.

LIABILITY OF TISSUES TO UNDERGO INFLAMMATION.—Some more liable than others. Some never attacked. Certain of the lower order of animals are supposed to be exempt from this action. Not as yet positively ascertained.

DIVISION OR CLASSIFICATION. First.—1. Acute. 2. Chronic. 3. Latent. Second.—1. Healthy. 2. Unhealthy.

Third.—1. Adhesive. 2. Œdematous. 3. Erysipelatous. 4. Gangrenous. 5. Specific. (Hunter's.)

Fourth.—1. Phlogosis. 2. Epiphlogosis. 3. Metaphlogosis. 4. Hyperphlogosis. (Lobstein's.)

SYMPTOMS.—1. Local. 2. Sympathetic, general, or constitutional.

(1.) *Redness, heat, swelling, pain, throbbing*, and an *alteration or suspension* of the natural secretions of the part. Although these symptoms are usually present, inflammation may exist without their development. Cite cases.

(1.) *Constitutional symptoms.*

THEORIES OF INFLAMMATION.

EFFECTS ON THE BLOOD.

TERMINATIONS OF INFLAMMATION.—1. Resolution. 2. Delitescence. 3. Metastasis.

EFFECTS OR PRODUCTS.—1. Effusion of serum. 2. Effusion of lymph. 3. Adhesion. 4. Hardening. 5. Softening. 6. Atrophy. 7. Hypertrophy. 8. Chemosis. 9. Suppuration. 10. Ulceration. 11. Gangrene and mortification.

CAUSES OF INFLAMMATION—TWO CLASSES. 1. Constitutional. 2. Local.

First Head, or Constitutional.—1. Plethora. 2. Local determinations. 3. Fever. 4. Diathesis. 5. Disordered state of function. 6. Suppression of natural discharges. 7. Atmospheric vicissitudes.

Second Head, or Local.—1. Those which produce *palpable injury to organization*—as mechanical injuries of every kind—mineral irritants—heat, friction, extreme cold, &c.

2. *Those which operate through the sentient extremities of the nerves*—as concussion, pressure, constriction, irritating substances, as mustard, cantharides, &c.

3. *Fluids which produce a peculiar impression and give rise to a specific action or inflammation*—as decomposed animal matter, pus or serum from specific diseases. The most familiar examples of the operation of this class are, *dissecting wounds, pustule maligne, and glanders.*

4. *Those which suddenly change the natural feelings of the parts.* For example, drawing off the water in dropsy will cause inflammation of the serous cavity in which it has been collected. Peritonitis frequently comes on after delivery; cystitis after the operation for stone, &c.

DIAGNOSIS.

PROGNOSIS.

TREATMENT.—Numerous indications are presented, most of which require to be fulfilled in nearly every case. They are modified of course by the peculiarities of the attack, the age, and the strength of the patient, &c.

1. We must endeavor to remove the cause. An exception to this rule is occasionally met with in surgery, when bullets, &c., lodge deeply.

2. We must diminish the action of the heart by nauseants, digitalis, general and local abstraction of blood, by venesection, arteriotomy, scarification, cups, and leeches.

3. We must reduce the sensibility of the part, and if possible, cause constriction of its vessels, by cold—ice, irrigation, immersion.

4. When cold fails to reduce sensibility, apply steam, fomentations, poultices, warm water dressings, immersion in warm water, &c.

5. We must restore the secretions, if possible, by diaphoretics, mercury, iodine, warm baths, &c.

6. We must remove the original disease by counter-irritation, especially when it becomes chronic. For this we use irritating lotions, blisters, sinapisms, tart. antim. croton oil, issues, setons, and moxas.

7. When the vessels are turgid, we must cause their contraction by astringent lotions, aided by scarifications, leeches, &c.

8. We must also prevent the afflux of blood into the part by position, frictions and rest. *Pressure*, recommended by some, is generally a painful remedy, except in chronic cases.

9. We must always bear in mind the influence of the mind upon the body, and endeavor to cheer up the patient by every possible means.

PRODUCTS OF INFLAMMATION.

I. SEROUS EFFUSION.

1. *Nature of this fluid.*
2. *Kind of inflammation usually producing it.*
3. *Time requisite for its separation.*
4. *Local phenomena.*
5. *Effects upon parts containing it and those in their vicinity.*
6. *Diagnosis.*—May be confounded with dropsy arising from other causes.
7. *Diseases produced by serous effusion.*—Hydrocephalus, hydrophthalia, hydrocele of the neck, hydrothorax, hydropericardium, ascites, ovarian dropsy, oedema, anasarca, skin bind of children, hydrocele of the tunica vaginalis testis, hydrarthus.

8. *Operations required to relieve these affections.*

- (1.) Paracentesis capitis, in hydrocephalus.
- (2.) Paracentesis oculi, in hydrophthalmia.
- (3.) Tracheotomy, in œdema of the glottis.
- (4.) Paracentesis colli, in hydrocele of the neck,
- (5.) Paracentesis thoracis, in hydrothorax and hydropericardium.
- (6.) Paracentesis abdominis, in ascites and ovarian dropsy.
- (7.) Paracentesis scroti, in hydrocele of the tunica vaginalis testis.
- (8.) Paracentesis articuli, in hydrarthrus.
- (9.) Puncture of the skin, in œdema and anasarca.

II. EFFUSION OF COAGULABLE LYMPH.

1. *Nature of this fluid.*

2. *Kind of inflammation producing its separation.*—Must not be too high, or we have pus; nor must it be of too low a grade. There is evidently a secreting point.

3. *Time required for its formation.*4. *Tissues in which it is most liable to occur.*5. *Effects upon the part into or upon which it is thrown.*6. *Stages through which the lymph passes in its organization.*

7. *Diseases resulting from this effusion.*—Hepatization of the lungs; corneal speck; various tumours; the hardness about boils and erysipelas; elephantiasis; closure of the trachea in croup; strictures; adhesions; and strangulations.

8. *Operations required to relieve the effects.*—Extirpation of various tumours; amputation of a limb; tracheotomy or bronchotomy in croup; the different operations for strictures; separation of adhesions as in atresia vaginæ; operation for hernia.

III. ADHESION.

Definition.—The accidental or abnormal union of parts, either separated naturally or by some chance, from each other.

Nature of this process.—This product of inflammation, or according to some, of *irritation*, is nothing more than the effusion of coagulable lymph or plasma, under peculiar circumstances. When, for instance, a simple cut or wound unites, without suppuration, the bond of union is either pure coagulable lymph or the fibrine of the blood; and it is said to heal by *adhesion*, or by "*adhesive inflammation*," or the "*first intention of Hunter*." Professor M'Cartney calls this process "*mediate union by lymph*," and denies the existence of inflammation in its accomplishment.

Theories in relation to this process.—Hunter's; Thomson's; John Bell's; Maunoir's; Delpech's; Serre's; Duhamel's; those of the Physiological school, &c.

Changes which take place during the organization of the bond of union.

—1, coagulation; 2, change in color; 3, formation of vessels; 4, increase of firmness; 5, conversion into fibrous or cellular tissue.

Process of vascularization.—Theories of Hunter, Dubamel, Clanny, Sir E. Home, Gendrin, Laennec, &c.

Appearance of cicatrix.

Utility of this process.—Exhibited in the adhesion of wounds. The attachment of the lungs to the ribs in pleurisy. The cure of hydroceles, cysts, and fistulæ. The cure of wounds about the abdomen. The arrestation of hemorrhages. The restoration of parts entirely separated from the body. And the success of *plastic surgery*.

PLASTIC SURGERY.

Definition.

Synonymes.—Autoplastic surgery; anaplastic surgery; animal grafting; chirurgia curtorum per insitionem; morioplasty; heteroplasty; taliacotian operation, &c.

History.

Indications for the employment of plastic surgery.

Circumstances which favor the success of the operation.

Circumstances which forbid its employment.

Result of these operations.—1. Favorable. 2. Unfavorable.

Treatment after a plastic operation.

Classification.—Several general groups. 1. Operation intended to restore parts either *entirely* or *partially* separated from their original connection.

2. Operations intended to restore lost organs by a process similar to vegetable grafting, and hence called the "*operation by transplantation.*" The new flap is here entirely detached from its original position.

3. The operation by "*transposition;*" the flap is here left attached by a pedicle, and is taken from parts either in the *vicinity* or at some *distance* from the seat of disease.

Under each of these *general* heads are ranged the different *special methods* of performing the different plastic operations. Under the first, we have the operation after *cancer*, the *removal of cicatrices*, the *loss of fingers*, &c. Under the second, the operations by "*migration of the flap,*" "*detachment and migration,*" &c. Under the third, the operations by "*glissement du lambeau*, or *sliding the flap,*" "*Roulement*, or *rolling the flap,*" "*inversion of the flap,*" &c., &c.

PLASTIC OPERATIONS.

Each of these takes its name from the part to be restored.

1. Cranioplasty, or restoration of the soft parts and bones of the head.
2. Otoplasty, or restoration of the ear.
3. Rhinoplasty, or restoration of the nose.
4. Blephoroplasty, or restoration of the lids.
5. Keratoplasty, or restoration of the cornea.
6. Cheiloplasty, or restoration of the lips.
7. Genioplasty, or restoration of the cheeks.
8. Staphyloplasty, or closure of the soft palate.
9. Palatoplasty, or closure of the palatine vault.

10. Bronchoplasty, or closure of the larynx or trachea.
11. Urethroplasty, or restoration of the urethra.
12. Oscheoplasty, or restoration of the scrotum.
13. Cystoplasty, or restoration of the bladder.
14. Enteroplasty, or restoration of a bowel.
15. Elythroplasty, or restoration of the vagina in vesico-vaginal, or recto-vaginal fistula.
16. Plastic operations for the restoration of parts about the thorax and abdomen.
17. Plastic operations after the removal of cicatrices.
18. Plastic operation for the cure of hernia.

IV. HARDENING.

Definition.

Causes.—Besides inflammation, it may result from natural causes, or it may be produced by simple congestion; undue accumulation in the cavities of organs; hypertrophy; loss of the fluids of an organ; interstitial deposits, and the presence of unorganized masses, as *tubercles*, &c.

Manner in which inflammation produces hardening.

Tissues liable.

Effect on organs.

Treatment.

V. SOFTENING, OR RAMOLLISSEMENT.

Definition.

Causes.—Usually from inflammation. May result from defective nutrition; disease of arteries; want of proper food; altered qualities of the blood, &c.; the solvent qualities of the gastric juice.

Tissues liable to it.

Effect on organs.

Treatment.

VI. ATROPHY.

Definition.

Causes.—Besides inflammation, it may result from a *law of nature*, as in the *wasting of the thymus gland*; an arrest of the nutritive process before birth; from a state of inaction; loss of nervous power; pressure; diseases of various kinds.

Division.—Partial and general.

Effect on bulk of organs.—May exist without any positive loss of size, as in *eccentric atrophy of the heart*, &c.

Effect on function of organs.

Tissues most liable to be attacked.

Treatment.

VII. HYPERTROPHY.

Definition.

Causes.—More active nutrition in a part, dependent often on inflammation; but also the result of other causes—as exercise; vicarious function;

excessive or unusual exertion of the involuntary muscles. It may also be congenital. Certain climates and trades also predispose to its occurrence. Castration and excision of the ovaries will cause hypertrophy.

Division.—*Partial or general.*

Effect on bulk of organs.—May exist without positive enlargement. Cite examples of this.

Effect on function of organs.

Tissues most liable.

Treatment.

VIII. CHEMOSIS.

Definition.

Causes.—Acute inflammation.

Symptoms.

Tissues most liable.

Prognosis.

Treatment.

IX. SUPPURATION.

Definition.

Causes.—Invariably the result of inflammation. This is doubted by some, but without foundation. The inflammation must not run too high, for here, as in the secretions, there is a “*secreting* or rather *suppurating point*,” above or below which pus will not be formed.

Situations in which it is formed.—1. Upon exposed inflamed surfaces, as the skin, mucous membrane, &c.

2. Upon unexposed surfaces, as serous membranes, cellular membrane, &c.; here called “*purulent effusions.*”

3. On granulations.

4. In a sac, to which we apply the term *abscess*.

5. It may be diffused through the whole substance of an organ.

Time required for its occurrence.—Varies from thirty-five minutes up to several hours, or weeks.

Symptoms.—1. Local. 2. Constitutional.

Theories relative to the formation of pus.—Numerous. Those of Hippocrates and Galen, Boerhaave, Hoffmàn, Stuart, Hunter, Simpson, Morgan, Gendrin, Carswell, Gulliver, Donnè, Andral, and Gerber, explained.

Usual change in tissue before pus is formed.—Puogenic membrane of Hunter. New gland of Simpson; not always present; usually exists in abscess.

Pus.—Two kinds; *healthy* or *laudable*, and *unhealthy*.

1. *Physical properties of healthy pus.*—Color, smell, consistence, taste, specific gravity.

Microscopic examination of.—Two parts, solid and fluid. Solid composed of *pus globules*, and *pus molecules*. Difference between these and globules of blood.

Chemical analysis of.

Tendency to putrefaction.

2. *Several kinds of unhealthy pus.*—(1.) Ichorous pus. (2.) Sanious pus. (3.) Creamy pus. (4.) Curdy pus. (5.) Slimy pus. (6.) Serous pus. (7.) Sordes. (8.) Malignant pus. (9.) Contagious pus.

Character of pus modified by cause and surfaces secreting it.

Action of pus on the surface secreting it.

Diagnosis.—May be confounded with mucus. The various tests examined. Also with tuberculous matter.

Prognosis.—Depends on extent and location of deposit, &c.

Treatment.—General principles laid down. Modified by circumstances.

1. Local remedies. 2. Constitutional.

ABSCESS.

Definition.—A collection of pus in an *accidental* or *preternatural* cavity. When pus is collected in a natural cavity, it is called an “*effusion.*”

Causes.—Always the result of inflammation; theory of Dehaen no longer maintained.

Classification.—1. Old arrangement into “*acute or hot,*” and “*cold or chronic,*” no longer retained by most authorities.

2. *Abscess of debility, or asthenic abscess.*

3. *Purulent deposit, or abscess by congestion.*

4. *Metastatic abscess.*

Some writers make a much greater variety, based upon *cause, tissue, or organ involved, &c.*

Changes which take place in the tissues from the period of inflammation to that of suppuration.

Changes that take place after this.—Divided by some into three stages; 1st. deposits of pus in the cells of the part; 2d, maturity, or the collection of this fluid into one cavity; 3d, resolution, either by absorption of the pus, or its evacuation by an operation.

Structure of an abscess.—Depends on its character. The puogenic membrane is usually, though not always, present.

Uses or functions of the cysts.

Mode of growth.

Direction of growth.

Progress of growth.—Slow or rapid.

Termination.—In resolution, ulceration, granulation and adhesion; or it may become encysted.

Effects of air when admitted into the cavity of an abscess.

Symptoms.—1. Local. 2. Constitutional.

Diagnosis.

Prognosis.

Effect on the constitution produced by suppression of the secretion.

Treatment.—1. Local remedies. 2. Constitutional.

ASTHENIC ABSCESS.

Peculiarities of this form of abscess explained.

PURULENT DEPOSIT, ETC.

Definition.—An abscess which differs from the ordinary forms in the circumstance of its pus not being originally formed in the parts in which it is found. It is hence sometimes called *symptomatic abscess*. Cite examples.

Why called abscess by congestion?

Parts most liable to this form of abscess.

Pathology.

Character of the pus.

Diagnosis.—Often obscure.

Prognosis.—Usually unfavorable.

Treatment.—Depends somewhat on circumstances. Governed by general principles. To illustrate more clearly the proper treatment, speak of that form called *Psoas abscess*.

METASTATIC ABSCESS.

Definition.—An abscess that suddenly forms without any previous indication of inflammatory action, and in parts distant from the point in which suppuration has originally existed. Hence it was supposed by some that the pus actually changed its location, or that *metastasis* took place.

Location.—Usually in the viscera. Sometimes they are met with in the cellular tissue, muscles, joints, &c. They generally select the largest viscera, and those most highly organized.

Number.—Varies from one to several.

Exciting causes.—Wounds, great surgical operations, injuries of the head, trivial wounds of veins in bad constitutions, delivery.

Proximate cause.—A number of theories on this point; supposed by some to be tubercles previously existing in the organs attacked, and softened by the general irritation of the system; by others, direct absorption of pus by the veins or lymphatics, is considered the true cause; others again refer it to *sympathy*; but the doctrine now generally received, is that which considers the true cause to reside in *inflammation of the venous capillary vessels or larger veins*.

Condition of the organ in which or around which the abscess forms.

Symptoms.—1. Constitutional. 2. Local. Both modified by the location of the abscess.

Diagnosis.—Obscure.

Prognosis.—Generally unfavorable.

Treatment.—1. General remedies. 2. Local remedies. Both modified by circumstances.

FISTULA, OR SINUS.

Definition.

Causes.

Symptoms.

Pathology.

Diagnosis.

Prognosis.

Treatment.

HECTIC FEVER.

Definition.

Causes.—1. *Constitutional.* 2. *Local.*

Symptoms.—May be divided into *three* groups: 1. Slight febrile action, with exacerbations in the evening. 2. The febrile action is continued. 3. Prostration indicated by perspiration, diarrhoea, marasmus, &c.

Diagnosis.

Prognosis.

Treatment.

X. ULCERATION.

Definition.—Differently defined by different authors. I adopt that of Phillips: "Ulceration is that product of inflammation in which there is a loss of some part of the body, which, from some peculiarity, *local or general of the constitution*, manifests no tendency to heal, so long as that particular condition exists."

Distinction between wounds and ulcers.

Predisposing or exciting causes of ulceration.—1. *Constitutional.* 2. *Local.*

Proximate cause.—Difference of opinion among authors. Hunter's doctrine of "Ulcerative absorption" explained. Difference between it and "progressive absorption."

Liability of tissues to ulceration.—The most highly organized, are most frequently attacked. Some tissues are exempt.

Natural tendency of ulceration.—When left to itself it generally extends. Sometimes it heals spontaneously.

Effects of ulceration upon the part attacked, or upon the constitution.

Tissue forming the surface of an ulcer.—Called a *granulating surface*.

GRANULATION.

Nature of Granulations.—1, basis or element of which they are formed; 2, size; 3, color; 4, shape; 5, temperature; 6, organization. Guterboch's statement as to what enters into the composition of a granulating surface.

Dependence of granulation upon suppuration.—Pus is supposed by some to be essential to the formation of granulations; by others this is doubted. It is not found, for example, in ulcers of the *cornea* or of *cartilage*.

CICATRIZATION.

Cicatrization, or the healing of granulating surfaces.

Definition of a cicatrix.—Tissue by which a wound or ulcer is united. By Delpech it is called the "*inodular tissue*."

Difference between cicatrix and the tissue it unites.

Modification.—This process is modified by a variety of circumstances; for example—

1. When it occurs under a scab or crust of blood, the cicatrix forms over the whole surface, and is smooth and pliant.

2. When it takes place on a smooth, moist surface, as when a wound heals by the "modelling process of M'Cartney," the surface is smooth, and the cicatrix a mere line.

3. When it forms on granulations, the process usually commences at the edges of the ulcer, and the surface is often irregular and prominent.

4. It is also much modified by the *cause* of ulceration. Those, for example, produced by burns or scalds, are more irregular, have more extensive adhesions, and cause more serious deformity, than when they result from any other cause. *Specific ulcers* usually produce a characteristic cicatrix.

5. The character of a cicatrix is also modified by the *tissue* in which it occurs.

Structure of cicatrix.

Profundity or depth.

Force with which it contracts during the process of formation.

Circumstances which prevent or retard cicatrization.

Nature of the tissue of a cicatrix.

Power of resisting disease, and diseases peculiar to the cicatrix.—Refer to Mr. C. Hawkins for an excellent paper on *Cancer of Cicatrices*.

Form of cicatrix. Dupuytren's classification.

Prognosis as to the result of operations.—Depends on a variety of circumstances. We must take into consideration—1st, the depth of the cicatrix; 2d, its age; 3d, its location; 4th, its extent; 5th, its peculiar character; 6th, its vascularity; 7th, the condition of the parts in its vicinity; 8th, the health of the patient.

Treatment of cicatrices.—May be divided into—1, That proper during the formation of the cicatrix. 2. That required after its complete formation.

Indications under first head.—1. Remove all agents calculated to prevent cicatrization.

2. Endeavor, as a general rule, to make the cicatrix as small as possible, unless by so doing we interfere with some function.

3. Prevent the cicatrix being too small or too short, as in wounds about the fingers, face, &c.

4. By caustics or the knife prevent fungus granulations.

Indications under the second head.—1. Endeavor to relax the cicatrix by frictions, baths, extension, &c.

2. When these means fail, perform an operation. The character of the operation is modified by circumstances. To render this part of the subject more simple, the operation required in each form of cicatrix may be briefly referred to.

(1.) In the *narrow cicatrix* without extensive adhesions, divide the cicatrix, extend it, and maintain it extended for some time.

(2.) In the *prominent cicatrix*, slice it off, or keep it down with *caustics*, or *slough* it out.

(3.) In the cicatrix with *extensive adhesions*, cut out the cicatrix and fill up the space with sound skin. The practice of Hildanus, Earle, &c., in these cases explained.

(4.) In contraction of *natural openings*. The operation of Dieffenbach, &c., explained.

(5.) When an organ is *entirely destroyed*, the *cicatrix* must be removed, and a plastic operation performed.

ULCERS.

Definition.—Solution of continuity, accompanied by the secretion of pus or other fluid—(Liston and S. Cooper.) A granulating surface secreting pus—(A. Cooper.) This definition is objectionable, inasmuch as we may have secretion of pus *without granulations*. The definition of Liston and S. Cooper is better.

Difference between ulceration and an ulcer.

Classification.—Difficult. The causes, the symptoms, and the parts attacked, have each been taken as the basis of a classification. That of Liston I prefer, as being most simple. He makes six varieties of ulcer, and in this agrees with Sir E. Home. Their classifications are almost identical.

1. The simple, healthy, or healing ulcer.
2. The weak or sluggish ulcer.
3. The indolent ulcer.
4. The irritable ulcer.
5. The specific ulcer.
6. The varicose.

SIMPLE ULCER.

Characteristics.

Causes.

Class of persons usually affected.

Parts of the body attacked.

Prognosis.

Treatment.

WEAK ULCER.

Characteristics.

Causes.

Class of persons usually affected.

Parts of the body usually attacked.

Prognosis.

Treatment.

INDOLENT ULCER.

Characteristics.

Causes.

Class of persons usually affected.

Parts of the body usually attacked.

Prognosis.

Treatment.

IRRITABLE ULCER.

Characteristics.

Causes.

Class of persons usually affected.

Parts of the body usually attacked.

Prognosis.

Treatment.

SPECIFIC ULCERS.

Characteristics.—Depend on cause.

Causes.—Cancer, scrofula, fungus, scorbutus, syphilis, &c.

The peculiarities of these ulcers will be pointed out under the heads of their respective causes.

VARICOSE ULCER.

Characteristics.

Causes.

Class of persons usually affected.

Parts of the body usually attacked.

Prognosis.

Treatment.

XI. MORTIFICATION, OR SPHACELUS.

Definition.

Difference between gangrene and sphacelus.

Classification.—Several terms are employed to designate the different groups of phenomena which characterize mortification under different circumstances. We have, for instance—

1. Hot, acute, traumatic, or inflammatory mortification.
2. Cold, or that which takes place without previous inflammation.
3. Humid, or that accompanied by the effusion of fluids.
4. Dry, or that in which little or no secretion or effusion occurs. From the fact of its being chiefly confined to old persons it is often called "Gangrene Senilis."
5. Chronic, or that form described by Pott, as attacking chiefly the extremities.
6. Hospital gangrene.
7. Epidemic gangrene.
8. Specific gangrene—example. Malignant pustule.

Causes.—Various. It must be recollected that mortification may result from many causes besides inflammation. Nearly all of these may be ranged under four or five heads.

1. It may be occasioned by any cause capable of producing a cessation, or partial cessation, or even a feebleness of the circulation in a part—as inflammation, mechanical obstacles, debility, ossification of arteries, &c.

2. By any cause which occasions violent mechanical or chemical changes in the part, as contusions, lacerations, heat, cold, mineral acids, and caustic alkalies.

3. By any which, in consequence of their poisonous properties, will produce a deleterious influence upon the system at large, as the virus of rabid animals, and poisonous reptiles, and animal fluids the result of decomposition.

4. By any that will impair the powers of nutrition, or furnish bad chyle. High living, or bad food, certain articles of food, (as ergot,) bad air, bad lodging, and certain trades by obliging individuals to deny themselves proper food, air, and exercise, will all predispose to mortification, and may produce it without local injury.

5. By any that will cause intense passions or emotions of the mind.
(See Langenbeck.)

Manner in which these various causes operate upon the parts attacked.

Liability of tissues to mortification—some more liable than others.

Time required for the process of mortification to be completed.—Depends on circumstances.

1. It may take place very slowly.

2. It may occur very rapidly.

3. It may be instantaneous.

Symptoms.—1. Constitutional. 2. Local.

Process of sloughing.—When in consequence of our remedies or the vix medicatrix naturæ, the process of mortification is checked, a *distinct boundary line* is formed between the *living* and the *dead* tissues, and nature proceeds to *amputate*, as it were, the portion that has lost its vitality, by a process termed "*sloughing*," and, where the bones are concerned, by "*exfoliation*," the chief agent in the accomplishment of which was called by Hunter, "*disjunctive absorption*."

The different changes which take place in this process described.

The period at which it occurs after mortification is completed, depends on circumstances. State what these are. Condition of the parts after the separation of the slough, and their manner of healing.

Prognosis.—The effect produced upon the system by the occurrence of mortification depends on the part involved. If the organ destroyed is one of importance, or vital, the death of the animal is either instantaneous or speedy. If, on the other hand, the part affected is not essential to life, sloughing takes place, and the individual recovers. Sometimes, however, this process is so tedious, and the parts destroyed so extensive, that death ensues in consequence of debility and hectic fever. It is also modified by the kind of mortification present.

Diagnosis.—May be confounded with other discolorations of the skin. Positive signs of mortification must always be present before we pronounce upon the nature of the case. We must always be careful to ascertain the *depth* of the slough; for the skin alone may be affected, when there is every appearance of the whole limb being involved.

Treatment.—To prove of any advantage, so far as the affected part is concerned, our remedies must be applied in the stage of *gangrene*. They are also modified by the varieties of *gangrene*, the general condition of the patient, the character of the cause, &c. We may, however, lay down certain general indications to be observed in the management of all cases.

1. We must endeavor to apply such remedies as shall put a stop to the disease in the stage of *gangrene*.

2. We must endeavor to arrest the progress of *mortification* when once formed, and at the same time lessen the violence of the local and general symptoms.

3. We must favor the separation of the slough, and when nature is incompetent to the task we must effect it for her.

a. In obeying the first general indication, we must always take into consideration the *cause* of the attack, and remove it, if possible, at once. If *inflammation* is the cause, *antiphlogistics*, general as well as local, are to be employed. If *strangulation*, or the *arrestation* of the *circulation* be the cause, the stricture must be divided by an operation, or relaxation by nauseants, &c. When produced by the *binding of aponeurosis*, or *skin*, as in *carbuncle*, free incisions are to be made. When *intense cold* is the cause, the temperature of the part must be gradually increased, and the subsequent inflammation treated on general principles, &c. The best local remedies, as a general rule, in this stage, are *cold and astringent lotions*, or *warm fomentations*, *water dressings*, or *poultices*. *Leeches* may also be occasionally employed.

b. In carrying out the second general indication, we must resort to both constitutional and local means. Tonics, as bark, wine, opium, a good diet, and fresh air will generally be required. The local remedies are *incisions*, (to be used only when the tissues bind, or fluids are infiltrated to some extent,) *blisters*, *nit. argent.*, *creasote*, *yeast* or *carrot poultices*, *chloride of soda*, *pyroligneous acid*, and *carbonated water*. Charcoal and bark, once so highly esteemed, are not much employed at present.

c. The third general indication is answered by the application of warm dressings and poultices; removing the loose sloughs with the scissors and forceps; and by amputation.

Period at which amputation should be resorted to.—Depend on cause. In traumatic mortification remove the limb as soon as possible. In all other cases wait until the "*red line of demarcation*" is formed.

Point at which amputation should be performed.

In this stage it is usually necessary to support the constitution of the patient.

There are certain kinds of mortification which, from their peculiarities, deserve a separate notice. The first of these is

DRY GANGRENE.

Definition.

Synonymes.—Gangrene senilis—gangrene of the rich.

Persons most liable.—The old and dissipated. Men are more frequently attacked than females.

Causes.—Divided by Francois into two classes.

1. Those which operate through the medium of the *vascular system*, as inflammation of the vessels, formation of clots in their cavities, obliteration of vessels, ossification of arteries, diseases of the heart, diseases of the blood from bad food, as ergotted grain, &c., and mechanical injuries which obliterate vessels.

2. Those which produce their effect in consequence of either local or general debility of the *nervous system*, as palsy, old age, and the excessive debility of certain diseases, particularly phthisis pulmonalis.

Symptoms.—1. Constitutional. 2. Local. When ergot is the cause, the attack may commence with convulsions of the limbs and vertigo, or it may

begin with the usual local symptoms of dry gangrene from other cause. The former was called by Linnæus "convulsio cerealis," and by Wepfer, "convulsio ab ustaligine." The latter, "necrosis ustilaginea," by Sauvages.

Prognosis.—Usually unfavorable.

Diagnosis.—May be imitated by malingers.

Pathology.—Still a matter of dispute. Cite the different views of Delpech, Cruveilhier, Dupuytren, Thuillier, Tessier, &c.

Treatment.—1. Constitutional. 2. Local.

INFANTILE GANGRENE.

Definition.

Persons liable.

Parts usually attacked.

Causes.—Questions of its contagiousness.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

CHRONIC MORTIFICATION.

Definition.

Persons most liable.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

HOSPITAL GANGRENE.

Definition.

Synonymes.—Phagedena gangrenæ; putrid or malignant ulcer; hospital sore; gangrena contagiosa.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Pathology.

Treatment.

MALIGNANT PUSTULE, OR CHARBON.

Definition.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

VARIETIES OF INFLAMMATION.

ERYSIPELAS.

Definition.—A peculiar form of inflammation attacking the skin and mucous membranes, taking its name from two Greek words which signify *red* and *skin*. It is also called St. Anthony's fire.

Division.—Almost every writer has given his own classification. I adopt that of Mr. Lawrence. He makes four varieties:—1. Erythema. 2. Simple Erysipelas. 3. Œdematous Erysipelas. 4. Plegmonous Erysipelas.

The "erysipelas ambulans vel erraticum" of La Motte, and the "universal erysipelas" of Hoffman and others, being mere modifications of one form or the other of the varieties made by Lawrence, should not be considered as *peculiar* forms of the complaint. The division into *idiopathic* and *symptomatic* may be retained.

Symptoms.—Vary in the different forms.

Seat of the disease.—Commencing on the surface of the skin, it gradually becomes more profound, until it involves in some cases the subjacent cellular and other tissues.

Question of its contagiousness.—Still a disputed point. For my own part, I believe that it is not. It may be epidemic.

Causes.—Predisposing—constitutional and local.

• *Prognosis.*—Depends on location and extent—the health and condition of the patient.

Diagnosis.—May be confounded with common phlegmon.

Treatment.—Varies somewhat with the kind of erysipelas. May be divided into—1 Constitutional. 2. Local.

Being essentially inflammatory, *antiphlogistic* remedies are required in the first stage. Emetics are often useful. In phlegmonous and œdematous erysipelas, when sloughing occurs, it often becomes necessary to support the constitution.

The *local* remedies are very numerous. 1st, cold; 2d, leeching; 3d, scarifications; 4th, incisions; 5th, blisters; 6th, argent. nit., as applied by Davidson, or after the method of Higginbottom; 7th, tinct. of iodine; 8th, British oil; 9th, ungt. hyd. mit.; 10th, dry powders; 11th, compression, as recommended by Velpeau and Bretonneau. Examination of the value of these different agents.

ANTHRAX, OR CARBUNCLE.

Definition.—A deep-seated, circumscribed inflammation of the skin and cellular tissue, characterized by its hardness, peculiar burning pain, and termination in gangrene.

Varieties.—Benign and malignant.

Causes.—Constitutional and local.

Symptoms.—Vary with stage.

Diagnosis.—Pustule maligne may be mistaken for it; also, common furuncle and erysipelas.

Prognosis.—Depends on location and general health of patient.

Termination.

Treatment.—Varies with stage.

FURUNCULUS, OR BOIL.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Termination.

Treatment.

PERNIO, OR CHILBLAIN.

Definition.—Specific inflammation. The result of cold.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—Divided into that proper in the early stages, and that required after vesication and ulceration have taken place.

FROST-BITE.

Definition.—A form of inflammation, the result of the application of intense cold to any part of the body.

Symptoms.—Constitutional and local.

Diagnosis.

Prognosis.

Treatment.—Varies with degree, location and stage.

BURNS.

Definition.

Causes.

Classification.—Hildanus, Boyer, Thompson and others, make three kinds.

1. *Superficial*, involving merely the outer surface of the skin, and terminating always in resolution.

2. *Vesicular*, or *ulcerated*, in which the cuticle is raised into blisters.

3. *Sloughing*, in which the cutis is destroyed either immediately or subsequently, and forms either a "soft slough or hard eschar."

This classification being simple, is the one most generally adopted, but that of Dupuytren is much more scientific; being based as it is, upon the nature of the textures and organs involved. In this, six varieties or degrees are made.

1. Erythema, or superficial phlogosis of the skin without vesicles.

2. Inflammation of the skin, with detachment of the cuticle and formation of vesicles.

3. Destruction of the corpus papillare, and rete mucosum.

4. Complete disorganization of the cutis down to the cellular tissue.
5. Conversion of all the superficial textures and muscles into eschars.
6. Carbonization of the whole thickness of the burnt part.

Symptoms.—Vary with the degree of violence with which the cause producing them have operated. Divided into—1. Constitutional. 2. Local.

Diagnosis.—May be confounded with erysipelas.

Prognosis.—Deduced from extent, depth, and situation; age and constitution of the patient; and the character of the cause.

Periods of danger.—According to Dupuytren there are four:

1. The stage of irritation, or the period of the first shock on the system.
2. The stage of inflammation.
3. The stage of suppuration.
4. The stage of exhaustion or hectic.

Post mortem.

Treatment.—Varies with the degree, &c.

In the *first* and *second* degree, we must endeavor, by both constitutional and local measures, to prevent inflammation or limit its extension, and relieve pain. Should there be no *chill*, the best topical applications, at first, are cooling refrigerant lotions; should fever supervene, low diet, venesection, topical bleedings, and cooling medicines, must be administered; and to allay pain, it is proper to give anodynes.

When the patient is cool or prostrated, wait for reaction or promote it, and in the meantime cover the burnt part with raw cotton.

When reaction takes place, then resort to the antiphlogistic system.

When vesicles form, and suppuration takes place, apply, instead of the cold, the linimentum aquæ calcis, or a mild poultice.

The vesicles should always be punctured with a needle, and the fluid thus evacuated.

The cuticle must not be removed.

In the *third* and *fourth* degrees, the same general rules are to be observed.

Where the pus collects under the slough, free incisions are to be made, and poultices applied until the slough is detached, or until healthy granulations form.

In the *fifth* and *sixth* degrees, the patient is generally prostrated, and we have to resort at once to stimulants. Some advise *local stimulants*, or “the calefacient treatment;” but as the parts are nearly if not entirely destroyed, and must be detached by sloughing, it is best to apply warm poultices at once. During the detachment of the slough, the patient's strength must be supported.

The ulcers resulting from the detachment of the slough are generally indolent, and must be treated on general principles.

Where a limb is entirely destroyed, amputation must be resorted to as soon as reaction takes place.

Local treatment during cicatrization to prevent deformity.

Local treatment of the deformities arising from the unfavorable cicatrization of burns.

SCORBUTIC INFLAMMATION, OR SCURVY.

Definition.

Causes.

Symptoms.

Pathology.

Prognosis.

Diagnosis.

Treatment.

SCROFULOUS INFLAMMATION, OR SCROFULA.

Definition.

Synonymes.

Tissues most liable to be attacked.

Age at which the disease usually manifests itself.

Causes.—1. Hereditary. 2. Accidental.

Characteristics of the "scrofulous diathesis."

Symptoms.—1. Constitutional. 2. Local. Both are modified by the organ or organs attacked.

Diagnosis.

Prognosis.

Pathology.

Treatment.—1. Local. 2. Constitutional.

WOUNDS.

DEFINITION.—A recent solution of continuity in the soft parts suddenly occasioned by external causes, and attended at first by more or less hemorrhage—(Cooper.)

OBJECTIONS TO THIS USUALLY ACCEPTED DEFINITION.—A wound may be produced by violent action of the muscles alone; and by the protusion of a fragment of bone. We may also have a wound occurring in bone.

CLASSIFICATION OF WOUNDS.

First division—Is based upon the nature of the instrument inflicting the wound. Thus we have *incised, punctured, lacerated, contused, and gunshot* wounds.

Second division—Is based upon the introduction of some venomous, morbid, or putrid matter, into the wounded part. Hence we have *poisoned, specific, and dissecting* wounds.

Third division—Is based on the regions of parts involved. Thus we have wounds of the *head, face, chest, abdomen, &c.*

Fourth division—Wounds are also divided into the *simple and complicated.*

DANGERS OF WOUNDS.—These depend on—1st, the size, or the extent of injury; 2d, the weakness or strength of the parts involved; 3d, the importance of the organ; 4th, the size of the blood-vessels involved; 5th, the kind of vessels, (artery or vein;); 6th, the diathesis of patient; 7th, the age of patient.

CAUSES OF DEATH.—1st, hemorrhage; 2d, tetanus; 3d, traumatic fever; 4th, erysipelas; 5th, hectic fever; 6th, gangrene; 7th, metastatic abscess.

PROCESS OF HEALING.—Until recently, only *two methods* described: union by the *first intention*, and union by *granulation*, or the *second intention*. Professor McCartney has established the existence of two others, and we may therefore, make four different processes of union, viz:

1. Immediate union.
2. Mediate union by lymph or blood, or union by the first intention.
3. Union by the modelling process.
4. Mediate by granulation, or by the second intention of Hunter.

OBJECTIONS TO McCARTNEY'S VIEWS.

MODE OF ORGANIZATION OF THE LYMPH AND BLOOD.

DIFFERENCE BETWEEN HUNTER AND McCARTNEY RELATIVE TO THE NECESSARY PRESENCE OF INFLAMMATION IN THE HEALING OF ALL WOUNDS.

COMPARATIVE ADVANTAGES OF THE DIFFERENT MODES OF UNION.

First and second should generally be attempted; because when either takes place, we save *time and pain*, and obtain a *strong* and generally but *slightly deformed cicatrix*.

State the objections urged by many of the French authors and others against these two modes of union in large wounds.

CIRCUMSTANCES PREVENTING UNION BY THE IMMEDIATE OR MEDIATE PROCESSES.—Divided into—1, constitutional; 2, local.

First, or constitutional.

1. Bad habit of body.
2. Diseases of various kinds.
3. Simple fever.
4. Vitiated atmosphere in hospitals, &c.
5. Epidemic influences.

Second or *local*.

1. Atmospheric air.
2. Foreign bodies lodged in the wound.
3. Large coagula of blood.
4. Laceration or severe contusion of the parts.
5. Faulty dressings.

CHARACTER OF THE TISSUE BY WHICH WOUNDS ARE UNITED.—Already alluded to. It is a singular fact, that nearly all tissues unite by a substance different from themselves.

The different classes of wounds may be next considered; and first of

INCISED WOUNDS.

Definition.

Extent and direction.—Always to be regarded.

Characteristics.—Pain, gaping, hemorrhage.

The pain is owing to lesion of the nerves; the gaping to the ordinary elasticity and contractility of the parts, and also to the situation of the wound. The hemorrhage proceeds from a wound of an artery, or vein, or both, and its character is modified accordingly. State these modifications. Its activity is dependent upon the character of the wound, and the size of the vessel.

Prognosis.

Treatment.—General indications.

1. Arrest the hemorrhage.
2. Remove foreign bodies.
3. Approximate and retain the sides of the wound in contact.
4. Prevent or subdue inflammation.
5. Protect the wound from injury by appropriate dressings.

First indication.—Hemorrhage may be arrested either by an effort of nature, or by the assistance of the surgeon. Explain the process by which the bleeding is *spontaneously* arrested. We are not to wait for this, however, but must resort to the various agents afforded by our science. These are numerous, and are to be modified or varied according to circumstances.

1. When the vessel is deep and beyond our reach,—as in wounds of chest, abdomen, &c.—our best remedies are bleeding, digitalis, cold, rest, low diet, and positive quietude of mind.

2. When the vessel is accessible, we may resort to

- a. The ligature.

- b. Torsion.
- c. Machure.
- d. Refoulement, or reduplication.
- e. Compression.
- f. Refrigerants.
- g. Styptics.
- h. Suture.
- i. Plugging.
- j. Seton.
- k. Acupuncture.
- l. Electro-puncture.

The most important of these agents is the

LIGATURE.

History.—Mentioned by Celsus; but not generally employed until the time of Paré.

Effect on an artery.

Effect on a vein.

Changes which take place in the blood contained in the vessel.

Changes which take place in the vessel itself.

Manner in which the ligature is discharged.

Cause of danger when the ligature comes away.

Time required for the obliteration of the vessel.

Materials of which ligatures are usually made.

Shape and size of ligature.

Mode of tying the ligature.

Method of applying a ligature.—Depends on the location of the vessel.

1. When the vessel opens on a surface, as in the wounds of amputation, &c., we require a *tenaculum*, or *artery forceps*.

2. When the vessel is deep-seated, or when we wish to cast a ligature in the course of a vessel, as in aneurism, we may use the various *aneurismal needles*, or a *bent probe*. Objections to the needles. In all large wounds it is well to apply a ligature to *both ends of the vessel*. Why?

Subcutaneous ligature.

Ligature d'attente, or ligature of reserve.

Scarpa's ligature.

Ligature and section of the vessel.

Temporary ligatures.

TORSION.

Definition.

History.

Arteries to which it is considered applicable.

Mode of performance.

Objections to its employment.

MACHURE.

Definition.

History.

Arteries to which it is considered applicable.

Mode of performance.

Objections.

REFOULEMENT, OR INVERSION.

Definition.

History.

Arteries to which it is considered applicable.

Mode of performance.

Objections.

COMPRESSION.

Importance.—Useful either as a *temporary* or *permanent* agent.

Points upon which it may be applied.—Either directly upon the bleeding surface, or at some distance from it.

Class of wounds in which it is most useful.—Wounds of extremities, or over bones or firm tissues.

Agents of compression.—1st, compresses; 2d, rollers; 3d, hand of assistant; 4th, tourniquet; 5th, garot; 6th, tissue itself.

REFRIGERANTS.

Cases to which they are applicable.

Agents usually employed.—Cold air, cold water, ice, &c.

STYPTICS AND ABSORBENTS.

Cases to which they are applicable.

Agents usually employed.—Salts of the metals, creasote, sponge, agaric, lint, cobweb, dry powders, &c.

CAUTERY AND CAUSTICS.

Cases to which they are applicable.

Heat at which the cautery should be applied.

Agents employed.—Metallic bodies of different shapes, mineral acids, argent. nit., &c.

SUTURE.

Mode of application.

Cases to which it is applicable.

PLUGGING.

Cases to which it is applicable.

Manner of applying it.—Speak of Sarra's proposition to "plug the artery in ordinary hemorrhage."

SETON.

Mode of application, &c.

ACUPUNCTURE.

Mode of application, &c.

ELECTRO-PUNCTURE.

Mode of application, &c.

Manner in which the circulation is carried on in a limb, after the obliteration of a large artery.

Second indication.—Having arrested the hemorrhage, the next indication is to *remove foreign bodies*.

Character of these, generally speaking. Should coagulated blood be considered a foreign body?

Manner of removing these bodies.

Third indication.—The next indication is to *bring the sides of the wound in contact and retain them in this position*.

Agents employed to fulfil this indication. 1. Position. 2. Sutures of different kinds. 3. Adhesive straps. 4. The rollers. 5. Splints.

Fourth indication.—*Protecting the wound from injury* is the next indication.

Agents employed to fulfil this indication. Much more simple at present than formerly. The lighter the dressing the better, when we wish union by the first intention. Cold water dressing. When union by the *second intention of Hunter* is desired, the best top dressing is the “warm water dressing,” or poultice.

Fifth indication.—To fulfil this indication, antiphlogistics, both general and local, are usually required.

LACERATED WOUNDS.

Definition.

Causes.

Characteristics.

Prognosis.

Treatment.—General indications.

1. Arrest the hemorrhage when it exists.
2. Attempt, if possible, union by the “immediate or mediate” processes. Mode of dressing to accomplish this. Irrigation and water dressings.
3. When suppuration takes place, promote the secretion by a poultice, or warm water dressing.
4. Keep down inflammation at first, but when suppuration is profuse, support the constitution.
5. When the extremities are involved, the question of amputation may occur.

CONTUSED WOUNDS.

Definition.

Causes.

Characteristics.

Prognosis.

Terminations.

Treatment.—General indications.

1. When the contusion is complicated with a wound of the integuments, close the latter as soon as the hemorrhage (where it exists) is arrested and foreign bodies removed.

2. Keep down inflammation by antiphlogistics, both local and general. Dress lightly, &c.

3. In severe contusions, it is often necessary, at first, to *stimulate* the patient, but this should only be done when the prostration is great.

4. After the inflammation becomes chronic, or when the blood is not readily absorbed, use stimulating frictions, bandages, &c.

PUNCTURED WOUNDS.

Definition.

Causes.

Characteristics.

Prognosis.

Treatment.—General indication.

PENETRATING WOUNDS.

Definition.

Causes.

Characteristics.

Prognosis.

Treatment.—General indications.

POISONED WOUNDS.

Definition.

Causes.

Characteristics.

Prognosis.

Treatment.—Depends on the character of the cause.

1. When they are produced by the stings of insects, the remedies are—*cold applications, volatile alkali, saline solutions* to the part affected; and occasionally *bleeding, diet, and purgatives* are required.

2. When they are produced by the bites of venomous or rabid animals, the remedies are a *ligature above the wound, excision of the part, cupping or suction of the wound, caustics, poultices, and often constitutional remedies*, according to the condition of the patient.

3. *Dissecting wounds* are best treated by *suction, caustics, leeches, a blister above the wound, a poultice or cold to the part, and constitutional remedies*, according to circumstances.

RABIES.

Definition.

Causes.

Time of appearance after the reception of the injury.

Symptoms.

Pathology.

Prognosis.

Diagnosis.

Treatment.

GUN-SHOT WOUNDS.

Definition.

Varieties.

Characteristics.—Constitutional and local.

Wind Wounds.—How produced.

Gun-shot wounds usually contain foreign bodies.

Pathology of the wound.

Prognosis.

Treatment.—Several indications. Modified by nature of wound.

1. Attention to general condition of the patient at the time the wound is received.
2. Arrest the hemorrhage where it exists.
3. Examine wound.
4. Remove foreign bodies, if possible.
5. Dress the wound. Cold applications should first be tried, and if these fail to afford relief, apply warm or hot.
6. Guard against secondary hemorrhage.
7. Prevent the formation of pus.
8. Prevent inflammation if necessary by *antiphlogistics*.
9. Support the general health, if necessary, after suppuration is established.
10. Heal sinuses.

SECOND DIVISION, OR DISEASES OF THE TISSUES.

I. DISEASES OF THE BONES.

GENERAL REMARKS.

BONES MOST LIABLE TO DISEASE.

CAUSES OF DISEASE.

EFFECTS ON CONSTITUTION.

CLASSIFICATION.—All diseases of the bones may be ranged under three heads.

1. The non-malignant diseases.
2. The malignant diseases.
3. Wounds and fractures of bones, and their occasional results.

FIRST HEAD, OR NON-MALIGNANT DISEASES.

- a. Neuralgia.
- b. Atrophy.
- c. Hypertrophy.
- d. Osteitis.
- e. Abscess.
- f. Ulceration.
- g. Necrosis.
- h. Mollities ossium.
- i. Fragilitas ossium.
- j. Rachitis.
- k. Tubercle in bone.
- l. Osseous aneurism.
- m. Exostosis.
- n. Hydatid encysted tumour.
- o. Serous encysted tumour, or spina ventosa.

SECOND HEAD, OR MALIGNANT DISEASES.

- a. Osteo-sarcoma.
- b. Medullary sarcoma.
- c. Fibrous sarcoma.
- d. Fungus Hematodes.
- e. Melanosis.

First Head.

I. NEURALGIA.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

II. ATROPHY OF BONE.

Definition.

Varieties.

Causes.—1, diseases of various kinds; 2, retardation of structural growth; 3, old age.

Effect upon the strength of the bone.

Appearance of the bone.

Analysis of atrophied bone.

Treatment.

III. HYPERTROPHY.

Definition.

Varieties.

Causes.—1, exercise; 2, excessive nutrition in different bones; 3, inflammation; 4, degeneration of soft deposits upon bone, the result of periosteal inflammation.

Effect upon the strength of the bone.

Symptoms.

Appearance of bone.

Treatment.

IV. OSTEITIS.

Definition.

Question of its possible occurrence.

Varieties.—1. Acute. 2. Chronic.

Persons most liable.

Bones most frequently attacked.

Causes.—1. Constitutional. 2. Local.

Symptoms.

Diagnosis.—May be confounded most readily with periostitis and endostitis.

Prognosis.

Terminations.—Resolution, atrophy, hypertrophy, suppuration, ulceration, mortification.

Dissection.

Treatment.—Depends on variety of inflammation, its intensity, and the bone attacked. The remedies required may be either general or local, or both combined.

V. ABSCESS IN BONE.

Location of matter.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VI. CRIES, OR ULCERATION IN BONE.

Definition.

Confusion among authors as to its precise nature.

Bones most liable to be involved.

Varieties.—Simple, syphilitic, strumous, malignant, &c.

Causes.—1. Constitutional. 2. Local. The seat of the disease, when constitutional causes operate in its production, is modified very much by the character of the cause.

Symptoms.—Constitutional and local. Modified by the cause, stage, location, and extent of the disease. Usually three stages.

Diagnosis.

Prognosis.—Often confounded with osteitis, periostitis, endostitis, necrosis.

Dissection.

Chemical analysis.

Treatment.—Both constitutional and local remedies will usually be required, and these must be modified to suit the stage, intensity, and cause of the disease. In the *first stage*, antiphlogistics are usually required. In the *second stage* emollients or stimulants, to change the character of the ulcer, are generally employed. In the *third*, we must either *cut out the diseased bone, destroy its vitality, or remove the limb.*

The cause must always be removed, if possible; and if *specific* in its character, *specific* remedies or alteratives are to be employed.

VII. NECROSIS.

Definition.

Confusion among authors as to its precise character.—Louis was the first to describe it accurately.

Bones most liable.

Causes.—1. Constitutional. 2. Local. Most of these operate through the medium of the periosteum, either *internal* or *external*. Some affect the bone primarily.

Remarks in reference to the influence of the periosteum.

Varieties.—1. EXTERNAL. 2. INTERNAL. 3. COMPLETE.

Symptoms.—Constitutional and local. Often obscure. We have usually *three* distinct stages in the progress of the disease.

1. The inflammatory stage.
2. The stage of suppuration and detachment.
3. The stage of reparation.

In *external* or *superficial* necrosis, the local symptoms, in the *first stage*, are a dull or acute pain, soon succeeded by a flattish tumour, in which fluctuation is after a time observed. The skin next changes its color, ulcerates, and pus is discharged. There is always more or less fever.

In the *second stage*, the swelling diminishes in size, the bone is left *bare, rough* or *smooth*, according to the nature of the action preceding its death, often rings when struck, and when we can see it, is either *whiter* or *darker* than natural. The pus discharged is either laudable or unhealthy. There is sometimes inflammatory fever in this stage, but often we have *hectic*. The bone is gradually loosened and detached by a process termed "*exfoliation*," which is very analagous to sloughing of the soft parts.

In the *third* stage, the local symptoms become milder, the constitution improves and the new bone is formed.

In *internal or complete necrosis*, all the symptoms are more severe; and in the *second stage*, the swelling does not diminish in size so much as in external necrosis.

Process of separation described.

Manner in which the sequestrum or dead bone is disposed of.—Depends upon its being *external, internal or complete.*

Process of reparation described.—Varies in the different kinds of necrosis.

Character of the new bone and its various stages of organization.

Cloacæ.—How formed, shape, &c.

Prognosis.

Diagnosis.

Treatment.—General indications.

1. Remove the causes.
2. Palliate the symptoms.
3. Remove the dead bone after its detachment, and sometimes detach it with our instruments.
4. Treat the limb, where the entire shaft of the bone has been destroyed, as you would a fracture of the same part, until the new bone is sufficiently firm.

VIII. MOLLITIES OSSIUM.

Definition.

Causes.

Persons most liable to be attacked.

Symptoms.

Prognosis.

Diagnosis.

Pathology.

Treatment.

IX. FRAGILITAS OSSIUM.

Definition.

Causes.

Persons most liable to be attacked.

Symptoms.

Prognosis.

Diagnosis.

Pathology.

Treatment.

X. RACHITIS.

Definition.

Causes.

Persons most liable to be attacked.

Symptoms.

Diagnosis.

Prognosis.

Pathology.

Treatment.

XI. TUBERCLE IN BONE.

Varieties.—1. ENCYSTED TUBERCLE. 2. TUBERCULAR INFILTRATION.

Characteristics of first form, or encysted tubercle.

Effects on surrounding parts.

Similarity between encysted tubercle in bone, and tubercle in other tissues.

—In bone, as in the lungs, &c., the crude tubercle proceeds from the semi-transparent gray granulation, of Laennec and others.

Process of reparation after softening of the tubercle.

Tubercular pouches.

Results of these collections.—1. They may be absorbed. 2. They may cause suppuration and ulceration in the bone. 3. They may serve as the nidus of new tubercles.

Stages in the development and maturation of encysted tubercle.

1. Semi-transparent gray granulations.

2. Crude, opaque, encysted tubercle.

3. Bony excavation, loss of substance in the bone.

4. Evacuation of the tubercular cavity.

5. Hypertrophy of the cyst, obliteration of the cavity, recovery, (Nelaton.)

Characteristics of first form, or tubercular infiltration.—This may exist alone, or in connection with the other variety. It usually presents two different conditions.

1. Semi-transparent infiltration.

2. Puriform or opaque infiltration.

Difference between the two.

Effects on surrounding parts.—Invariably causes necrosis of the part attacked, and also produces purulent infiltration. It may also occasion tubercular cysts, caries, &c.

Process of reparation after the bone is affected or destroyed.

Stages in the development and termination of this form of tubercle.

1. Semi-transparent gray infiltration.

2. Interstitial hypertrophy of the bony tissue, or ivory degeneration.

3. Puriform infiltration.

4. Necrosis of the infiltrated portion.

5. Sequestration—foreign body—(Nelaton.)

Diagnosis of tubercle in bone.

Prognosis.

Seat of the disease.

Persons most liable.

Diseases produced by these tubercular deposits.

1. Certain forms of diseased spine.

2. Certain forms of white swelling.

3. Certain diseases of the smaller joints.

4. Certain diseases of the inner ear.

XII. OSSEOUS ANEURISM.

Definition.

History.

Causes.

Location.

Persons most liable.

Symptoms.

Effects on adjacent parts.

Diagnosis.

Prognosis.

Dissection.

Treatment.

XIII. EXOSTOSIS, OR SIMPLE BONY TUMOURS.

Definition.

Classification.

1. Those which originate in the periosteum, or sub-periosteal cellular tissue, and may be termed *external*, *periosteal*, or *peripheral*.

2. Those which originate in the substance of the bone, or in its cavity, and may be called *internal*, or *parenchymatous*.

3. The *cartilaginous*.

4. The *ivory-like*.

5. *General Exostosis*, involving the entire bone.

6. *Partial Exostosis*, when the disease is confined to a portion of the bone.

Mode of development of the periosteal tumours.

Mode of development of the parenchymatous tumours.

Liability.—Some bones more frequently attacked than others.

Number of tumours.

Size of tumour.

Color of tumour.

Form of tumour.

Causes of disease.

Symptoms.—Vary with the *cause*, *structure* and *shape* of tumour, its *location*, and the *rapidity* with which it grows.

Effects on adjacent parts.

Diagnosis.

Prognosis.

Terminations.—1. Resolution. 2. Conversion into other tissues. 3. Necrosis. 4. Suppuration.

Treatment.—1. Medical. 2. Surgical.

XIV. HYDATID ENCYSTED TUMOUR OF BONE.

Definition.

Causes.

Part of the bone most liable to be attacked.

Effect upon the bone.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

XV. SEROUS ENCYSTED TUMOUR OF THE BONE.

Definition.

Synonymes.—Spina ventosa, fibro-cellular tumour, wind-ball, &c.

Causes.

Part of the bone most liable to be attacked.

Usual situation of the tumour.

Effect upon the bone.

Size.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.—Depends upon the size and location of the tumour, and the nature of its contents. Several general methods.

1. Puncturing or simply opening the tumour.
2. Puncture followed by seton.
3. Puncture followed by stimulating fluids.
4. Removal of the semi-solid contents of the tumour, and pressure.
5. Removal of the tumour, or amputation of the limb when it occurs on an extremity.

Second Head.

XVI. OSTEO-SARCOMA.

Definition.

Causes.—1. Constitutional. 2 Local.

Bones most frequently attacked.

Age at which it generally occurs.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.—Removal. Amputate at a joint if possible.

XVII. MEDULLARY SARCOMA.

For the characteristics of this disease, see "Cancer."

XVIII. FIBROUS SARCOMA.

For the characteristics of this disease, see chapter on diseases of the "Fibrous Tissue."

XIX. FUNGUS HEMATODES.

For the characteristics of this disease, see "Cancer."

XX. MELANOSIS.

For the characteristics of this disease, see "Cancer."

Third Head.

XXI. WOUNDS OF BONE.

*Definition.**Causes.**Bones most usually involved.***Characteristics of wounds in bone.**Prognosis.**Diagnosis.**Process of union.**Treatment.*

XXII. FRACTURES IN GENERAL.

Definition.

Causes.—1. Predisposing or remote. 2. Proximate or efficient. The first class may be subdivided into the *local* and *general*.

(1.) The local predisposing causes are—

- a. The situation of a bone.
- b. The function of a bone.
- c. Some local disease.

The general predisposing causes are—

- a. The diathesis of the individual.
- b. The disease of the individual.
- c. The age.
- d. The season of the year.
- e. Sex.

(2.) The efficient causes of fracture are—

- a. Muscular action.
- b. External violence, directly or indirectly applied.

Bones most liable to fracture. Refer to statistical tables.*Classification of fractures.*

The first division is based upon the relation of the solution of continuity to the axis of the bone. Thus we have—

- a. Transverse fracture.
- b. Oblique or obtuse fracture.
- c. Longitudinal or parallel fracture.

The second division is based upon the appearance of the fracture, which is always modified by the kind of force producing the injury, and the bone involved. Thus we have—

- a. Fissures.
- b. Stellated fracture.
- c. Depressed or indented fracture.

The third division is based upon the displacements of the fragments. Thus we have—

- a. Longitudinal displacement, or shortened fracture.
- b. Lateral displacement, or displacement in the diameter of the bone.
- c. Rotary displacement, or displacement in the circumference of the bone.

- d. Angular displacement, or displacement in the direction of the bone.
- e. Impacted fracture.

Causes of displacement.

- 1. External violence, either direct or indirect.
- 2. Weight of the body in falling.
- 3. Weight of the limb.

4. Muscular contraction. Refer to Boyer's remarks on the influence of the different sets of muscles attached to the fragments. When the muscles are paralyzed by the blow, there is often no displacement of the fragments. Nor is displacement invariably present, even when the muscles retain their power. State the cause of this.

The fourth division is based upon the degree of injury done to the parts around the fracture, and to the bone itself. Thus we have—

- a. Simple fracture.
- b. Compound or open fracture.
- c. Complicated fracture.
- d. Comminuted fracture.

Symptoms of fracture.—1. Rational or physiological. 2. Sensible or physical. First or rational signs.

- a. Pain.
- b. Numbness.
- c. Loss of voluntary motion.
- d. Occasional constitutional disturbance.

These symptoms are never to be relied on, as they are present in other injuries. Second, or physical signs.

- a. Change in natural form of limb.
- b. Unnatural mobility of the part at the seat of fracture.
- c. Change in the length of the limb.
- d. Crepitus.

These symptoms are more to be relied on; yet it must be recollected that change in the natural form and length of a limb are present in luxations and sprains, and that crepitus may be occasioned by inspissation of the synovial fluid—the riding of one bone upon another in certain luxations—sanguineous tumours—the motion of tendons in their sheaths, and emphysematous collections. It may also be absent in fracture, or very indistinct. Lisfranc in such cases proposes the employment of the stethoscope in our examination.

Diagnosis.—Fractures may be confounded with—1. Luxations. 2. Bent bones. 3. Partial fracture. 4. Sprains. State the characteristics of each.

Prognosis.—Depends on variety of circumstances. It is modified, for example, by—

- a. The size of the bone.
- b. The number of muscles attached to the fragments.
- c. The seat of fracture.
- d. The relation of the bone to one of the great cavities.
- e. The extent of injury to the soft parts.
- f. The character of the force producing the fracture.

- g. The direction of the fracture.
- h. The age of the patient.
- i. The health of the patient.
- j. The season of the year.
- k. The extremity involved.
- l. The existence of more than one fracture.
- m. The degree of injury to the bone broken.
- n. The existence of a luxation along with the fracture.

The process of reparation of fractures, or the formation of callus.—Two kinds of callus.

a. Provisional, or that which serves the purpose of uniting the fragments for a time, and is then removed.

b. Definitive, or that which unites the fragments permanently.

There are several stages in the organization of callus which deserve attention. We have—

1. The effusion of blood and lymph.
2. The absorption of serum and the coloring matter of the blood, the inspissation of the lymph, and the union of the soft parts.
3. The conversion of the lymph into cartilage, which forms a distinct *pin* in the cavity of the bone, and a *ring* around the seat of fracture.
4. Ossification of the cartilage in the spongy tissue of the bone.
5. Ossification of the cartilage between the compact portion of the fragments.
6. The removal of the provisional callus, and the restoration of the cavity of the bone.

Time required for the formation of definitive callus.—Depends upon a variety of circumstances. Usually in adults, and in large bones, from eight to twelve months are requisite. The limb, however, is useful long before the process is completed.

Agents concerned in the formation of callus.

1. The periosteum. Not essential, though highly important in the formation of bone.
2. The vessels of the adjacent soft parts.
3. The bone itself.
4. The internal periosteum.
5. The absorbents which remove provisional callus and model the bone.

Mode of union in flat bones.

Strength of bones after the fracture is cured.—They are sometimes stronger, at others *weaker* than natural. The location of the fracture, as regards the nutritious arteries, and the activity of absorption, are the modifying agents here.

Treatment.—General indications.

1. The mode of moving patients in severe fractures from the spot at which the injury occurred, is a matter well deserving the attention of the surgeon.
2. As there is usually displacement of the fragments, "*reduction*," or setting will be required. This may be effected by *extension*, *counter-exten-*

sion, relaxation of the muscles, and coaptation. We are often resisted in the accomplishment of this indication by *spasm of the muscles, binding of the soft parts, and binding of the bones.* Mode of overcoming these difficulties explained. Value of myodiatomy in these cases discussed.

3. To prevent a recurrence of the displacement, *mechanical means must be applied*, and the part guarded against all motion. This indication is occasioned by the employment of *rest, favorable position, bandages, compresses, cushions and various apparatus or dressings.*

4. As inflammatory symptoms may supervene, measures must be taken to prevent their occurrence.

5. Spasm and pain often occur after dressing, and these symptoms must be relieved by anodynes, cold or warm irrigation, sometimes by changing the dressings, and occasionally by blood-letting. Be careful, however, not to deplete too much, as callus will not be formed unless a certain degree of excitement is allowed to take place in the seat of fracture.

6. In applying the dressings be careful to protect parts liable to pressure, or that seem chafed or swollen, by *straps, cushions and proper position.*

7. Carefully inspect the dressings daily, but do not disturb them so long as they are steady and properly adjusted.

8. When phlyctanæ form, carefully puncture them with a needle, but do not allow the cuticle to be removed.

9. Should superficial or deep-seated suppuration ensue, it must be treated on principles already laid down.

10. During convalescence the patient requires strict attention in order to prevent the occurrence of "secondary fracture."

11. After callus is formed, the parts, especially the joints, remain rigid. The indication here is to relax the rigidity by *friction, passive motion, warm douche, vapor bath, electricity and galvanism.*

12. Finally, *set the fracture* as soon as possible. Do not wait, as some advise, until swelling and inflammation have occurred and subsided.

General methods of treatment.

1. That in which the limb is kept extended in the *horizontal position.*

2. That in which it is maintained in *semi-flexed position.*

3. That in which it is encased in some *unyielding and permanent* dressing, as the "starch bandage," or plaster mould. This dressing is sometimes called the "*immovable apparatus.*"

4. That in which the limb is *suspended.* This method is technically called "hyponarthecia." It originated with Sauter and Mayor.

5. That in which the dressing is composed of handkerchiefs, variously folded. This method, from having been introduced by Mayor, is called "Mayor's handkerchief system."

6. That in which the ordinary splints and bandages are employed.

Review of these different methods.

COMPOUND FRACTURE.

Definition.

Causes.—1. The fragments of bone may be driven through the skin.

2. The integuments may be wounded by the body causing the fracture.
3. Sloughing may open the integuments.
4. An abscess may form and open.
5. Finally, pressure upon some projecting point may cause its ulceration.

Dangers.—1. Immediate shock to the system, from injury to the nerves, or from loss of blood.

2. Inflammation and fever.
3. Hectic fever.
4. Tetanus.

Question of amputation.—When called to a case of compound fracture, we are first to determine between the propriety of amputation, and an attempt to save the limb. No fixed rules in regard to this operation can be laid down, but we must take into consideration several points.

1. The age of the patient.
2. His constitution.
3. His habits.
4. His position in society.
5. His means of obtaining proper nursing, food, &c., during the treatment if we attempt to save the limb.
6. The season of the year.
7. Atmospheric peculiarities.

Circumstances supposed to warrant amputation.

1. When the injury done to the soft parts and bones is such as to warrant the impression that gangrene will inevitably ensue.
2. Where, along with the fracture, a portion of the limb is torn off, as we see in wounds inflicted by machinery, cannon shots, &c.
3. Where the soft parts are extensively stripped off.
4. Where the fracture extends into a larger joint.
5. Where the bone is broken in several places, and the soft parts extensively injured.
6. Where the fracture is complicated with laceration of large blood-vessels and nerves.

Before resorting to amputation, even under these circumstances, weigh well its dangers.

Time at which amputation should be performed.—Difference of opinion among surgeons on this point; some preferring *immediate*, others *secondary* amputation. It would appear from the reports that in *civil* practice the latter method has been most successful, while in *military*, the former is most to be relied on. Many cases, however, admit of no delay, even in civil practice, and the surgeon must let experience determine the course to be pursued. Never operate until reaction to a certain degree has taken place.

Treatment where it is determined to attempt the cure of the injury without amputation.

1. *When the injury of the soft parts is comparatively slight.*—Here we must close the wound at once by straps, the bandage, lint soaked in blood, or lint

covered with oil-silk ; apply splints, or the proper dressings, and treat the case like one of simple fracture.

2. *When the injury of the soft parts is more extensive, and the bones protrude and overlap, and cannot readily be reduced.*—Here divide the soft parts, pick away any loose pieces of bone, and, if necessary, saw off the ends of the bone. Then apply a *loose* bandage of strips, place the limb on a pillow in a fracture box, or upon a carved splint, and use irrigation with cold water if the weather is warm ; or, if the accident occur in winter, we may use the warm water dressing or a poultice. It is in this form, also, that the *bran* dressing of Dr. J. R. Barton is so useful. *Constitutional* symptoms are to be prescribed for.

3. When, in spite of all our efforts to prevent it, *profuse suppuration* takes place, we must give free vent to the pus, and support the constitution.

4. After the subsidence of *swelling, suppuration* and *severe pain*, treat the case like a simple fracture, with splints and bandages.

5. Where our remedies fail to relieve, and *mortification* sets in, we must amputate, if possible.

Character of the callus in compound fracture, and the agents employed in its formation.

COMPLICATED FRACTURE.

Definition.

Causes.—The fragments may be thrust through large vessels, or nerves, or into joints ; or the force producing the fracture may cause their injury, or occasion luxation.

Dangers.—1. Immediate shock to the system from loss of blood, or injury of the nerves. 2. Sloughing from infiltration of blood and serum. 3. Mortification from loss of nervous influence. 4. Permanent paralysis of the limb. 5. Phlebitis. 6. Hectic fever. 7. Tetanus.

Question of amputation.—No general rules can be laid down, but the circumstances already stated as modifying our treatment of compound fracture should always be taken into consideration here.

Treatment.—Varies with the complication.

1. Where we have profuse hemorrhage from a wounded vein. Bleed, apply cold, and pressure, and afterwards frictions and pressure, to cause the absorption of the blood ; occasionally a ligature will be required. Be careful to prevent phlebitis.

2. When we have hemorrhage from a large artery, characterized, where there is no external wound, by a tumour pulsating at first, apply a ligature *above* the tumour, and do not as a general rule open the integuments and seek for the artery as advised by Boyer. When the collection of blood is so great as to threaten sloughing, then open the tumour, evacuate the blood and tie the vessels. When a wound in the integument exists, we may sometimes dilate it, and thus tie the artery above and below.

3. When a large nerve is torn across, which is manifested by paralysis, numbness, pain and spasm of the limb, we must bleed, place the part at rest, apply leeches, cold or hot applications, and give anodynes.

4. In comminuted fracture, complicated with a wound in the integuments, we must take away splinters, *provided* they are not attached to the soft parts. Close the wound and treat it like a bad compound fracture. When the bone is crushed to pieces, it will generally be proper to amputate.

5. When a luxation complicates the fracture, always protect the fracture by some firm dressings, then reduce the luxation as speedily as possible, and afterwards set the fracture and treat it according to the rules laid down.

6. When the fracture extends into a joint, we have to fear intense inflammation, and must treat the case accordingly.

7. When mortification takes place amputate.

8. When tetanus supervenes treat it in the usual manner.

IRREGULAR CALLUS, OR FRACTURE UNITING WITH DEFORMITY.

Causes.—Usually, neglect or bad treatment of the case, or the wilfulness of the patient, are the immediate causes of deformity.

Question of the propriety of interference in these cases.—Many points must be considered before the operation is undertaken.

1. The duration of the injury.
2. The degree of functional injury resulting from the deformity.
3. The practicability of relieving the deformity without endangering the life of the patient.
4. The size and location of the injury.
5. The age of the patient.
6. The health of the patient.
7. The season of the year.
8. The existence or not of disease of the soft parts or of the bone itself.

Means employed to remove the deformity.—These vary with the duration of the injury.

1. *Pressure and extension of the limb.*—When called to a badly set fracture, within the first *sixty* days after its occurrence, or while the callus is yet yielding, we may often succeed in restoring the limb by well regulated *pressure and extension of the limb*. Cases are reported by Dupuytren and others, in which these measures have succeeded even after the lapse of the 120th day from the receipt of the injury.

2. *The Seton.*—In these cases Wienhold proposes the introduction of a *seton*, which, by causing suppuration, would break down the callus.

3. *Rupture of the callus.*—If more than sixty or seventy days have elapsed before we are called, as a *general rule*, *rupture of the callus* will prove more useful than any attempts to mould it into proper shape. This is an old operation, and has recently been revived by Cæsterlin, Richerand, Dupuytren and others.

Cases to which it is applicable.

Dangers of this operation.

Preparation of the patient.

Mode of rupturing the callus.

After treatment.

4. *Resection of bone.*—In cases of long standing, where the bones overlap, and are firmly bound to each other, *pressure*, the *seton*, and *refracture*, will all fail to afford relief, and we must then resort to “*resection of the bones.*”

Dangers of this operation.

Preparation of the patient.

Mode of performing the operation.

After treatment.

Removal of the exuberent callus.—When spiculæ or ledges of bone are thrown out around the seat of fracture, and interfere with the motion of its parts, or occasion pain, we may, after waiting a few months for the efforts of nature, cut down upon them and remove them with the knife or saw. (See cases of this deformity reported by Alcock, Velpeau, Dawson, and myself.)

PSEUDARTHROSIS, FALSE JOINT, OR NON-UNION.

Definition.

Frequency of the defect.

Varieties.—1. Where the fragments are united by *soft callus*. 2. Where the fragments are united by a *ligamentous band or bands*. 3. Where the fragments are united by *cellular tissue* alone. 4. Where a *sort of joint* is established. The bones being rounded off, tipped with cartilage, covered by a synovial membrane, and held together by a capsular ligament. Very rare.

Causes.—1. Constitutional. 2. Local.

First, or constitutional.

a. Syphilis.

b. Pregnancy or suckling.

c. Fevers of different kinds.

d. Cancer.

e. Fragilitas ossium.

f. Scurvy.

g. General impoverishment of the system.

h. Paralysis.

i. Deficient supply of arterial blood.

j. Advanced age.

Second or local.

a. Frequent motion of the fragments.

b. Separation of the fragments.

c. Disease of the fragments.

d. Interposition of foreign bodies between the fragments.

e. Tight bandaging.

f. The long continued use of cooling applications.

g. The too early use of a fractured limb.

h. Division or stripping off of the periosteum.

i. Want of cellular tissue.

Symptoms.

Diagnosis.

*Prognosis.**Object of treatment.*

Treatment.—Various methods have been introduced.

1. Simply keeping the parts in splints for several months.
2. Friction.
3. Compression.
4. The application of caustic alkali to the integuments over the seat of fracture.
5. The introduction of a heated canula between the bones. Proposed by Mayor.
6. The seton—proposed by Dr. Physick. Modification of this agent by Rhynd.
7. Escharotics applied to the ends of the bones.
8. Removal of the extremities of the fragments.
9. Section of ligamentous union.
10. Section of muscles attached to the fragments, coaptation, and friction or pressure. Proposed by Dieffenbach, in false joint of the olecranon, patella, &c.
11. Acupuncture.
12. Electricity.
13. Blisters.
14. The use of iodine or mercury.
15. The metallic ligature of Sommé.
16. The actual cautery. Employed by Kirkbride and others.
17. The introduction of ivory pegs—(Dieffenbach.)

DIASTASIS, OR SEPARATION OF EPIPHYSES.

Definition.

Age at which the accident occurs.—Varies in different individuals. May take place at any age previous to that at which the epiphyses become attached to bone. This generally occurs before puberty.

Causes.—Violence or muscular contraction.

Symptoms.—Obscure. Unnatural mobility at the seat of the epiphysis is the most important sign.

Diagnosis.—May be confounded with *fracture* or *luxation*.

Prognosis.—The injury, if properly managed, rarely results in deformity; if neglected, the person is almost sure to be crippled.

Treatment.—Depends of course on the seat of the lesion. The general indications are nearly the same with those laid down for our guidance in the treatment of fracture.

PARTICULAR FRACTURES.

I. NASAL BONES.

*Liability.**Causes.**Varieties.*

Complications.—Concussion of brain; emphysema; injury of lachrymal duct and canal; fracture of cribriform plate; inflammation, and caries or necrosis of the bone.

*Symptoms.**Diagnosis.**Prognosis.**Treatment.*

II. MALAR BONES.

Liability.—This accident is very rare.

*Causes.**Varieties.**Complications.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

III. SUPERIOR MAXILLARY BONES.

*Liability.**Causes.**Varieties.**Complications.**Diagnosis.**Prognosis.**Treatment.*

IV. INFERIOR MAXILLARY.

*Liability.**Causes.**Parts most liable to fracture.**Varieties.**Complications.**Symptoms of each of the fractures of this bone.**Diagnosis.**Prognosis.**Treatment.*—Depends on the seat of fracture.

V. OS HYOIDES.

*Liability.**Causes.**Varieties.**Complications.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

VI. THYROID CARTILAGE.

*Liability.**Causes.**Varieties.**Complications.**Diagnosis.**Prognosis.**Treatment.*

VII. STERNUM.

*Liability.**Causes.**Varieties.**Complications.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

VIII. RIBS.

*Liability.**Ribs most frequently broken.**Parts of the bone most liable to fracture.**Causes.*—External violence. Muscular contraction, as in coughing.*Varieties.**Complications.*—Hemoptysis, emphysema, pleuritis, empyema.*Symptoms.**Diagnosis.**Prognosis.**Treatment.*

IX. CLAVICLE.

Liability.—Its *shape, size, texture, exposed situation, and function*, render this bone liable to fracture.*Parts usually broken.**Cause.*—Direct or indirect violence.*Varieties.*—Complete, incomplete, simple, &c.*Complications.*—Paralysis of arm, injury of axillary plexus and vessels. (Earle.)*Symptoms.**Diagnosis.**Prognosis.**Treatment.*—Various dressings employed to carry out the *three indications* of Desault. 1. Desault's bandage. 2. Boyer's bandage. 3. Mayor's handkerchiefs. 4. Fox's Apparatus. 5. Brown's bandage. 6. Dr. Reynell Coates' bandage. 7. Hiester's dressing. 8. Sir A. Cooper's.

X. SCAPULA.

Liability.—Its site and mobility protect it in a great measure from fracture.

Parts most liable to fracture.—1. Acromion process. 2. Inferior angle. 3. Body of the bone. 4. The coracoid process. 5. The spine. 6. The neck.

Causes.

Varieties.

Complications.

Symptoms.—Depends on part broken.

Diagnosis.—Depends on part broken.

Prognosis.—Depends on part broken.

Treatment.—Varies with the seat of injury.

XI. HUMERUS.

Liability.—According to Longsdale, fractures of this bone are proportionately less frequent than is usually supposed—about one-sixteenth of all fractures.

Ages at which it usually occurs.—Childhood and old age.

Parts of the bone liable to fracture.—1. The head. 2. The anatomical neck. 3. The surgical neck. 4. The epiphysis. 5. The shaft. 6. The condyles.

Causes.—Muscular contraction, direct and indirect violence.

Varieties.

HEAD OF HUMERUS.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.

Treatment.

ANATOMICAL NECK.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.

Treatment.

SURGICAL NECK.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.

Treatment.

SEPARATION OF THE EPIPHYSES.

- Liability.*
- Causes.*
- Variety.*
- Signs.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SHAFT ABOVE INSERTION OF DELTOID.

- Liability.*
- Causes.*
- Variety.*
- Signs.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SHAFT AT ITS MIDDLE.

- Liability.*
- Causes.*
- Variety.*
- Signs.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SHAFT ABOVE CONDYLES.

- Liability.*
- Causes.*
- Variety.*
- Signs.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CONDYLES.

- Liability.*
- Causes.*
- Variety.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

XII. BONES OF THE FORE-ARM.

Liability.—More frequently broken than the humerus—one-fifth of all fractures.

Bones involved.—One or both may be broken. The radius is most liable, from its connection with the wrist.

- Causes.*
- Varieties.*

BOTH BONES.

Parts generally broken.

Causes.

Variety.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FRACTURE OF RADIUS ALONE.

Liability.—Very common.

Causes.

Variety.

Parts usually broken.—Head, neck, shaft, or inferior extremity.

Symptoms of each.

Diagnosis.

Prognosis.

Treatment.

FRACTURE OF ULNA ALONE.

Liability.

Causes.

Variety.

Parts usually broken.—Shaft, extremities, coronoid process, olecranon process.

Signs of each.

Diagnosis.

Prognosis.

Treatment.

XIII. CARPAL BONES.

Liability.

Causes.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

XIV. METACARPAL BONES.

Liability.

Causes.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

XV. PHALANGEAL BONES.

Liability.
Causes.
Varieties.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

XVI. SACRUM.

Liability.
Causes.
Varieties.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

XVII. OS COCCYGIS.

Liability.
Causes.
Varieties.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

XVIII. OS INNOMINATUM.

Liability.
Causes.
Situation of fracture.
Varieties.
Diagnosis.
Prognosis.
Treatment.

XIX. FEMUR.

Importance of the fracture of this bone.
Liability.
Causes.
Varieties.
Parts usually broken.—Head, neck, trochanters, shaft, and condyles.

FRACTURE OF THE HEAD.

Liability.
Causes.
Varieties.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

FRACTURE OF THE CERVIX WITHIN THE CAPSULAR LIGAMENT.

- Liability.*
- Causes.*
- Age most liable.*
- Sex most liable.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

**FRACTURE OF THE CERVIX WITHOUT THE CAPSULAR LIGAMENT,
OR PARTLY WITHIN AND PARTLY WITHOUT.**

- Liability.*
- Causes.*
- Age most liable.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF THE TROCHANTERS.

- Liability.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF THE SHAFT JUST BELOW TROCHANTERS.

- Liability.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF THE SHAFT.

- Liability.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF THE CONDYLES.

- Liability.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

XX. PATELLA

- Liability.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

XXI. BONES OF THE LEG.

- Liability.*
- Causes.*
- Variety.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF FIBULA ALONE.

- Liability*
- Causes.*
- Varieties.*
- Part of bone usually broken.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF TIBIA ALONE.

- Liability.*
- Causes.*
- Varieties.*
- Part of bone usually broken.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

XXII. BONES OF THE FOOT.

- Liability.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FRACTURE OF OS CALCIS.

- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

GENERAL REMARKS.
 JOINTS MOST LIABLE TO DISEASE.
 CAUSES OF DISEASE.
 EFFECTS ON CONSTITUTION.
 CLASSIFICATION.—All the diseases of the joints may be divided into three heads.
 1. Diseases originating in the soft parts, either within or without the capsule of a joint.
 2. Diseases originating in the hard tissues of a joint.
 3. Affections which may be considered as products or terminations of diseased action.
 4. Malignant diseases of the joints.
 5. Wounds.
 6. Sprains.
 7. Dislocations.
 8. Congenital lesions.
 9. Diseases of the bony masses.
 FIRST HEAD.
 a. Synovitis—acute and chronic.
 b. Hydrops articularis.
 c. Abscess.
 d. Rupture of ligaments.
 e. Inflammation of ligaments.
 f. Fleasy tumours of the synovial membrane.
 g. Loose cartilages in the joints.
 h. Certain forms of white swelling.
 i. Coxalgia, or hip disease.
 j. Neuralgia.
 k. Inflammation of the cellular tissue.
 SECOND HEAD.
 a. Certain forms of white swelling.
 b. Certain forms of coxalgia.
 THIRD HEAD.
 a. Hypertrophy of articular cartilage.
 b. Atrophy of articular cartilage.
 c. Proliferation of articular cartilage.
 d. Softening of articular cartilage.
 e. Ulceration of articular cartilage.
 f. Reparation of articular cartilage after wounds, &c.
 g. Alteration in the form of the head and neck of the long bones.

2. DISEASES AND INJURIES OF THE JOINTS.

GENERAL REMARKS.

JOINTS MOST LIABLE TO DISEASE.

CAUSES OF DISEASE.

EFFECTS ON CONSTITUTION.

CLASSIFICATION.—All the diseases of the joints may be ranged under nine heads.

1. Diseases originating in the soft parts, either *intra* or *extra*-articular.
2. Diseases originating in the hard tissues of a joint.
3. Affections which may be considered as products or terminations of diseased action.
4. Malignant diseases of the joints.
5. Wounds.
6. Sprains.
7. Dislocations.
8. Congenital luxation.
9. Diseases of the bursæ mucosæ.

FIRST HEAD.

- a. Synovitis—acute and chronic.
- b. Hydrops articulari.
- c. Abscess.
- d. Elongation of ligaments.
- e. Inflammation of ligaments.
- f. Flemy tumours of the synovial membranes.
- g. Loose cartilages in the joints.
- h. Certain forms of white swelling.
- i. Coxalgia, or hip disease.
- j. Neuralgia.
- k. Inflammation of the cellular tissue.

SECOND HEAD.

- a. Certain forms of white swelling.
- b. Certain forms of coxalgia.

THIRD HEAD.

- a. Hypertrophy of articular cartilage.
- b. Atrophy of articular cartilage.
- c. Eburnation of articular cartilage.
- d. Softening of articular cartilage.
- e. Ulceration of articular cartilage.
- f. Reparation of articular cartilage after wounds, &c.
- g. Alteration in the form of the head and neck of the long bones.

- h. Collections of blood in a joint.
- i. Chalkey concretions in a joint.
- j. Anchylosis.

First Head.

I. SYNOVITIS.

Definition.

Causes.—1. Constitutional. 2. Local.

First, or constitutional.—Rheumatism, gout, gonorrhœa, parturition, pregnancy, checked leucorrhœa, catheterism.

Second, or local.—Blows, strains, mechanical injuries of all kinds, foreign bodies in the joints, wounds.

Symptoms.—Pain on the slightest motion; swelling, redness, heat and tenderness of the skin; fluctuation; displacement of any loose bone or cartilage about the joint; and constitutional disturbance.

Diagnosis.—May be confounded with inflamed bursæ, but scarcely with any thing else.

Prognosis.—Varies. When but one joint is affected—when the cause is local—when the inflammation runs high—it may terminate in ulceration or degeneration of the synovial membranes, ulceration of the cartilages and bones, necrosis, the loss of the joint, or even the life of the patient. Under other circumstances, the prognosis is rather favorable.

Dissection.

Treatment.—General indications. 1. Remove the cause. 2. Subdue the inflammation by general and local antiphlogistic remedies. 3. Employ specific remedies when the cause is specific. 4. Prevent anchylosis.

II. HYDROPS ARTICULI, OR HYDRARTHUS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

III. ABSCESS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IV. ELONGATION OF LIGAMENTS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. INFLAMMATION OF LIGAMENTS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

VI. FLESHY TUMOURS OF THE SYNOVIAL MEMBRANE.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

VII. CARTILAGES IN THE JOINTS.

Definition and history.

Joints most liable.—The ginglymoidal, especially the knee, elbow and jaw.

Condition in the joint.—Loose or attached.*Size.*—Varies.*Consistence.*—Varies.*Structure.*—Scarcely organized.*Number.*—Varies.

Mode of formation.—Different explanations. Those of Paré, Monro, Erlangen, Hunter, Cooper, and Brodie, referred to.

*Symptoms.**Diagnosis.**Prognosis.*

Treatment.—Two general methods. 1. Compression. 2. Extraction. Relative value of the two. Dangers of extraction referred to, and the different operations, especially that of Goyraud and Syme, explained.

VIII. WHITE SWELLING, OR FUNGUS ARTICULI.

*Definition.**Confusion in relation to the precise meaning of the term.*

Brodie's classification.—According to Sir Benj. Brodie, all the cases of white swelling may be referred to one of four different lesions. 1. Simple inflammation of the synovial membrane. 2. Gelatinous degeneration of the synovial membrane. 3. Ulceration of the cartilages. 4. Ulceration of the bone.

*Ages most liable.**Joints most liable.**Causes.*—Constitutional and local.*Symptoms.*—Vary with the form of lesion. Three groups may be made.*Diagnosis.*—Highly important to distinguish one from the other.*Prognosis.*—Varies, but generally it is unfavorable.

Terminations.—Resolution, ankylosis, suppuration, alteration of all the tissues of the joint, necrosis, the loss of the joint or limb, or the life of the patient.

Dissection.—Depends on the stage at which it is made, and the form of the disease.

Treatment.—Differs somewhat in each variety, but there are certain general indications that will answer for all. The remedies are of course both *constitutional* and *local*.

General indications in the first stage of the disease.—1. Keep the part at rest by splints and position. 2. Employ general and local antiplogistics if inflammation runs high. 3. Prevent contraction of the limb.

General indications in the second stage.—1. Counter irritation should be employed. 2. Pressure as recommended by Scott is often useful. 3. Employ alteratives to suit the diathesis. 4. Keep the joint at rest, while the patient is allowed, if possible, access to the fresh air. Crutches and sling, &c. 5. Support the strength if prostration should supervene. 6. Prevent ankylosis.

General indications in the third stage.—1 Support the general health. 2. Never open the abscess unless we are forced so to do by peculiar circumstances. 3. Poultice the part after the abscess opens. 4. Keep the joint in a splint. 5. It is often essential to obtain ankylosis to save the life of the patient. 6. When all our remedies fail, and the patient is sinking, *amputate* or *excise* the joint.

IX. COXALGIA, OR HIP DISEASE.

Definition.

Persons most liable.—Children of a scrofulous habit, from three to four years of age, or from seven to fourteen. May occur in adults.

Causes.—1 Constitutional. 2. Local.

First, or constitutional.—Scrofula, atmospheric changes, rheumatism, repelled eruptions.

Second, or local.—Mechanical injuries of every kind.

Symptoms.—May be divided into four groups. 1. Those which characterize the period of apparent *elongation* of the limb, with slight pain in the knee and lameness, &c. &c. 2. Those which belong to the period of *shortening* of the limb, with pain in the hip itself, &c., &c. 3. Those which characterize the period of suppuration and ulceration in the joint. 4. Those which indicate convalescence. The cause of *elongation* and *shortening* in the first and second stages explained.

Diagnosis.—May be confounded with—

- a. Fracture of the cervix femoris.
- b. Luxation of the caput femoris.
- c. Congenital luxation.
- d. Rheumatism.
- e. Chronic inflammation of the upper third of the femur.
- f. Sciatica.
- g. Psoas abscess.

Prognosis.—May be stated to be generally unfavorable.

Dissection.—The appearance on dissection depends upon the stage and progress of the disease.

Pathology.—Much diversity of opinion on this point. State my own views.

Treatment.—General indications. 1. Rest and the antiplogistic system throughout the first stage. 2. Place the limb in a splint of such construction as shall maintain the limb as nearly in its natural position as possible, so that when resolution cannot be obtained, and false joint or ankylosis must be brought about, the patient may still retain its use. Speak of Physick's and Humbert's method of practice. 3. Attend to the diathesis. 4. Apply counter irritants. 5. Support the health when this support is indicated. 6. Evacuate pus when it is formed in large quantities, poultice, and support the health. 7. When resolution cannot be obtained, endeavor to form a false joint, or establish ankylosis. 8. After inflammation has subsided, and the limb remains shortened from muscular contraction, it is often useful to employ Humbert's method of reduction. Point out the dangers of this practice, as well as its advantages. 9. Protect the limb for some time after the cure has been established. 10. When the limb is shortened or deformed, apply some apparatus by which the patient will be enabled to walk with comfort.

X. NEURALGIA.

Definition.

Persons usually attacked.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

XI. INFLAMMATION OF THE CELLULAR TISSUE EXTERIOR TO THE JOINT.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

Second Head.

I. CERTAIN FORMS OF WHITE SWELLING.

For the characteristics of these forms, refer to what has already been given under the first head.

II. CERTAIN FORMS OF COXALGIA.

For the characteristics of these forms, refer to what has already been said under the first division.

Third Head.

I. HYPERTROPHY OF THE ARTICULAR CARTILAGES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

II. ATROPHY OF THE ARTICULAR CARTILAGES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

III. EBURNATION OF THE ARTICULAR CARTILAGES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IV. SOFTENING OF THE ARTICULAR CARTILAGES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. ULCERATION OF THE ARTICULAR CARTILAGES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VI. REPARATION OF THE ARTICULAR CARTILAGE AFTER
WOUNDS AND FRACTURES.

Describe this process.

VII. ALTERATION IN THE FORM OF THE HEAD AND NECK
OF THE LONG BONES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VIII. COLLECTIONS OF BLOOD IN THE CAVITY OF A JOINT.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

IX. CHALKEY CONCRETIONS IN AND AROUND JOINTS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

X. ANCHYLOSIS.

*Definition.**Classification.*—1. Partial or local.

2. General or universal.

1. True or complete.

2. False or incomplete.

1. Extra capsular.

2. Intra capsular.

3. Capsular.

Causes.—Most of the causes operate by keeping the parts motionless, or nearly so, for a length of time. For example: diseases of various kinds, tumours, fractures, dislocations, simple rest, cicatrices, injuries of tendons and muscles, paralysis of one set of muscles, contraction of fascia, &c.; others operate under all circumstances, as old age, chronic rheumatism or gout. Sometimes it is a protective effort of nature, as seen in curvatures of the spine, ankylosis of diseased joints, &c.

Liability.—Ginglymoid joints are more frequently thus affected than the orbicular. Why?

Symptoms.—Depend on the variety of ankylosis.

Diagnosis.—Cannot be confounded with any other affection. There is often much difficulty, however, in the distinguishing one form from another.

Prognosis.—Varies with the character of the lesion—the nature of its cause—the duration of the case—the age and health of the patient—the joint involved, &c.

Dissection.—Varies with the kind of ankylosis.

Treatment.—In *true* ankylosis we can only relieve the patient by *establishing a false joint*, or straightening the limb by *cutting out a plug of bone*, as performed by Dr. J. R. Barton. Never *excise the joint* nor *amputate the limb*, as advised by some; nor should we attempt Louvrier's operation.

In *false* ankylosis, the treatment is modified by the cause of stiffness. The agents usually employed are *passive motion*, *forcible extension*, *frictions*, *electricity*, *galvanism*, *vapor bath*, the *screw*, *division of tendons*, *fasciæ*

and muscles, excision of cicatrices, and some contrivance to take the place of paralyzed muscles, as advised by Sir C. Bell. The comparative merit and dangers of these means explained.

Fourth Head.

MALIGNANT DISEASES.

The joints are liable to be attacked with malignant diseases of various kinds, but especially with *malignant exostosis*, *medullary sarcoma* and *fungus hæmatodes*. For the characteristics of these diseases, as well as their treatment, see chapter on "Tumours."

Fifth Head.

WOUNDS OF JOINTS.

Division.

Causes.

Symptoms.—Vary with the character of the wound.

Diagnosis.—Generally, there is no difficulty in deciding upon the character of the wound at once. Punctured wounds may be confounded with wounds of the bursæ mucosæ.

Prognosis.—Depends on the *joint injured*, the *character of the wound*, the *age and health of the patient*, the *season of the year*, and the *possibility of obtaining the proper remedy*.

Dangers.—Inflammation, tetanus, caries, and necrosis.

Dissection.—The appearances on dissection depend upon the stage of the disease, at which the examination is made.

Treatment.—Divided into—1. Constitutional. 2. Local. The remedies must be modified to suit the peculiarities of the case.

Sixth Head.

SPRAINS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Results or effects of the injury.

Treatment.

Seventh Head.

DISLOCATIONS.

Definition.

Causes.—1. Predisposing or remote. 2. Proximate or efficient. The first class may be subdivided into the *local* and *general*.

(1.) The local predisposing causes are—

- a. Preternatural length of the ligaments of a joint, (see Stanley.)
- b. Peculiar congenital formation of the joint.

- c. The form of the joint.
- d. Paralysis of the muscles around the joint.
- e. Disease of the constituent tissues of a joint.
- f. Hydrops articuli.
- g. Tumours or earthy deposits in or about the joints.
- h. Interstitial change in the articulating surfaces.

The general predisposing causes are—

- a. Preternatural laxity of the entire ligamentous system, (see Delpech.)
- b. The age. Dislocations are rare in the *very young* or *very old*.

(2.) *Local or external causes.*

- a. External violence.
- b. Muscular action.

Joints most liable to luxation.—The ball and socket joints, from the character of their articulating surfaces; the weakness of their ligaments; and their subjection to the influence of a larger number of muscles, are more frequently dislocated than the ginglymoid.

Classification of dislocations.—The first division is based upon the definitive position of the head of the bone. Thus we have—

- a. Primitive luxation.
- b. Consecutive luxation.

The second division is based upon the degree of displacement. Thus we have—

- a. Complete luxation.
- b. Incomplete luxation, or sub-luxation.

The third division is based upon the duration of the accident. Thus we have—

- a. Recent luxation.
- b. Old luxation.

The fourth division is based upon the degree of injury inflicted upon the adjacent soft parts or the bones themselves. Thus we have—

- a. Simple luxation.
- b. Compound luxation.
- c. Complicated luxation.

Symptoms of luxation.—1. Rational or Physiological. 2. Sensible or Physical.

First, or rational.

- a. Pain.
- b. Numbness or paralysis in limb.
- c. Loss of motion.
- d. Constitutional disturbance.

Second, or physical.

- a. Change in the entire form of the limb.
- b. Change in the natural length of the limb.
- c. Unnatural rigidity of the limb.
- d. The disappearance or preternatural enlargement of the natural prominences of the joint.

e. The appearance of unnatural cavities about the joints.

f. The appearance of a tumour (formed by the head of the bone) in the vicinity of the joint.

Diagnosis.—Dislocation may be confounded with—

1st. Fractures.

2d. Sprains.

3d. Bent bones.

Prognosis.—Depends on a variety of circumstances. It is modified, for example, by—

a. The joint involved.

b. The degree of displacement.

c. The duration of the injury.

d. The degree of injury sustained by the soft parts and bones.

e. The constitution of the patient.

f. The direction taken by the head of the bone.

Dissection.—Appearances depend on the duration of the injury, and the tissues upon which the head of the bone rests.—State the usual appearance in *recent and old luxations*.

Treatment.—General indications.

1. The general condition of the patient demands our first attention, and before we attempt to relieve the injury he must be placed in as comfortable a position as possible, his fears calmed, and reaction to a certain degree established. It is sometimes well to deviate from the last direction, for should the patient faint from pain merely, his muscles are in the most favorable condition for our attempts at reduction.

2. As there is always displacement, "*reduction*" will be required. This may be accomplished, in many cases, by the employment of *mechanical means* alone, but often *constitutional agents* are required.

The mechanical means are—

a. Extension.

b. Counter extension.

c. Change in the position of the different bones.—To accomplish these objects we employ *the hands of assistants, bands, rollers, the pulleys, and various apparatus* for overcoming muscular resistance. The forces must be applied *steadily and slowly, they must also be equal* and generally in *the line of displacement*.—Muscular resistance is often overcome by directing the patient's mind from the set of muscles concerned in the accident.—We must also select the *part* upon which our *extending and counter extending* bands are to be placed. Difference among surgeons on this point.—The obstacles to reduction by mechanical means alone are—

1. Muscular contraction.

2. The degree of laceration of the soft parts.

3. The shape of the joint.

4. The locking of the bones.

5. The existence of adhesions.

6. The interposition of tendons or ligaments.

The constitutional remedies employed, are intended chiefly to produce prostration, so that all muscular resistance is destroyed; and the most efficient are:

- a. Blood-letting.
- b. Hot bath.
- c. Tart. Antim. et Potassæ.
- d. Fumes of tobacco, or injections of its infusion.
- e. Intoxication.
- f. Production of anesthesia.

Value of Myodiatomy in difficult cases discussed.—Also the propriety of attempting the reduction of *old luxations* considered.

3. From the partial paralysis of the muscles, and laceration of the ligaments, it is essential to apply some mechanical means to prevent the recurrence of the luxation. The usual dressings for fractures of the same bones may be employed for a week or two after the reduction of the accident.

4. As inflammatory symptoms may supervene, measures must be taken to prevent their occurrence, and should they occur in spite of our efforts to the contrary, the antiphlogistic system in all its details must be employed.

5. For the rigidity, which, in almost every case, is the result of the dislocation, the remedies already mentioned as applicable to the same difficulty coming on after fractures, may be had recourse to.

6. When complicated with fracture, always recollect to dress both injuries before you leave the patient, and also to adopt the plan of treatment already indicated under the head of fractures.

COMPOUND AND COMPLICATED LUXATIONS.

After the reduction of the bones, the treatment of these injuries is identical with that advised in cases of compound and complicated fractures. It is, therefore, needless to repeat it here. The remarks relative to the dangers, and question of amputation, in the latter class of accidents, apply very well to the former.

PARTICULAR LUXATIONS.

I. INFERIOR MAXILLARY.

Anatomy of the joint.

Liability.—This accident is common.

Causes.—1. Predisposing. 2. Proximate.

(1.) Age, sex, and preternatural elongation of the processus vaginalis.

Variety.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

II. SUB-LUXATION OF THE LOWER JAW.

*Definition.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

III. OS HYOIDES.

*Liability.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

IV. RIBS.

*Anatomy of the articulations.**Liability.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

V. STERNUM.

*Liability.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

VI. CLAVICLE.

Anatomy of its articulations.

Liability.—May be luxated at either extremity. The scapular is most frequently displaced.

Direction of displacement.—The sternal extremity may be displaced in three directions:—*forwards*, *backwards*, and *upwards*. The scapular is usually thrown *upwards* or *downwards* beneath the acromion process.

I. STERNAL EXTREMITY FORWARDS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

II. STERNAL EXTREMITY BACKWARDS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

III. STERNAL EXTREMITY UPWARDS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

IV. SCAPULAR EXTREMITY UPWARDS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

V. SCAPULAR EXTREMITY DOWNWARDS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

VII. LUXATION OF THE INFERIOR ANGLE OF THE SCAPULA.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

VIII. LUXATION OF THE HEAD OF THE HUMERUS.

Anatomy of articulation.

Liability.—Very great, from the small size of the articulating surfaces; the weakness of its ligaments; the freedom of its motions; its constant exposure; and from its subjection to the influence of several muscles.

Direction of displacement.—Downwards, forwards, backwards, and partially upwards and forwards. Displacement directly upwards, to any extent, cannot occur without fracture of the acromion. Explain the *intercostal* and *thoracic* luxations mentioned by Larrey and Percy.

I. DOWNWARD LUXATION.

Causes.

Symptoms.

Diagnosis.—May be confounded with fracture of cervix scapulæ, fracture of the neck of humerus, bruises, paralysis of the muscles, and dislocation of the biceps tendon.

Prognosis.

Dissection.

Complications.—Great swelling; emphysema; inflammation; paralysis of muscles.

Treatment.—General indications.

a. Fix the scapula.

b. Relax the muscles.

c. Draw the head of the bone to its cavity.

General methods.

a. Simple elevation of the arm.

b. Lifting the head of the bone while the arm is abducted.

c. Mothe's plan, or rather, Mr. White's.

d. Extension, with heel in the axilla.

e. Pullies and bands.

f. Reducing apparatus of different kinds.

g. Myodiatomy.

It may be necessary to use *constitutional* remedies in combination with either of these plans.

II. FORWARD LUXATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Complications.

Treatment.—Reduce to the first, then employ the measures already indicated.

III. BACKWARDS LUXATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Complications.

Treatment.—Reduce to the first, and then employ the measures already pointed out as efficient in the reduction of the former.

IV. PARTIAL, OR SUB-LUXATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. DISLOCATION OF THE BICEPS TENDON.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IX. LUXATION AT THE ELBOW JOINT.

Anatomy of the joint.

Liability.

Direction of displacement.—Backwards and upwards of both bones ; lateral of both bones ; forwards of both bones ; forwards of the head of the radius ; backwards of the head of the radius ; imperfect luxation of the head of the radius ; upwards of the superior extremity of the ulna.

I. BACKWARDS AND UPWARDS OF BOTH BONES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

II. LATERAL DISPLACEMENT.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

III. FORWARD DISPLACEMENT.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IV. FORWARDS OF THE HEAD OF THE RADIUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. BACKWARDS OF THE HEAD OF THE RADIUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VI. IMPERFECT LUXATION OF THE HEAD OF THE RADIUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VII. LUXATION OF THE SUPERIOR EXTREMITY OF THE ULNA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

X. LUXATION OF THE WRIST.

Anatomy of the joint.

Liability.

Direction of Displacement.—Backwards, forwards, and laterally.

I. BACKWARDS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

II. FORWARDS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

III. LATERAL.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IV. LUXATION OF THE LOWER EXTREMITY OF THE ULNA.

Causes.

Varieties.—Backwards and forwards.

Symptoms of each.

Diagnosis.

Prognosis.

Dissection.

Treatment.

XI. LUXATION OF CARPAL BONES.

*Anatomy of joint.**Liability.**Direction of displacement.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

XII. LUXATION OF METACARPAL BONES.

*Anatomy of these joints.**Liability.*—The first is usually the only one displaced.*Direction of displacement.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

XIII. LUXATION OF PHALANGES.

*Anatomy of these joints.**Liability.*—All may be luxated, but usually the first of the thumb is most liable.*Direction of displacement.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*—Difficulties to be overcome are—1. Shape of the bone. 2. Binding of ligaments. 3. Interposition of anterior ligaments. (Vidal and Pailleux.) 4. Interposition of sesamoid bones. (Lawrie.) 5. Want of leverage. Manner of overcoming these difficulties explained.

XIV. LUXATION OF THE SACRUM.

*Anatomy of joint.**Liability.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

XV. LUXATION OF THE OSSA INNOMINATA.

*Liability.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

XVI. RELAXATION OF THE PELVIC SYMPHYSES.

*Liability.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

XVII. LUXATION OF THE FEMUR.

*Importance.**Anatomy of the joint.**Liability.*

Direction of displacement.—The head of the bone may be displaced upwards in three directions, and downwards in three directions, viz: upwards and backwards upon the dorsum illi; upwards and forwards upon the ossa pubis; directly upwards; downwards, and backwards in the upper ischiatic notch; downwards and forwards into the foramen ovale; directly downwards.

I. UPWARDS AND BACKWARDS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*—General indications.

a. Fix the pelvis.

b. Draw the head of the bone towards its cavity.

c. Make use of the different muscles to assist in the reduction.

d. Employ constitutional remedies to relax the muscles.

General methods.

a. Bands and pullies.

b. Apparatus.

II. UPWARDS AND FORWARDS ON THE OSSA PUBIS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.*

Treatment.—General indications are the same as in the first variety. The general methods are also the same, but we must vary the direction of our forces.

III. DIRECTLY UPWARDS. (VERY RARE.)

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.*

Treatment.—The same indications to be observed as above, but vary the direction of the forces to suit the case.

IV. BACKWARDS AND SLIGHTLY DOWNWARDS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.*

Treatment.—General indications the same as above, but the direction of the forces must be varied.

V. FORWARDS AND DOWNWARDS.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.*

Treatment.—General indications still the same, but the process must be varied.

VI. DIRECTLY DOWNWARDS. (VERY RARE.)

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.*

Treatment.—General indications still the same, but we must modify our forces to suit the case.

XVIII. LUXATION OF KNEE.

*Importance.**Anatomy of the joint.**Liability.*

Direction of displacement.—To render these luxations more clear to the student, it will be well to consider those of each constituent of the joint, and first of those of the

I. PATELLA.

Varieties.—1. Outwards; 2. Inwards; 3. On its axis; 4. Upwards; 5. Downwards.

*Causes of each.**Symptoms of each.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

II. LUXATION OF THE HEAD OF THE TIBIA.

Varieties.—1. Backwards; 2. Forwards; 3. Outwards; 4. Inwards;
5. Sub-luxation or twist.

Causes.

Symptoms of each.

Diagnosis.

Prognosis.

Dissection.

Treatment.

III. INTERNAL DERANGEMENT OF THE KNEE JOINT.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

IV. SUB-LUXATION FROM LENGTH OF LIGAMENTS.

Causes.—*Congenital or acquired.*

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. LUXATION OF THE HEAD OF THE FIBULA.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

XIX. LUXATIONS OF THE ANKLE JOINT.

Importance.

Anatomy of the joint.

Liability.

Direction of displacement.—Inwards; Outwards; Forwards; Backwards.

I. INWARDS.

Causes.

Complications.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

II. OUTWARDS.

- Causes.*
- Complications.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

III. FORWARDS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

IV. BACKWARDS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

XX. LUXATION OF THE TARSAL BONES.

I. ASTRAGALUS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

II. THE CUNEIFORM, ETC.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

XXI. LUXATION OF THE METATARSAL BONES.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

Eighth Head.

XXII. LUXATION OF THE PHALANGES.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

CONGENITAL LUXATION.

*Definition.**Varieties.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

DISEASES OF THE FIBROUS SYSTEM.

Some of the affections of this system have been included under the diseases of the joints; for example, Desmodia, and Desmectasis; others belong more particularly to the practice of medicine than to surgery, as rheumatism, &c. The diseases usually considered as strictly surgical are—

I. PERIOSTITIS.

*Definition.**Varieties.*—1. Acute. 2. Chronic.*Causes.*—1. Local. 2. Constitutional.

First, or local:

a. Contusions.

b. Punctures.

c. Incisions.

d. Extension of inflammation from diseased organs in the vicinity.

Second, or constitutional.

a. Syphilis.

b. Excessive use of mercury.

c. Scrofula.

d. Cold.

Symptoms.—1. Local. 2. Constitutional.*Diagnosis.*—May be confounded with ostitis, caries, necrosis, rheumatism or gout.*Prognosis.*—Varies in different cases. Usually the cure is tedious; it may nevertheless be considered a very curable disease.*Dissections.*—The post-mortem appearances depend on the intensity and duration of the attack.*Terminations.*—Resolution, suppuration, effusion of lymph; inflamma-

tion, caries or necrosis of the subjacent bone ; conversion of the membrane into cartilage or bone.

Treatment.—The remedies are divided into *general* and *local*. Both are modified by the circumstances of the case.

First, or general.

1. Blood-letting.
2. Active purgation.
3. Low diet.
4. Mercurials.
5. Preparations of iodine, especially the iodide of potassium.
6. Decoctions of the woods.

Second, or local.

1. Leeches.
2. Free incisions.
3. Poultices and fomentations.
4. Blisters.
5. Iodine, or mercurial frictions.
6. Wool and oil-silk dressing.

II. PARONYCHIA, OR WHITLOW.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.

Treatment.

III. TYROMA.

Definition.

Varieties.—Partial or general.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.

Treatment.

IV. CHONDROMA.

Definition.

Varieties.—Partial or general.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.

Treatment.

V. OSSIFICATION OF THE PERIOSTEUM.

Varieties.—Partial or general.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VI. MALIGNANT DISEASES OF THE PERIOSTEUM.

Like all other organized tissues, the periosteum is liable to be attacked by the various diseases termed *malignant*, the characteristics of which have already been or will be described under other heads.

VII. WOUNDS OF FASCIA OR APONEUROSIS.

Varieties of wounds.

Symptoms.

Diagnosis.

Prognosis.

Terminations.—Inflammation, sloughing, suppuration, adhesions, contractions.

Treatment.

VIII. CONTRACTION OF FASCIA.

The numerous fasciæ and aponeuroses in different parts of the body, are all liable to undergo a *chronic thickening and contraction*, from which results a variety of deformities, many of them very difficult to relieve, and others entirely incurable. Ghidella and Froriep were among the first to describe these affections with any thing like method or correctness, although the disease was long since spoken of by the ancients, as “*crispatura tendinum!*” Sir A. Cooper, Dupuytren, Goyraud, and most of the recent authorities in orthopedic surgery, have likewise carefully and correctly explained the nature of the defect, and also the most approved methods of treatment. We shall describe briefly the most important of the deformities resulting from this cause.

I. CONTRACTION OF THE FASCIA PALMARIS.

Anatomy of the fascia of the palm of the hand.

Deformity produced by the contraction of the fascia, or fibrous cords attached to its inferior margin.—(Dupuytren and Goyraud.)

Fingers usually involved.

Causes of the contraction.—1. Congenital. 2. Acquired: and, according to Dupuytren, the defect is occasionally *hereditary*.

Diagnosis.—May be confounded with retraction of the fingers dependent on other causes; as contraction of the flexor tendons, cicatrices, &c.

Prognosis.—By no means in every case favorable. It is, however, often susceptible of relief.

* *Effects on the adjacent muscles, tendons and ligaments.*

Treatment.—Three modes of treatment. 1. Mechanical extension. 2. Frictions. 3. Subcutaneous section, followed by mechanical extension. The merits of these methods discussed.

II. CONTRACTION OF THE FASCIA CUBITI.

Anatomy of the part.

Deformity produced by the contraction of the fascia.

Causes.—1. Congenital. 2. Acquired.

Diagnosis.—May be confounded with contraction of the tendons of the biceps and brachialis internus muscles, and inflammation of the joint.

Prognosis.

Effects on the other constituents of the articulation.

Treatment.—The same general methods are applicable here that are employed in the other fascial contractions.

III. CONTRACTION OF THE FASCIA PLANTARIS.

Anatomy of the sole of the foot.

Deformity produced by the contraction of the fascia.

Causes.—1. Congenital. 2. Acquired.

Diagnosis.—May be mistaken for common talipes equinus.

Prognosis.

Effects on the tarsal and metatarsal articulations.

Treatment.—The same general methods that are required in contraction of the other fascia.

IV. CONTRACTION OF THE FASCIA LATA AT THE KNEE.

Anatomy of the joint.

Deformity produced by the contraction of the fascia.

Causes.—1. Congenital. 2. Acquired.

Diagnosis.—May be confounded with contractions of the tendons and muscles, and also inflammation of the joint.

Prognosis.

Effects on the articulation.

Treatment.—The same general methods hold good here.

IV. DISEASES OF THE BURSÆ MUCOSÆ.

I. WOUNDS OF THE BURSÆ.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

II. INFLAMMATION OF THE BURSÆ.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

III. ABSCESS OF THE BURSAÆ.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

IV. HYDROPS BURSAÆ.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

V. CARTILAGINOUS FORMATIONS IN THE BURSAÆ.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VI. GANGLION.

Definition.—Encysted tumour formed in the course of a tendon or its fibrous sheath.

Symptoms.

Causes.

Pathology.

Joints most liable.

Diagnosis.

Prognosis.

Treatment.

1. Stimulating friction and blisters; 2. Compression; 3. Seton; 4. Puncture followed by compression; 5. Rupture of Cyst; 6. Acupuncture; 7. Extirpation.

VII. BUNYON.

Definition.—An inflammation with thickening of the bursa mucosa on the inside of the great toe.

Causes.

Symptoms.

Prognosis.

Diagnosis.—Dislocation from Gout and Rheumatism.

Treatment.—When *acutely* inflamed, leech, and apply cold or warm poultices, and elevate the foot; when *chronic* inflammation takes place, blister and use iodine locally, and avoid pressure on the foot; when *suppuration* takes place, let out the pus, and apply a poultice.

When the bursa becomes very troublesome, it may be dissected out. [See Brodie.]

VIII. HOUSEMAID'S KNEE.

*Definition.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

V. DISEASES OF THE TENDONS.

I. WOUNDS OF THE TENDONS.

*Varieties.**Causes.**Symptoms.**Diagnosis.**Prognosis.*

Mode of reparation.—Depends upon the nature of the wound. In wounds exposing the tendon to the air, the process differs essentially from that which takes place when the tendon is not exposed. The degree of separation of the divided extremities also modifies the process.—See Velpeau, Ammon, and Bouvier.)

Treatment.—1. Simple position and apparatus. 2. The Suture, aided by bandages and position. 3. Antiphlogistic system. The apparatus or dressing must be modified to suit each particular case.

II. INFLAMMATION OF TENDONS.

Varieties.—Simple, rheumatic, or gouty; acute, or chronic.

*Causes.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

III. OSSIFICATION OF TENDONS.

*Causes.**Persons most liable.**Symptoms.**Diagnosis.**Prognosis.**Treatment.*

IV. TUMOURS OF TENDONS.

See chapter on "Tumours."

VI. INJURIES AND DISEASES OF THE VOLUNTARY MUSCLES AND THEIR TENDONS.

I. WOUNDS AND RUPTURE OF MUSCLES.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Mode of reparation.—This process is modified by the exposure or non-exposure of the injured muscle to the action of the air.

Treatment.—1. Rest, proper position, and apparatus. 2. Suture, or straps and bandages. 3. Antiphlogistics.

II. MYOSITIS OR INFLAMMATION.

Varieties.—Simple, rheumatic, or gouty; acute or chronic.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.—Palsy, irregular spasm; suppuration, (Myositis purulenta;) softening, (Myositis emolliens;) hypertrophy; atrophy; hardening; and ossification.

Treatment.

III. SUPPURATION IN MUSCLE.

The symptoms indicative of suppuration in this tissue resemble those already described under the general head "Suppuration," and the treatment is precisely the same as that in proper cases of suppuration elsewhere. The most striking peculiarity of this action here, is the circumstance of the entire muscle often disappearing, as in *psaos abscess*.

IV. SOFTENING.

This condition of the muscle may result from *defective nutrition*, as stated by Laennec; and also from *inflammation*, as Bouillaud has clearly shown. The muscle becomes pale, flabby, friable, and easily torn. There is no remedy for the difficulty.

V. STEATOSIS, OR FATTY DEGENERATION.

This degeneration is exceedingly uncommon, but cases are reported by Vicq. d'Azyr and others, in which the muscles were reduced to all the physical properties of fat.

VI. OSSIFICATION.

This is seen in old persons, and also in certain forms of exostosis. It may exist as the result of inflammation.

VII. HYPERTROPHY

This condition of the voluntary muscles is rare, but it occasionally occurs from *inflammation* or *excessive nutrition*. It is also sometimes congenital.

VIII. ATROPHY.

This is a very important lesion of the muscles, and gives rise to many diseases. It presents itself under several forms. We have—

1. *Simple atrophy*.—The result of long disuse, palsy, or defective nutrition.

2. *Rigid atrophy*.—The muscle is here shortened, rigid, inextensible, and lighter color than natural. The diseases produced by this variety are club-foot, some forms of wry neck, contracted limbs, stiff jaw, &c. It generally results from spasmodic affections, or from the muscles being confined for some time to one position.

3. *Atrophy, with absorption of the muscular tissue*.—This is usually the result of exposure to cold for a length of time.

The affections resulting from *simple atrophy* may occasionally be relieved by *removing the cause* and resorting to measures calculated to *restore tone and vigor* to the muscles. The most common deformities produced by it are

I. PARALYSIS OF ONE LEG OR BOTH.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—1. Constitutional remedies.

a. Strychnia.

b. Cold bath.

c. General frictions.

d. Nutritious diet.

e. Exercise in the fresh air. To accomplish this indication we are generally obliged to use a go-cart.

2. Local measures.

a. Frictions.

b. Galvanism.

c. Acupuncture.

d. Mechanical support.

e. Operation of Stromeyer.

II. FASCIAL PALSY.

Causes.

Muscles involved.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—1. Constitutional remedies—the same as those recommended in the other case.

2. Local treatment.

a. Acupuncture.

b. Moxa over the mastoid process.

c. Galvanism.

d. Excision of a portion of the paralyzed cheek. Proposed by Dieffenbach.

e. Section of the antagonizing muscles. Also proposed by Dieffenbach.

III. ATROPHY OF THE GLUTEI MUSCLES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

To comprehend and to manage properly the deformities resulting from *rigid atrophy*, it will be necessary to consider each one separately. And first of

CLUB FOOT.

Definition.

Varieties.—1. Talipes varus, or inversion. 2. Talipes valgus, or eversion. 3. Talipes equinus. 4. Talipes calcaneus. 5. Talipes dorsalis or phalangeal.

Each of these *general divisions* may be subdivided into three groups, which I have termed degrees; for example, we have *first, second, and third* degrees of varus, &c.

Causes.—1. Congenital; 2. Acquired or accidental.

1st. *Or congenital.* Various theories entertained. The most rational is that now generally adopted, that unequal or irregular contraction of the muscles, by which their tendons and fascia are shortened, atrophied, and rendered more dense, is the proximate cause of the defect. In some cases, the extensors, in others the flexors are in fault, sometimes only one, sometimes several muscles are involved.—(Refer to some of the most ingenious theories on this subject.)

2d. *Or acquired.* Sprains, luxations, fractures, preternatural laxity of the ligaments, partial or complete paralysis of one set of muscles, their antagonists retaining their natural power and vigor, convulsions, habit of using certain muscles more than others, &c.

Foot most liable.—The right.

Sex most liable.—The male.

Variety most common.—1st, or varus.

Characteristics of each variety, and those of its various degrees.

Condition of legs and knees.

Dissection.—The appearances, of course, depend on the variety of the defect, its degree, cause, age, and the mode of life of the patient. Call attention to the bursæ, exostosis, ankylosis, and abrasions, often met with in cases of long standing.

Diagnosis.—Talipes equinus I have known mistaken for certain forms of contracted hip and knee.

Prognosis.—Depends on the *degree of contraction, the variety of the defect,*

the *condition of the bones*, the *age of the patient*, the *character of the cause*, the *complication of the case*, and the *disposition of the patient* to submit to our remedies.

Treatment.—1. Prophylactic. 2. Treatment after the defect is fully established. It is rarely possible for us to employ the first, or remove causes operating even after birth. Under the second head several indications present themselves.

These are, 1. The application of such mechanical measures as shall bring the shortened muscles, tendons and fascia to their proper position.

2. Where mechanical contrivances alone, and unassisted, fail to accomplish the first indication, we may next resort to the *knife, aided by mechanical measures*.

3. The third indication refers to the *retention* of the foot in its proper position after tendons, &c., have been elongated.

4. The fourth, to the application of such measures as shall give tone to the weakened muscles, and prevent the recurrence of spasms, or irregular contractions which would cause a relapse.

5. The fifth, to the *preparation* of the patient for treatment. Keeping those indications in view, which obtain in the treatment of all the deformities resulting from this cause, we shall next speak of the plan of treatment best suited to each variety of the defect, as it presents itself at *different ages*; but before so doing, it will be well to explain the character of certain operations, to which I must refer in the management of the most of these cases. These are

MYOTOMY, TENOTOMY, AND APONEUROTOMY.

History of these operations.

Their importance.

Their relative merits contrasted with mechanical treatment alone.

The manner in which muscles and tendons are united after these wounds.

The dangers of these operations.

The question of immediate separation of the divided organs discussed.

Manner in which the operation should be performed.

We are now prepared to take up the special treatment, and first of

CONGENITAL VARUS.

1. Congenital varus, 1st, 2d, or 3d degree at birth.
 - “ “ “ “ 2d or 4th year.
 - “ “ “ “ 6th, or any subsequent age.
2. Congenital valgus, 1st, 2d, or 3d degree at birth.
 - “ “ “ “ 2d, or 4th year.
 - “ “ “ “ 6th, or any subsequent age.
3. Talipes equinus, 1st, 2d, or 3d degree at birth.
 - “ “ “ “ 2d or 4th year.
 - “ “ “ “ 6th, or any subsequent age.

4. Talapes calcaneus, 1st, 2d, or 3d degree at birth.
“ “ “ “ 2d or 4th year.
“ “ “ “ 6th, or any subsequent age.
5. Talapes dorsalis, 1st, 2d, or 3d degree at birth.
“ “ “ “ 2d or 4th year.
“ “ “ “ 6th, or any subsequent age.

CONTRACTED KNEE.

Varieties.

Muscles and tendons involved in each.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.—May be confounded with the different varieties of ankylosis, dependent on other causes.

Prognosis.

Effects on the joint if neglected.

Treatment.—1. By mechanical means alone. 2. By section of the tendons, followed by the use of mechanical measures.

Condition of the joints after contraction is overcome, and the treatment required in this stage.

Dangers to be apprehended during the treatment of the case.

CONTRACTED THIGH.

Varieties.

Muscles and tendons involved.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.—Often confounded with coxalgia when the flexors are involved.

Prognosis.

Effects on the joint if neglected.

Treatment.—1. By mechanical means alone. 2. By myotomy, followed by mechanical measures.

Condition of the joint after contraction is overcome, and the treatment required at this time.

Dangers to be apprehended during the treatment of the case.

CONTRACTION OF THE FINGERS AND TOES.

Varieties.

Muscles and tendons involved in each.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.—May be mistaken for contraction of the fascia palmaris or plantaris, when the flexors are in fault.

Prognosis.—Depends on the cause and the degree of lesion sustained by the tendons.

Treatment.—Depends very much on the cause; and we may require mechanical means as well as the knife for the relief of the difficulty.

CONTRACTION OF THE WRIST.

Varieties.

Muscles and tendons in fault in each.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.

Prognosis.—Unfavorable generally.

Treatment.—The same general treatment applicable to the other cases of contraction will answer here.

CONTRACTION OF THE ELBOW JOINT.

Varieties.

Muscles and tendons in fault in each.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.

Prognosis.

Treatment.—The same general treatment is to be observed here as in the other forms of contraction.

CONTRACTION OF THE SHOULDER.

Varieties.

Muscles and tendons in fault in each.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.

Prognosis.

Treatment.—The same as above.

CONTRACTION OF THE LOWER JAW.

Varieties.

Muscles and tendons in fault.

Causes of contraction.—1. Congenital. 2. Acquired.

Diagnosis.—Not to be confounded with adhesions, contractions from burns, or cicatrices.

Prognosis.

Treatment.—In almost every case of this defect it is necessary to divide muscles before the different means usually employed can be used with any effect. (See the cases of Mott, Ferguson, Smythe and myself.)

TORTICOLLIS.

Synonymes.—Caput opstipum; wry neck.

Definition.—An involuntary and fixed inclination of the head towards one of the shoulders. It is sometimes intermittent.

Symptoms.

Causes.—1. Congenital. 2. Acquired.

First, or congenital.

a. Muscle or muscles on one side *too short*.

b. Paralysis of one set of muscles.

Second or acquired.

a. Hemiplegia.

b. Chronic rheumatism.

c. Fevers of long standing.

d. Chronic myositis.

e. Mechanical injuries.

f. Habit.

g. Palsy of extensors of the neck.

Muscles in fault.—Generally the sterno-cleido-mastoid, but the trapezius, platysma myoid, and, in short, the whole set of muscles on one side may be involved. It is supposed by some to be dependent occasionally on shortening of the *integuments* or *fascia* of the neck, but I have never met with an example.

Diagnosis.—May be confounded with *recent palsy* of the muscles, from blows upon the neck; with acute rheumatism; abscess in the neck; caries of the bones; tumours; old luxations; hydrocele of the neck, and curved spine.

Prognosis.—Depends on a variety of circumstances. State them.

Dissection.

Treatment.—Depends on the *cause*, *parts involved*, and the *duration* of the disease. Mechanical measures of various kinds, the knife, and constitutional treatment may all be required.

STRABISMUS.

Definition.

Muscles, tendons, and fascia in fault.

Varieties.—1. Convergent. 2. Divergent. 3. Upward squint. 4. Downward squint.

The first is most frequent, in consequence of the *internal rectus* being stronger than the *external*, from its insertion being nearer the cornea, and from the natural habit we have of looking *inwards* more than *outwards*.

Symptoms.

Degree.

Duration.—Occasional or permanent. It is also, in some cases, *voluntary*.

Eye generally attacked.—According to some, the *right*; according to others, the *left*. *Both* are often involved.

Mode of ascertaining which eye is diseased.

Effect on vision.

Causes.—1. Congenital. 2. Acquired. 3. Direct. 4. Indirect.

Diagnosis.

Prognosis.

Dissection.

Treatment.—Several indications. 1. Remove the cause. 2. Use mechanical means to correct the deformity. 3. When these fail resort to an operation.

History of this operation.

Cases to which it is applicable.

Mode of performing it.

Treatment after the operation.

Dangers of the operation.

Change in the muscular attachments.

Results of the operation.—1. Favorable. 2. Unfavorable.

First, or favorable.

a. Disappearance of deformity.

b. Improvement in vision.

Second, or unfavorable.

a. Operation fails to correct the deformity. Why?

b. The eye is everted.

c. The eye projects.

d. A relapse takes place.

Methods proposed to overcome these difficulties.

LEUCITAS.

Definition.

Muscles in fault.

Varieties.

Symptoms.

Causes.

Diagnosis.

Prognosis.

Dissection.

Treatment.

The *third* form of atrophy is exceedingly rare, but when it occurs, it will of course give rise to a loss of function in the part or organ to which the muscle is attached. The deformities to which it gives rise do not differ essentially from those occasioned by *simple atrophy*. (See Mayo.)

IX. SPASM OF THE MUSCLES.

Spasmodic affections of the muscles are exceedingly common, and referable, in most cases, to primary irritation of the nerves of the part; but the disease may originate in the muscle, and gradually extend to the nerves. It is highly important, in forming our diagnosis, to distinguish the true cause, as the treatment chiefly turns upon this point. The permanent defects, resulting from this condition of the muscles, most frequently met with, are certain kinds of stammer, twitching of the muscles of the face, scrivener's spasm, rigid atrophy, and paralysis.

I. STAMMERING.

Definition.

Varieties.—1. Functional. 2. Organic.

Causes of functional.—Sometimes inappreciable; spasm of muscles, bad habit from imitation.

Causes of organic.—The tongue may be too large, too long, tied, or badly shaped. The fauces and roof of the mouth may also, when deformed, occasion a stammer.

Diagnosis.

Prognosis.

Treatment.—Various methods have been introduced, but of course the character of the cause will modify the treatment. There are four plans chiefly in vogue:—1. Vocal gymnastics. 2. Speaking with some hard substance between the teeth. 3. Acupuncture. 4. An operation.

History of these operations.

Different modes of operating described.

Appreciations of these operations.

II. TWITCHING OF THE MUSCLES OF THE FACE.

Varieties.

Causes.

Diagnosis.

Prognosis.

Treatment.

III. SCRIVENER'S SPASM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

X. ENTOZOOA.

The muscles frequently become the habitations of parasitic animals, and especially of the *Cysticircus cellulosa*, and the *Trichina spiralis*, first described, I believe, by Mr. Owen, of London.

XI. MALIGNANT DISEASES.

The muscles, like all the other tissues, are liable to be attacked by the various affections to which the term *malignant* has been assigned.

VII. DISEASES OF THE ARTERIES.

I. WOUNDS.

Varieties.—Penetrating, non-penetrating, punctured, incised, contused, lacerated, &c.

Symptoms.—Depend on the nature of the wound, and the size of the vessel.

Prognosis.—Depends on character of the wound, size of the vessels, and the diathesis of the patient.

Diagnosis.—May be confounded with wounds of veins.

Results.—The hemorrhage may cause death, unless arrested by the surgeon, or by an effort of nature; the wound may close, and the circulation continue in the limb, as before; or the circulation may be so much impaired as to occasion gangrene; and finally, aneurisms of different kinds may be developed.

Mode of healing.—Varies with the kind of wound.

Treatment.—See incised wounds.

II. ARTERITIS.

Definition.

Comparatively rare.

Varieties.—1. Subacute. 2. Acute. 3. Chronic.

Causes.

Symptoms of each variety.

Diagnosis.

Prognosis.

Dissection.

Products.

Treatment.

III. DEGENERATION OF TISSUES.

The arteries undergo a variety of pathological changes termed "*degenerations*," the causes of which are often obscure, but usually may be referred to the pre-existence of inflammation. The most common of these degenerations are:—1. Cartilaginous or osseous deposits between the lining membrane and the proper tissue of the vessel. 2. Thickening of the lining membrane. 3. Ætheromatous deposits in different portions of the vessel. 4. Steatomatous deposits. 5. Ulceration. 6. Softening.

Diseases produced by these changes.—1. Dilatation; 2. Hypertrophy with dilatation; 3. Contractions; 4. Rupture; 5. Obliteration; 6. Aneurism.

DILATATION.

Parts of the vessel usually involved.

Vessels most liable to be affected.

Effect on the shape and size of the vessel.

Symptoms by which it may be recognized.

Diagnosis.

Prognosis.

Treatment.

HYPERTROPHY WITH DILATATION.

This condition is seen in the uterine arteries during utero-gestation, in aneurismal varix, and in aneurism by anastomosis or vascular nevi.

CONTRACTION.

A diminution in the capacity of an artery has been observed by Morgagni, Desault, Laennec, Mayo, Elliottson, Baillie, and others. The defect is usually met with in the larger vessels.

RUPTURE.

This is the result of some mechanical cause operating upon a vessel weakened by some of the different forms of degeneration. Its occurrence may result in the death of the individual, or the establishment of an aneurism.

OBLITERATION.

A variety of causes may produce obliteration, but inflammation may be considered the most common. The results of this condition of large artery, are *gangrene*, *paralysis*, and sometimes death.

IV. ANEURISM.

Definition.

Varieties.—1. Spontaneous. 2. Traumatic. 3. Internal. 4. External. 5. True. 6. False. 7. Mixed. 8. Circumscribed. 9. Diffused. 10. Dissecting. 11. Varicose. 12. Aneurismal varix. 13. Aneurism by Anastomosis.

Breschet's classification.—1. Sacciform. 2. Fusiform. 3. Cylindroid. 4. Varix like.

Number.—Varies in different individuals. Usually but one. May have several, as in the cases of Pelletan and Cloquet.

Causes.—1. Predisposing. 2. Accidental, or proximate.

First, or predisposing.

a. Disease of the coats of the vessel. (See degenerations.)

b. Sex. Male most liable.

c. Age. Old persons most liable.

d. Location of vessels. Vessels of the lower limb most liable.

e. Vocation. Laboring classes most liable.

f. Size of the artery. Large more frequently affected than the small.

Second, or accidental.

a. Some violent exertion.

b. Wounds.

c. Ulceration of the coats of vessel.

Symptoms.—1. Constitutional. 2. Local. Both classes modified by the location, variety, size, and duration of the tumour.

Diagnosis.—The diagnosis is not difficult in the early stages of the complaint. As the tumor becomes solid it is more uncertain. An aneurism has been confounded with an abscess, tumours of different kinds situated near large arteries, dilatation of arteries, and diseases of different organs.

Prognosis.—Influenced by circumstances. It is, under all circumstances, however, to be considered a most formidable disease—usually requiring an operation for its relief, although nature is occasionally competent to the task of “spontaneous cure.”

Progress of the disease.—Great diversity in this respect. Sometimes it runs its course rapidly; and again, years may elapse before a fatal result takes place.

Effects of an aneurism on surrounding structures.

State of the blood in the aneurismal sac.

Changes which take place in the sac as the disease advances.

Terminations of the disease.

a. Spontaneous cure.

b. Death from hemorrhage.

c. Death from exhaustion.

d. Death from direct influence of the tumour upon some vital organ, as the brain, &c.

Process by which spontaneous cure is accomplished.

a. Obliteration of the sac by concrete fibrine.

- b. Obliteration of both sac and artery by fibrine.
 c. Pressure on the trunk of the vessel by the tumor itself.
 d. Inflammation, suppuration, and sloughing of the sac, and a portion of the artery.
 e. Bursting of the sac, the effusion of blood under the adjacent tissues, and the subsequent coagulation of this blood, which, pressing upon the artery, causes its obliteration.

Treatment.—The indication in the treatment of every case of aneurism of the usual kind, is to cause an *obliteration of the artery involved*. To carry this indication into effect, *two general modes of management* have been introduced:—1. The first has for its object the *diminution of the force of circulation*, so that the blood may coagulate in the tumour, and the artery contract. 2. In the second we attempt a *complete arrestation* of the circulation through the part, by the *obliteration of the vessel by some mechanical measure or surgical operation*.

First, or, as it is called, the method of Valsalva.—Agents employed under this head—

General remedies.—1. Barely sufficient nourishment to support life. 2. Rest in the horizontal position. 3. Small quantity of fluid in the diet. 4. Digitalis and the antimonials. 5. Venesection.

Local remedies.—1. Leeches. 2. Astringents and refrigerants. 3 Ice. 4. Long seton.

Second method.—Agents employed under this head—1. Compression. 2. Ligature of the vessel or vessels. 3. Application of the actual cautery—(employed by Severinus, Monteggia, Sir E. Home, and others.) 4. Injecting the sac with some fluid which produces coagulation of the blood—(proposed by Wardrop.) 5. The introduction of needles, or a seton, into the sac—(Pravaz, Philips, &c.) 6. The use of needles and galvanism at the same time—(Keate and Faraday.)

COMPRESSION.

Mode of applying compression.—Two or three methods—1. That of *Vernet*, on the *capillary* side of the tumour. 2. That of *Guatanni* along the artery, *above* the tumour, and on the tumour itself. 3. General pressure over the whole limb. 4. *Bellingham's* method.

Agents employed.—Tourniquet, bandage and compress, starch bandages; plaster of Paris mould, compressor of Dupuytren, compressor of Sunfio, &c.

Modus operandi of compression.

Objections to its employment.

Appreciation of the method.

LIGATURE.

Not properly employed until the time of Hunter. Before this period the operations for the cure of aneurism were rude and dangerous. By some, the sac was opened, the contents turned out, and compresses or the actual cautery applied to arrest the hemorrhage. By others, the sac was emptied, and then an attempt made to tie the bleeding vessels. By others, Aetius,

Philogius, Guillemeau, &c., the artery was tied *above* and *behind* the tumour, the latter then opened, and the vessels tied. The dangers of these measures have induced surgeons to abandon them, and we now choose, when an operation is decided upon, between *three different methods of applying* a ligature. These are—

1. The operation of *Hunter*. The ligature is here placed on the *cardiac* side of the tumour, or *above* the sac.

2. The operation of *Brasdor*. The ligature is here applied on the *distal* side of the tumour, or between it and the capillaries.

3. The operation of *Wardrop*. The ligature is here applied to a *branch* of the diseased artery on the capillary side of the tumour.

HUNTER'S OPERATION.

Mode of performing it.

Instruments required.

Cautions to be observed in the application of the ligature.

Immediate effect upon the tumour when the ligature is properly placed.

Subsequent effect on the tumour.

Immediate effect on the limb.

Subsequent effect on the limb.

Time required for the establishment of anastomosing circulation.

Effect on the general system, and especially the brain.

Dressing the wound.

After treatment of the case.

BRASDOR'S OPERATION.

Mode of performing it.

Instruments required.

Cautions to be observed in the application of the ligature.

Immediate effect upon the tumour.

Subsequent effect.

Immediate effect on the limb.

Subsequent effect.

Time required for the establishment of the anastomosing circulation.

Effect on the general system.

Dressing the wound.

After treatment.

WARDROP'S OPERATION.

Mode of performing it.

Instruments required.

Cautions to be observed in the application of the ligature.

Immediate effect on the tumour.

Subsequent effect.

Immediate effect on the limb.

Time required for the establishment of the anastomosing circulation here.

Effects on the general system.

Dressing the wound.

After treatment.

Accidents which may follow the performance of either of these operations:

- a. Convulsions.
- b. Fever.
- c. Secondary hemorrhage.
- d. Increase in the size of the tumour.
- e. Rupture of the sac.
- f. Gangrene of the tumour.
- g. Gangrene of the limb.
- h. Chronic inflammation and subsequent ulceration of the artery or sac.
- i. Plethora.

Peculiar advantages of the different operations discussed.

CAUTERY—INJECTION—NEEDLES—GALVANISM AND ACUPUNCTURE.

These different modes of treatment have recently been introduced into general practice, and, although one or all may prove more or less useful as adjuvants to other remedies of more importance, it is hardly probable that any thing more than this will ever be claimed for them.

Appreciation of all the various methods of treatment for aneurism.

TRAUMATIC, OR FALSE ANEURISM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VARICOSE ANEURISM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

ANEURISMAL VARIX.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

ANEURISM BY ANASTOMOSIS.

Synonymes.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Progress.

Dissection.

Treatment.—1. Compression. 2. Ligature of main arterial trunks. 3. Encircling the tumour by incisions. 4. Seton. 5. Breaking up cells. 6. Puncture, followed by caustic probe. 7. Puncture, and injection with some stimulating liquid. 8. Vaccination. 9. Caustic Potash. 10. Nitric acid. 11. Tart. antim. 12. Actual cautery. 13. Incisions under the skin. 14. Acupuncture. 15. Darning. 16. Ligature of the whole mass. 17. Excision. 18. Tattooing.

OSSEOUS ANEURISM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. PARTICULAR ANEURISMS.

The symptoms and treatment of each one described.

VIII. DISEASES OF THE VEINS.

I. WOUNDS.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Results.

Mode of healing.

Treatment.

II. RUPTURE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

III. INFLAMMATION, OR PHLEBITIS,

Varieties.—1. Acute. 2. Chronic.

Causes.—1. Constitutional. 2. Local.

Symptoms.—Vary with intensity of the attack. They may be divided into the *constitutional* and *local*.

Diagnosis.

Prognosis.

Dissection.

Effects resulting from phlebitis.—Obliteration of the vein, visceral abscess, oedema, ulceration of the vessel, calcareous deposits, &c.

Treatment.—1. Constitutional. 2. Local.

IV. AIR IN VEINS.

Effect produced by the introduction of air into the veins.

The manner in which it gains admission.

The causes of convulsion and death in these cases.

Means of preventing its introduction while an operation is going on.

Treatment in the event of its introduction.

V. VARICOSE VEIN.

Nature.

Location.

Extent.—The dilation may be *uniform* or *unequal*, and involve a *portion* of, or the *entire vein*.

Causes.—Any thing that will prevent a free circulation of the blood through the vein.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Results.

Treatment.—1. Palliative. 2. Radical.

Agents employed as Palliatives.—1. Compression with rollers or straps, or both, or laced stockings. 2. Frictions with iodine ointment, or Davis's solution of iodine; repeated blisters. 3. Galvanism. 4. Puncture of the vein.

Agents employed with a view to a radical cure.—1. The ligature. 2. The needle and ligature, as used by Davat, Velpeau, and others. 3. Caustic paste which occasions a slough—(recommended by Cartwright, Mayo, &c.) 4. Transverse subcutaneous incisions, followed by compression—(Brodie.) 5. Excision, followed by compression. 6. Acupuncture. 7. Seton. 8. Subcutaneous ligature—(Ricord.) 9. Irregular compression with graduated compresses and a bandage. 10. Position, rest for several months.

Dangers of these measures.

Appreciation of the different methods.

VI. OSSIFICATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VII. PHLEBOLITES.

*Definition.**Veins in which they are usually found.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Chemical composition.**Treatment.*

VIII. MALIGNANT DISEASES.

The veins are frequently involved in the different malignant diseases which attack all organized tissues.

IX. DISEASES OF THE LYMPHATICS.

I. WOUNDS.

*Varieties.**Symptoms.**Diagnosis.**Prognosis.**Results.**Mode of healing.**Treatment.*

II. RUPTURE.

This lesion is stated to have occurred in a patient of Guiffort's, but the symptoms are too obscure to merit our attention. It was supposed by Morton to be one cause of consumption; by Ackerman, to exist in scrofula; by Hendy to exist in Barbadoes leg; by White it was considered the cause of phlegmasia dolens; by Assalani and others, it was reckoned the cause of dropsy, and Brombilla thought it the cause of white swelling.

III. VARICOSE DILATATION, OR CIRBUS.

A rare and obscure lesion, present usually in dropsy and some other complaints. As it is an *effect*, it can only be relieved by removing the cause on which it depends.

IV. OSSIFICATION.

Like the arteries and veins, these vessels are liable to calcareous deposits in their coats.

V. ANGEIOLEUCITIS, OR INFLAMMATION.

Varieties.—1. Acute. 2. Chronic.*Causes.*—1. Direct. 2. Indirect.*Age most liable.*—Puberty and old age.*Symptoms.*—1. Local. 2. General.*Diagnosis.*—May be confounded with *phlebitis*, *neuritis*, *neuralgia*, *erysipelas* and *phlegmon*.*Prognosis.*—It is to be considered generally a dangerous disease.

Progress and duration.—Variable.

Terminations.—Resolution, suppuration, induration, ulceration, sloughing, death.

Dissection.—Three classes of phenomena to study.

1. Those which take place in the vessels.
2. Those which take place in the interposed tissues.
3. Those which take place in the viscera of remote regions, and blood—

(Velpeau.)

Treatment.—1. Constitutional. 2. Local.

VI. INFLAMMATION OF LYMPHATIC GLANDS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.

Treatment.

VII. ENLARGEMENT AND INDURATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.

Treatment.

VIII. OSSIFICATION.

Usually the result of inflammation, and the glands most liable are those of the lungs.

IX. MALIGNANT DISEASES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Terminations.

Treatment.

X. CONSEQUENCES RESULTING FROM THE EXTIRPATION OF A LARGE NUMBER OF GLANDS.

X. DISEASES OF THE NERVES.

I. WOUNDS.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Mode of healing.

Treatment.

II. STRETCHING AND RUPTURE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

III. NEURITIS.

Varieties.—1. Acute. 2. Chronic.

Causes.—1. Constitutional. 2. Local.

Symptoms.—Depend upon the nature of the attack.

Diagnosis.

Prognosis.

Dissection.

Terminations.—Resolution, effusion of lymph, ulceration, hypertrophy, atrophy, hardening, softening.

Treatment.

IV. NEURALGIA.

Definition.

Varieties.

Causes.—1. Those which act upon the nerve itself. 2. Those which operate through the system at large.

Symptoms.

Parts most liable to be attacked.

Diagnosis.

Prognosis.

Pathology.

Treatment.—Indications—1. Remove the cause, whether *constitutional* or *local*. 2. Palliate the pain. 3. Divide the nerve. 4. Excise a portion of the nerve. 5. Acupuncture. 6 Electro-magnetism, &c. 7. Moxa, &c.

V. ANOMALOUS NERVOUS AFFECTIONS.

These vary in character ; and of course the treatment must be based upon the peculiarity of each.

VI. HYSTERICAL NEURALGIA.

Definition.

Persons most liable.

Parts most liable to be attacked.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Pathology.

Treatment.

VII. TUMOURS.

Varieties.—Solid, or encysted.

Location.—In the neurilema ; between the superficial fibres of a nerve, or they may implicate all the fasciculi at the part attacked ; and again, they may be developed upon the extremity of a divided nerve in the shape of a

little button. Lastly, they may occupy the large and deeply seated nerves or the superficial and cutaneous; when developed in the latter situation, the tumour is called "*painful subcutaneous tubercle.*"

Causes.—Blows upon the part, the application of a ligature, &c.

Symptoms.—Depend upon the location of the tumour. They belong, however, to the class of "nervous symptoms," general as well as local.

Diagnosis.

Prognosis.

Pathology.

Treatment.—1. Palliative. 2. Radical.

Palliative means—

a. Leeches.

b. Counter irritation.

c. Fomentations.

d. Anodynes.

Radical means—

a. Division of the nerve above the tumour.

b. Extirpation of the tumour.

c. When the tumour is a *cyst*, puncture followed by compression.

Condition of the limb after the removal of a portion of the nerve.

VIII. TETANUS.

Definition.

Varieties as to muscles affected.—1. Episthotonos. 2. Emprosthotonos. 3. Pleurosthotonos. 4. Trismus, or locked jaw.

Varieties as to cause and duration.—1. Traumatic. 2. Idiopathic. 3. Acute. 4. Chronic.

Causes.—1. Constitutional. 2. Local.

Symptoms.—Vary with the location as well as the intensity of the attack. General symptoms stated.

Diagnosis.

Prognosis.

Pathology.

Treatment.—1. General. 2. Local.

IX. PARALYSIS.

Definition.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Pathology.

Treatment.

X. OTHER ORGANIC LESIONS.

The nerves, like the other tissues, are liable to hypertrophy, atrophy, hardening, softening, ulceration, and malignant diseases of various kinds. But these lesions are rarely recognized until after death, or they give rise to the phenomena already referred to as characteristic of diseases to which specific names have been assigned.

XI. DISEASES OF THE CELLULAR TISSUE.

I. SIMPLE INFLAMMATION.

See "Inflammation."

II. PHLEGMON, OR CIRCUMSCRIBED INFLAMMATION.

See "Phlegmon."

III. ERYSIPELATOUS INFLAMMATION.

See "Erysipelas."

IV. CARBUNCLE.

See "Charbon or Carbuncle."

V. ABSCESS.

See "Abscess."

VI. HEMORRHAGE.

Causes.—Mechanical injuries, and diseases of a peculiar character, as purpura, scorbutus, typhus, &c.

Character of the blood.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

VII. SEROUS EFFUSION.

Synonymes.—Edema, anasarca, aqua intercus, leucophlegmasia, &c.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Different kinds of serum effused.

Treatment.

VIII. INDURATION.

Synonymes.—Scleroma, skin-bind.

Persons most liable.—Children.

Causes.

Symptoms.

Duration.

Prognosis.

Diagnosis.

Character of the tissue.

Treatment.

IX. EMPHYSEMA.

Synonymes.—Pneumosis spontanea et traumatica.

Causes.—Mechanical injuries, and sometimes it occurs spontaneously.

Parts of the body most liable to this collection.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

X. TUMOURS OF DIFFERENT KINDS.

See "Tumours."

XI. CONDENSATION INTO CYSTS.

Causes.

Indications that they have formed.

Uses of these cysts.

XII. DISEASES OF THE ADIPOSE TISSUE.

I. INFLAMMATION.

See "Inflammation."

II. WOUNDS.

See "Wounds."

III. HEMORRHAGE.

Causes.

Character of the blood.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

IV. HYPERTROPHY, OR POLYSARCIA.

Varieties.—1. Partial. 2. Complete.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Dissection.

Treatment.

V. ATROPHY.

Varieties.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

VI. TUMOURS OF VARIOUS KINDS.

See "Tumours."

Diseases of the *Skin, Hair, Nails, and Teeth* cannot be embraced in a course so rigidly restricted to the *most important* points in Surgery; they will, however, be found in my work on Surgery.

THIRD DIVISION, OR DISEASES OF REGIONS AND ORGANS.

I. INJURIES OF THE HEAD.

I. WOUNDS.

Importance of these injuries.

Classification.

- a. Wounds involving the scalp alone.
- b. Wounds involving the scalp and bones.
- c. Wounds involving the brain and its membranes, as well as the scalp and bones.

a. SUPERFICIAL WOUNDS.

I. INCISED WOUNDS.

Causes.

Symptoms.

Prognosis.

Results.

Treatment.

II. LACERATED WOUNDS.

Varieties.

Causes.

Symptoms.

Prognosis.

Results.

Treatment.

III. CONTUSED WOUNDS.

Causes.

Symptoms.

Prognosis.

Results.

Treatment.

IV. PRODUCTS OF CONTUSED WOUNDS.

a. BLOODY TUMOUR.

b. SUPPURATION BETWEEN SCALP OR PERICRANIUM AND BONE.

c. SEPARATION OF DURA MATER.

V. PUNCTURED WOUNDS.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Results.

Treatment.

VI. WOUNDS OF TEMPORAL ARTERY.

Causes.
Symptoms.
Prognosis.
Diagnosis.
Results.
Treatment.

b. WOUNDS INVOLVING THE SCALP AND BONES.

I. INCISED, LACERATED, CONTUSED, OR PUNCTURED WOUNDS.

Causes.
Symptoms.
Prognosis.
Diagnosis.
Results.
Treatment.

II. PENETRATING WOUNDS.

Causes.
Symptoms.
Prognosis.
Diagnosis.
Results.
Treatment.

III. GUN-SHOT WOUNDS.

Causes.
Symptoms.
Prognosis.
Diagnosis.
Results.
Treatment.

c. WOUNDS INVOLVING THE BRAIN AND ITS MEMBRANES,
ETC.

Varieties.
Causes.
Symptoms.
Prognosis.
Diagnosis.
Results.
Treatment.

ENCEPHALOCELE AN OCCASIONAL PRODUCT OF THESE WOUNDS.

Definition.
Symptoms.
Prognosis.
Diagnosis.
Results.
Treatment.

II. DISEASES OF THE SCALP, &c. &c

I. ERYSIPELAS.

See "Erysipelas."

II. ANTHRAX.

See "Anthrax."

III. TRAUMATIC NEURALGIA.

See "Neuralgia."

IV. PERICRANITIS.

V. THICKENING OF PERICRANIUM.

VI. TUMOURS OF THE SCALP.

See "Tumours."

III. FRACTURES OF THE BONES OF THE HEAD.

Causes.

Varieties.

Parts of the cranium most liable to fracture.

Age most liable.

Symptoms.—Depend on location of fracture, &c.

Diagnosis.

Mode of union.

Treatment.

IV. CONCUSSION.

Definition.

Extent or degree.

Causes.

Symptoms.—Three groups—1. Stunning. 2. Loss of consciousness, &c. 3. Convulsions, &c.

Prognosis.

Diagnosis.

Anatomical examination.

Results.

Treatment.

V. COMPRESSION OF THE BRAIN.

Definition.

Illustration of the influence of pressure upon the brain.

Causes.—Depressed bone, effused blood, collection of pus, &c.

Symptoms.—Depend on the nature of the cause.

Prognosis.—Depends on—1. Extent of surface involved. 2. Location of the compressing body. 3. Location with reference to *depth*. 4. Nature of compressing body. 5. Suddenness with which compression is applied.

Diagnosis.

Manner of ascertaining the seat of the injury.

Manner of ascertaining the nature of the compressing body.

Dissection.

Results.

Treatment.—Varies with cause—

- a. When the bone is depressed.
- b. When effused blood is the cause.
- c. When pus constitutes the compressing agent.

TREPHINING.

History of the operation.

Diseases of the head for which it is employed.

Dangers of the operation.

Parts to be avoided in applying the instrument.

The operation itself described.

Dressing.

After treatment.

Manner in which the opening is closed.

PARACENTESIS.

INFLAMMATION OF BRAIN.—(See “Effusion.”)

II. INJURIES AND DISEASES OF THE SPINE.

Classification.

- a. Injuries and diseases of the spinal column.
- b. Injuries and diseases of the spinal marrow and its nerves. 1. Concentric diseases of the true spinal marrow. 2. Eccentric diseases or those attacking the incident or excitor nerves. 3. Diseases of the reflex, or motor nerves. 4. Spinal irritation.

a. INJURIES AND DISEASES OF THE SPINAL COLUMN ITSELF.

I. FRACTURES.

Liability.

Causes.—External violence directly or indirectly applied.

Usual seat of fracture.—Spines, bony ridges, and body.

Division.—1. Those occurring above the fourth cervical. 2. Those occurring below this point.

Symptoms.—Depend upon the location of the fracture and its extent.

Prognosis.—Depends on location and extent of fracture.

Diagnosis.—May be confounded with *luxation, concussion of spine, compression from effused blood, inflammation of marrow or its membranes.*

Dissection.

Treatment.

II. LUXATION.

Liability.

Causes.—External violence.

Vertebrae most liable.—The cervical, especially the second.

Division.—1. Partial. 2. Complete.

Symptoms.—Depend on seat of injury and its extent.

Prognosis.—Depends on the seat and extent of injury.

Diagnosis.

Dissection.

Treatment.

III. SPONTANEOUS LUXATION OR THE FIRST CERVICAL.

Definition.

Causes.

Symptoms.—In 1st, 2d, and 3d stages.

Progress.

Prognosis.

Diagnosis.

Dissection.

Treatment.

IV. CURVATURE.

Definition.

Varieties.—1. Lateral, or scoliosis. 2. Posterior, or gibbus or cyphosis.
3. Anterior, or lordosis.

Causes.—Predisposing and immediate.

Prophylaxis.

Symptoms.—Depend on the variety of the defect.

Prognosis.—Depends on the age of the individual, the duration, cause, degree, and complication of the case.

Diagnosis.—May be confounded with *caries*, *partial paralysis*, *natural inequality in size* of the two halves of the body, &c.

Pathology.

Effects on the spinal column, its contents, and the health of the individual.

Question of marriage.

Treatment.

V. SHORTENED SPINE.

Definition.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

VI. CARIES OF SPINE.

Liability.—Children most liable; may occur in adults.

Causes.—1. Constitutional. 2. Local.

Symptoms.—Vary in the 1st, 2d, and 3d stages; and also depend on the age of the individual.

Prognosis.

Diagnosis.

Effects upon the viscera of the thorax and abdomen, and general health of the patient.

Dissection.

Treatment.

VII. ABSCESS.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Dissection.

Treatment.

VIII. EXOSTOSIS.

Effects of these tumours on the functions of the spine, and those of the adjacent viscera.

IX. ANCHYLOSIS.

Effects of this condition of the joints upon the functions of the column.

X. SPINA BIFIDA.

Definition.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

b. INJURIES AND DISEASES OF THE SPINAL MARROW, ITS MEMBRANES AND NERVES.

I. CONCENTRIC DISEASES.

I. WOUNDS.

Varieties.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

II. CONCUSSION.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

III. COMPRESSION.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

IV. CONGESTION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Results, or products.—Convulsions, epilepsy, paralysis agitans, either general or partial, tremor mercurialis.

Treatment.

VI. INFLAMMATION OF THE MEMBRANES, OR SPINAL MENINGITIS.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Dissection.

Treatment.

II. ECCENTRIC DISEASES, OR THOSE OF THE EXCITOR NERVES.

These are certain forms of epilepsy, puerperal convulsions, tetanus, hydrophobia, hysteria, chorea, stammering, asthma, vomiting, tenesmus, strangury, and abortion. Most of these affections are treated of under other heads.

III. DISEASES OF THE REFLEX OR MOTOR NERVES.

Spasmodic strabismus, spasmodic tic, spasmodic torticollis, spasm of the respiratory nerves—already referred to.

IV. SPINAL IRRITATION.

Definition.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Dissection.

Treatment.



III. INJURIES AND DISEASES OF THE EYE.

I. INJURIES, &c., OF THE EYELIDS.

WOUNDS.

Varieties.
Symptoms.
Prognosis.
Results.
Treatment.

INFLAMMATION OF THE LIDS.

Texture usually involved.
Causes.
Varieties.
Symptoms.
Prognosis.
Results.
Treatment.

CEDEMA.

Causes.
Symptoms.
Prognosis.
Dissection.

OPHTHALMIA TARSI.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

PSOROPHTHALMIA.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

HORDEOLUM.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

TYLOSIS.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

MADAROSIS.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Treatment.*

TRICHIASIS.

- Definition.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*

DISTICHIASIS.

- Definition.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*

PTOSIS.

- Definition.*
- Causes.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

ECTROPIUM.

- Definition.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*

ENTROPIUM.

- Definition.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*

ANCHYLOBLEPHARON AND SYMBLEPHARON.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

EPICANTHUS.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

TUMOURS.

Varieties.—*Nævi materni*, encysted, half-encysted, tarsal tumours, chalazion or grandio, milium, and verucae.

Causes of each.

Symptoms of each.

Diagnosis.

Prognosis.

Treatment.

MALIGNANT DISEASES.

The lids, like all other portions of the body, are sometimes involved in malignant diseases, by which they are partially or entirely destroyed. These cases are generally troublesome, and often require an extensive operation for their relief. (See Blepharoplastic operations.)

II. INJURIES AND DISEASES OF THE CONJUNCTIVA.

FOREIGN BODIES LODGED IN THE EYE.

Various kinds.

Symptoms.

Mode of examining the lids.

Diagnosis.

Prognosis.

Treatment.

WOUNDS OF THE CONJUNCTIVA.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SIMPLE INFLAMMATION OF CONJUNCTIVA.

Causes.—1. Constitutional. 2. Local.

Symptoms.

Prognosis.

Diagnosis.

Effects of products.

Treatment.—1. General. 2. Local.

CATARRHAL OPHTHALMIA.

Definition.

Synonymes.—Conjunctivitis catarrhalis, conjunctivitis puromucosa catarrhalis, ophthalmia purulenta metior, cold blight, &c.

Causes.—Cold in some shape, often accompanying influenza, and is occasionally epidemic.

Symptoms.

Diagnosis.

Prognosis.

Seat of the affection.—Seldom involves any other tissue than the conjunctiva.

Terminations.

Treatment.

PURULENT OPHTHALMIA.

Definition.

Varieties.—That of newly-born children, and that attacking adults. Acute and chronic.

Symptoms.

Diagnosis.

Prognosis.

Terminations or products.—1. Sloughing of cornea. 2. Ulceration. 3. Opacity of cornea. 4. Bursting of cornea. 5. Adhesion of iris. 6. Detachment of conjunctiva. 7. Staphyloma. 8. Ectropium, or Entropium.

Treatment.

GONORRHOEAL OPHTHALMIA.

Definition.

Varieties.—Acute, chronic, and that involving both the conjunctiva and sclerotic coat.

Causes.—Is it contagious?

Symptoms.—In each variety.

Diagnosis.

Prognosis.

Effects.

Treatment.

ERYSIPELATOUS OPHTHALMIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PUSTULAR OPHTHALMIA.

Definition.

Causes.

Age most liable.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SCROFULOUS OR STRUMOUS OPHTHALMIA.

Definition.

Causes.—1. Predisposing. 2. Exciting.

Symptoms.

Diagnosis.

Prognosis.

Results.

Treatment.

VARIOLOUS OPHTHALMIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

MORBILLIOUS AND SCARLATINOUS OPHTHALMIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ULCERS OF THE CONJUNCTIVA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

GRANULATED CONJUNCTIVA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HYPERTROPHY OF CONJUNCTIVA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Effect on lids.

Treatment.

PTERYGIUM.

Definition.

Varieties.—1. Tenue 2. Crassum. 3. Malignant. 4. Single. 5. Pannus.

Location.—Usually the inner canthus.

Age most liable.—Adult.

Causes.—Often obscure.

Symptoms and growth.

Diagnosis.

Prognosis.

Pathology.

Treatment.

XEROMA, OR DRY CONJUNCTIVA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

POLYPI, WARTS, AND OTHER EXCRESCENCES OF THE CONJUNCTIVA.

Characteristics of these tumours.

Causes.

Diagnosis.

Prognosis.

Treatment.

III. INJURIES AND DISEASES OF THE CORNEA.

WOUNDS.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Effects.

Treatment.

FOREIGN BODIES IN THE CORNEA.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Effects.

Treatment.

INFLAMMATION OF THE CORNEA.

Varieties.—1. Acute. 2. Chronic. 3. Partial. 4. Complete. 5. Scrofulous.

Causes.—1. Constitutional. 2. Local.

Symptoms.

Diagnosis.

Prognosis.

Effects.

Treatment.

SUPPURATION OF THE CORNEA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Effects.

Treatment.

ULCERS OF THE CORNEA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Effects.

Complications.—Hernia corneæ, fistula corneæ, &c.

Treatment.

OPACITY OF THE CORNEA.

Varieties.—1. Arcus senilis. 2. Nebula. 3. Albugo, or leucoma. 4. Macula. 5. Congenital.

Causes.

Symptoms.—In each variety.

Diagnosis.

Prognosis.

Effect on vision.

Treatment.—1. General remedies. 2. Local remedies. 3. Cunier's operation. 4. Bigger's operation.

STAPHYLOMA.

Definition.

Extent.—1. Partial. 2. Complete.

Shape.—Varies. Hence we have the staphyloma hemisphericum, globosum, conicum, racemosum, &c.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Structure.

Treatment.

CONICAL CORNEA.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

IV. INJURIES AND DISEASES OF THE SCLEROTICA.

WOUNDS.

- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Effects.*
- Treatment.*

SCLEROTITIS, OR INFLAMMATION OF THE SCLEROTICA.

- Varieties.*
- Causes.*
- Diagnosis.*
- Prognosis.*
- Results.*
- Treatment.*

STAPHYLOMA SCLEROTICÆ.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CYSTS AND TUMOURS OF THE SCLEROTICA.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

V. INJURIES AND DISEASES OF THE AQUEOUS MEMBRANE AND CHAMBERS.

FOREIGN BODIES LODGED IN THE ANTERIOR CHAMBER.

- Nature of these bodies.*
- Manner of introduction.*
- Symptoms produced by their presence.*
- Prognosis.*
- Treatment.*

HÆMOPHTHALMUS.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Effect.*
- Treatment.*

AQUO-CAPSULITIS.

- Definition.*
- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Results.*
- Treatment.*

HYPOPYON.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Results.*
- Treatment.*

DROPSY OF THE ANTERIOR CHAMBER.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Results.*
- Treatment.*

VI. INJURIES AND DISEASES OF THE IRIS.

IRIDEREMIA.

- Definition.*
- Causes.*
- Appearance of the eye.*
- Effect on vision.*
- Prognosis.*
- Treatment.*

COLOBOMA IRIDIS.

- Definition.*
- Causes.*
- Appearance of the eye.*
- Effect on vision.*
- Prognosis.*
- Treatment.*

CHANGE OF COLOR IN THE IRIS.

Causes.

Appearance of the eye.

Effect on vision.

Prognosis.

Treatment.

PROCIDENTIA, OR STAPHYLOMA IRIDIS.

Definition.

Causes.

Symptoms.

Effect on vision.

Prognosis.

Treatment.

SYNECHIA.

Definition.

Varieties.—Anterior and posterior.

Causes.

Symptoms.

Prognosis.

Treatment.

FUNGOUS EXCRESCENCES AND TUMOURS OF THE IRIS.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

MYOSIS.

Definition.

Causes.

Symptoms.

Effect on vision.

Prognosis.

Treatment.

MYDRIASIS.

Definition.

Causes.

Symptoms.

Effect on vision.

Prognosis.

Treatment.

TREMULOUS IRIS.

Definition.

Causes.

Symptoms.

Effect on vision.

Prognosis.

Treatment.

IRITIS.

Definition.

Varieties.—1. Acute. 2. Chronic. 3. Idiopathic. 4. Sympathetic, which includes the syphilitic, arthritic, &c.

Causes.—1st, or constitutional, as syphilis, gout, rheumatism, scrofula, cold, wet, &c.

2d, or local.—Direct injuries, over-exertion of the eye, &c.

Age most liable.—Adult and old age. Rarely occurs before puberty.

Symptoms.—1. Constitutional. 2. Local. These are of course modified by the extent, duration, and intensity of the inflammation.

Effects of this inflammation.—1. Effusion of coagulable lymph. 2. Change in the color of the iris. 3. Displacement of the iris. 4. Hypopion. 5. Effusion of blood in the chambers. 6. Adhesions between the iris and cornea, or capsule of the lens. 7. Loss of motion in the iris. 8. Closure of the pupil. 9. Atrophy of the globe. 10. Opacity and thinning of the cornea. 11. Partial or entire loss of vision.

Diagnosis.

Prognosis.—Depends on circumstances; for the most part it is unfavorable.

Treatment.—Three indications—1. Arrest the inflammation. 2. Prevent the further effusion of lymph, and promote the absorption of that already secreted. 3. Prevent the contraction and obliteration of the pupil. Remedies to be employed for the accomplishment of these indications.

OPERATIONS FOR ARTIFICIAL PUPIL.

Objects of these operations.

States of the eye requiring the operation.

Proper condition of the eye for an operation.

Prognosis.

Position of the artificial pupil.

Should we operate when one eye is sound?

Should we operate on BOTH when both eyes are diseased?

Preparation of the patient for an operation.

Various operations described.—Three principal methods at present in vogue. 1. Incision. 2. Excision. 3. Separation.

Relative merits of each.

Formation of an artificial pupil in the sclerotica.

VII. DISEASES OF THE CHOROID COAT.

CHOROIDITIS.

Definition.

Varieties.—Acute and chronic.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

DEFICIENCY OF PIGMENT.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VIII. DISEASES OF THE RETINA.

RETINITIS.

Definition.

Varieties.—Acute and chronic.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

AMAUROSIS.

Definition.

Synonymes.—Gutta serena, suffusion.

Varieties.—1. Idiopathic. 2. Sympathetic. 3. Symptomatic. 4. Incipient, or recent. 5. Inveterate, or confirmed. 6. Partial. 7. Complete. 8. Organic. 9. Functional. 10. Continued. 11. Intermittent. 12. Periodical. 13. Local, or nervous. 14. Complicated.

Causes.—Several classes.

1. Those operating immediately on the nervous apparatus of the eye.
2. Those operating indirectly through the medium of some other organ, or by sympathy.
3. Those operating through the medium of the sensorium.
4. Congenital causes.

Symptoms.—Depend on the stage at which we examine the case.

Diagnosis.—May be confounded with cataract, glaucoma, muscæ, &c. Refer to the catoptric examination.

Prognosis.—Depends on the *cause*, *duration*, and *degree* of the attack. Influence on the sound eye when but one is affected.

Pathology.

Treatment.—Modified to suit the peculiarities of the case.

WEAKNESS OF SIGHT.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Pathology.

Treatment.

MUSCÆ VOLITANTES.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Pathology.
- Treatment.

HEMERALOPIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Pathology.
- Treatment.

NYCTALOPIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Pathology.
- Treatment.

HEMIOPIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Pathology.
- Treatment.

NEAR-SIGHT.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Pathology.
- Treatment.

FAR-SIGHT.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Pathology.
- Treatment.

PHOTOPSIA.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Pathology.
Treatment.

CHRUPSIA, OR COLORED VISION.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Pathology.
Treatment.

IX. DISEASES OF THE LENS AND CAPSULE.

CATARACT.

Definition.—Partial or complete opacity of the crystalline lens, of its capsule, of both conjointly, or of the liquor Morgagni.

Varieties.—Lenticular, capsular, capsulo-lenticular, and Morgagnian; true and false; radiated and aborescent; hard, soft, and fluid, and cataracts of various colors; congenital and acquired.

Age most liable.

Causes.

Symptoms.—Impaired vision, opacity in or behind the pupil, &c. &c.

Diagnosis.—May be confounded with amaurosis, glaucoma, weakened sight, deposits of lymph, &c. Use the catoptric test to ascertain the true character of the case.

Prognosis.—Depends on the complication of the case, its duration, &c.

Progress of the defect.

Question of operating when but one eye is affected.

Treatment.—Nothing short of an operation will cure the complaint. Several operations have been devised, viz: 1. Extraction. 2. Depression, or couching. 3. Reclination. 4. Solution or absorption. (Anterior and posterior operation.)

Appreciation of these different operations.

Description of each, and the instruments required for its performance.

Preparation of the patient.

Season most favorable for operating.

After treatment.

Condition of the eye when the operation succeeds.

Cataract glasses.

GLAUCOMA.

Although this affection, strictly speaking, cannot be considered an affection of the lens in every case, yet as glaucoma is often confounded with cataract, and the lens is often involved, it may be as well to speak of it under this head.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

Pathology.

X. DISEASES OF THE GLOBE OF THE EYE.

INFLAMMATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HYDROPTHALMIA.

Definition.

Varieties.—1. Dropsy of the anterior and posterior chambers. 2. Dropsy of the vitreous humour. 3. General dropsy of the eye-ball.

Causes.

Symptoms in each form.

Diagnosis.

Prognosis.

Treatment.

ATROPHY OF THE BALL.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

COLLAPSE FROM SUPPURATION.

Character of the defect.

Mode of relieving the deformity.

EXOPHTHALMIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

XI. AFFECTIONS OF THE LACHRYMAL ORGANS.

INFLAMMATION OF THE LACHRYMAL GLANDS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ENLARGEMENT AND INDURATION OF THE LACHRYMAL GLAND.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

EPIPHORA, OR EXCESSIVE SECRETION OF THE TEARS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

STILLICIDIUM LACHRYMARUM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

XII. DISEASES OF THE CARUNCULA LACHRYMALIS.

ENCANTHIS.

Definition.

Varieties.—Innocent and malignant.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

TUMOURS OF VARIOUS KINDS.

XIII. DISEASES OF THE LACHRYMAL SAC AND DUCT.

INFLAMMATION.

Causes.

Varieties.—Acute and chronic.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABCESS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FISTULA LACHRYMALIS.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

PERMANENT OBSTRUCTION OF THE NASAL DUCT.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CONGENITAL DEFICIENCY OF THE NASAL DUCT.

Operation for its relief—(see Berard.)

XIV. MALIGNANT DISEASES OF THE EYE.

FUNGOUS EXCRESCENCES.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CARCINOMA OF THE EYE.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FUNGOUS HEMATODES OF THE EYE.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

MELANOSIS OF THE EYE.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

XV. EXTIRPATION OF THE EYE.

Mode of performing the operation.

XVI. INTRODUCTION OF AN ARTIFICIAL EYE.

Preparation of the eye.

Mode of placing it.

XVII. ANALOGOUS DEGENERATIONS OF THE EYE.

OSSIFICATIONS AND CALCULOUS CONCRETIONS.

XVIII. ENTOZOOA IN THE EYES.

Kinds usually met with.

Symptoms produced by their presence.

Effect upon the eyes.

Treatment.

XIX. DISEASES OF THE ORBIT.

WOUNDS.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FRACTURES OF THE BONES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FOREIGN BODIES LODGED IN THE ORBIT.

Symptoms.

Prognosis.

Treatment.

INFLAMMATION OF THE CELLULAR TEXTURE OF THE ORBIT.

Causes.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Results.

Treatment.

TUMOURS IN THE ORBIT.

Various kinds.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

IV. DISEASES OF THE EAR.

Anatomy of the Ear.—Divided into external, middle, and internal ear. The external ear consists of the auricle, and the meatus auditorius externus. The middle ear consists of the tympanum and its appendages, namely, the membrana tympani; the four ossicula auditus with their ligaments and muscles; the eustachian tube; and the mastoid cells.

The internal ear, or labyrinth, as it is termed, from its complexity of organization, is divided into bony and membranous labyrinth—the bony is subdivided into vestibule, three semi-circular canals, and the cochlea—the membranous labyrinth is found within the semi-circular canals and the vestibule, and contains the thin serous fluid called liquor cotunnii.

MALFORMATIONS OF THE EAR.

MALFORMATIONS OF THE AURICLE.

Cases most frequently met with.—1. Deficiency of the helix, and sometimes its division from the lobus. 2. An entire absence of the lobus—its division by a slit into an anterior and posterior portion—or its attachment wholly or partially to the integuments of the side of the head. 3. The tragus and anti-tragus are sometimes united, or inverted so as to partially close the opening of the meatus. 4. The total absence of the auricle. 5. An enormous enlargement of the auricle.

Causes.—1. Congenital. 2. Acquired, from wounds, bites, ulceration, sloughing—an increase in size is often the result of manipulation, or of the dress stretching the part.

Effect upon sense of hearing.

Treatment.—By artificial ear, by removal of overlapping portion, by dilatation.

MALFORMATIONS OF MEATUS AUDITORIUS EXTERNUS.

Most frequent varieties.—1. A very narrow canal. 2. An unusual shortness of canal. 3. A total absence of canal. 4. A closure of the canal at birth by a slimy caseous matter. 5. A closure of the orifice by the integument stretching across it and being attached to its margin; or by a membrane in any part of the canal; by a contraction in the cartilage, or by undue ossification of the bony part of the tube.

Causes.—Mostly congenital—sometimes acquired.

Effect upon hearing.

Examination of meatus externus.

Prognosis.—Modified by cause.

Treatment.—Varies with the case.

MALFORMATIONS OF THE MIDDLE EAR.

Importance.—Most of them are attended with deafness, and the cause is generally not to be removed.

Most frequent variations.—1. The cavity has been found much smaller than usual. 2. The cavity has been inordinately large. 3. The outer wall has been ossified—in fact a bony plate has occupied the place of the membrana tympani. 4. The ossiculæ auditus are often varied in their conformation, thus one or more of them may be too small or too large or deficient in ossification, or ossified together, or altogether wanting. Supernumerary bones have also been found. 5. The tympanum has been found filled with a soft white matter resembling inspissated albumen; also with a serofulous deposit. 6. The eustachian tube may be wholly or partially obliterated.

Causes.—1. Constitutional. 2. Acquired.

Diagnosis.—An examination will teach the condition of the membrana tympani. Catheterizing and injection of air will teach the condition of the eustachian tube. Use of otoscope.

Prognosis.—Only favorable in partial obliteration of the eustachian tube.

Treatment.—Varies with the kind and cause.

MALFORMATIONS OF THE INTERNAL EAR.

Various malformations of the labyrinth have been noticed—it has been entirely wanting—it has been deficient in ossification—change in quantity and consistence of the liquor cotunnii has also been observed.

Such deficiencies are of course beyond the reach of art.

WOUNDS OF AURICLE.

Usual varieties.—Incised, lacerated, contused.

Treatment.—Differs in no respect from that for similar injuries in other parts; bearing in mind the deformity resulting from the loss of even a small portion, union is always to be attempted.

PARTICULAR DISEASES.

OTITIS.

Definition.—Generic term, implying general disease of the whole organ.

Division of.—Acute, chronic, external, internal.

External includes inflammation of the auricle, and of the meatus auditorius externus.

Internal includes inflammation of the tympanum and labyrinth.

Causes.—1. Exciting. 2. Predisposing.

Symptoms and consequences.—As acute inflammation seldom attacks the entire organ at the same time, or from the same cause, these vary according to the structure of the part inflamed, and will be described under the heads of diseases of particular parts.

ACUTE EXTERNAL OTITIS.

Seat.—Sometimes commences simultaneously in the auricle and meatus—more frequently it extends from the auricle to the canal—it, however, is sometimes limited to the meatus.

Most frequent forms.—Erysipelas, erythema, in short, all the inflammatory actions, either common or peculiar, which affect the cutaneous system.

Causes.

Symptoms.—Vary with the form.

Consequences.

Diagnosis.

Prognosis.—Favorable.

Treatment.—1. Local. 2. General.

ACUTE INTERNAL OTITIS.

INFLAMMATION OF TYMPANUM AND LABYRINTH.

Forms.—Primary. Consecutive.

Seat.—Mucous lining membrane at first, then extending to cellular tissue, to periosteum and to the bone itself.

Causes.—Exciting. Predisposing.

Symptoms.—Agree with those of external otitis, differing only in consequence of their much greater severity, and of the circumstances of the matter formed not finding a ready outlet.

Consequences.

Diagnosis.—May be confounded with external otitis, with meningitis or phrenitis.

Prognosis.—Grave—as troublesome otorrhœa may result—the ossicula may be lost—the membrana tympani or the mastoid cells may be perforated—permanent closure of the eustachian tube may result—or phrenitis, meningitis, and death may follow.

Treatment.

CHRONIC OTITIS.

DIVISION—INTO EXTERNAL AND INTERNAL.

External is divided into that of the auricle and that of the auditory meatus.

Chronic inflammation of the auditory meatus includes—

- 1st. Erythema of meatus with diminished secretion.
- 2d. Inflammation of dermal membrane with inordinate secretion.
- 3d. Polypus, fungus, and vegetations of auditory canal.
- 4th. Sinus of meatus.
- 5th. Inordinate ceruminous secretion.
- 6th. Aphthæ or herpetic ulcerations of lining membrane of meatus.

CHRONIC INFLAMMATION OF THE AURICLE.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—Local and constitutional, as the local affection is often maintained by general derangement of the health.

CHRONIC INFLAMMATION OF MEATUS AUDITORIUS EX-
TERNUS.

ERYTHEMATIC CHRONIC DISEASES OF THE MEATUS.

Synonyme.—l'Otite chronique seche. (Roche.)

Causes.—General derangements of health.

Symptoms.—Uneasiness, slight pain, itching, dry sensation, difficulty of hearing, tinnitus aurium.

Diagnosis.—Tube usually dry—wax in small quantity—most frequently a vitiated secretion of a white or yellowish scaly matter.

Prognosis.—Favorable.

Treatment.—Attention to general health—tonics—counter irritants—
astringents.

II. CHRONIC INFLAMMATION OF DERMAL MEMBRANE WITH INOR-
DINATE SECRETION.

Synonymes.—Humid chronic external otitis, (Roche,) mucus or catar-
rhal otorrhœa. (Itard and Andral.)

Frequency of occurrence.—Very frequent.

Age most liable.—Childhood—sometimes occurs in old age.

Causes.—Acute inflammation—irritation of dentition—metastasis of
gout, gonorrhœa, and mucous ophthalmia—presence of a foreign body.

Symptoms.—Usually mild—uneasiness—audition slightly diminished—
profuse discharge, either serous, mucous, or puriform, or mixed.

Diagnosis.

Prognosis.

Treatment.—Removal of the cause—improvement of general health—
cautious use of astringents.

III. POLYPUS, FUNGUS, AND VEGETATIONS OF AUDITORY CANAL.

Difference between them.—Polypus is oval or round, attached by a single
root, usually regular in its shape and firm in its consistence. Fungus is a
mass of exuberant granulations, soft and vascular, irregular in its shape
and attachments, and always attended with free discharge. Vegetations
consist of numerous small diseased growths, sometimes soft and fungoid,
at others, firm and conical, and attended with slight discharge.

Causes.—Chronic inflammation—local irritation from foreign bodies—
injury to lining membrane by the ear-picker.

Symptoms.

Diagnosis.

Prognosis.—Favorable in polypus—not so favorable in fungus and vege-
tations.

Treatment.—By excision and caustics—by ligature—by extraction with
forceps—by caustics alone.

IV. SINUS OF MEATUS.

Definition.

Causes.—An abscess external to the meatus—a diseased mastoid bone.

Symptoms.

Diagnosis.

Prognosis.—Unfavorable.

Treatment.—Modified by cause—palliative chiefly.

V. INORDINATE CERUMINOUS SECRETION.

Causes.—Acute or chronic inflammation of the meatus.

Symptoms.

Diagnosis.—May be confounded with almost any of the other diseases of the ear; a careful examination must decide.

Prognosis.—Favorable.

Treatment.—Allay any existing inflammation; remove any inspissated cerumen; apply some gentle stimulant. Dangers arising from incautious syringing.

VI. APTHÆ OR HERPETIC ULCERATIONS OF LINING MEMBRANE OF MEATUS.

Causes.—Chiefly constitutional.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—Tonics, and alteratives for the general health; local alterative astringent injections.

FOREIGN BODIES IN THE MEATUS AUDITORIUS EXTERNUS.

Nature of these.—Round and smooth substances; as beans, peas, glass beads; sometimes insects of various kinds.

Origin of insects.

Symptoms.—Those of chronic inflammation, occasioning an otorrhœa, where the cause continues to operate for any length of time.

Treatment.—Removal of the cause will sometimes alone be sufficient; solid substances may be removed by the forceps or by forcible syringing with warm water; insects may be removed by a few drops of oil, or of infusion of tobacco, &c. &c.

Dangers arising from force applied for the extraction of foreign bodies.

INTERNAL CHRONIC OTITIS.

CHRONIC INFLAMMATION OF MEMBRANA TYMPANI.

Causes.

Effects.—Ulceration; perforation; complete destruction.

Mode of inspection and examination.—By speculum; by forcible expiration; by sounding and by the otoscope.

Symptoms.

Diagnosis.—May be confounded with disease of meatus, or of tympanic cavity.

Prognosis.—Unfavorable to audition.

Treatment.

CHRONIC INFLAMMATION OF TYMPANUM.

Forms.—Primary. Consecutive.

Seat of disease.—Mucous membrane; frequently extending to the cellular tissue, and onwards to periosteum and bone.

Causes.

Effects.—Perforation of membrana tympani; loss of ossicula; abscess of mastoid cells; caries of petrous bone; effusion of pus under dura mater or between the cerebral membranes.

Symptoms.

Diagnosis.—May be confounded with other inflammatory diseases of internal ear, with meningitis or phrenitis.

Prognosis.—Unfavorable.

Treatment.—Modified antiphlogistics; injections of mild fluids through the eustachian tube.

RELAXATION OF MEMBRANA TYMPANI.

Definition.

Varieties.—1. From want of tone in the membrane. 2. Paralysis of the internal muscles of the malleus. 3. Rupture of the same muscle.

Causes of each.

Symptoms.

Diagnosis.

Prognosis.—Of first two, favorable; of the last, unfavorable.

Treatment.—Dry warm tonic applications; tonic and astringent injections.

CARTILAGINOUS AND OSSEOUS CONDITION OF MEMBRANA TYMPANI.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—By perforation.

History of operation.—First proposed by Cheselden; proposed and performed by Sir Astley Cooper in cases of obliteration of eustachian tube.

Dangers of operation.—Wound of vascular lining of membrane giving rise to effusion of blood; injury to the chorda tympani, and to the malleus.

Mode of operation.—A simple puncture by trocar, Astley Cooper's operation; by caustic, Richerand's; by drilling with a quadrangular perforator, Buchanan's, Himle's, &c.

OBSTRUCTION OF EUSTACHIAN TUBE.

Forms.—1. Partial. 2. Complete.

Causes.—Inflammation, acute and chronic; extension from the throat of

such diseases, as scarlatina, variola, syphilis, cynanche tonsillaris, enlarged tonsils, descent of nasal polypi.

Symptoms.

Diagnosis.—May be confounded with deafness from other causes.

Prognosis.—Favorable.

Treatment.—By reducing existing inflammation—by constitutional treatment, if the cause requires it—by dilatation, if stricture exists in the course of the tube.

MODE OF CATHETERIZING EUSTACHIAN TUBE.

Instruments used.

History of the operation.—First performed on himself by Guyot, a Post-master at Versailles, in the year 1700; revived by Itard, and materially improved.

Indications for its use.—1. An important means of diagnosis. 2. To remove mucous or blood from tympanic cavity or from eustachian tube. 3. To dilate a stricture. 4. To stimulate the nervous system of the ear.

Dangers of the operation.—1. Inflammation of throat, and catarrh of the tympanum. 2. Emphysema. 3. Rupture of membrana tympani. 4. Strangulation.

Mode of passing instrument.

Air press.

NERVOUS DISEASES OF THE EAR.

Arranged under two heads. 1. Disordered function of the acoustic nerve. 2. Disordered functions of the nerves of common sensibility and motion, or the tympanic nerves.

1. Disordered functions of the acoustic nerves.

Division.—1. The excited or acute state. 2. The torpid or chronic state.

ACUTE STATE.

Causes.—From local affection—sometimes sympathetic with general health, or some disorder of brain, stomach, bowels, or uterus—from over use of organ.

Symptoms.—Tinnitus aurium, deafness, an annoying pulsation synchronous with the heart.

Diagnosis.

Prognosis.

Treatment.—The removal of the cause, administration of tonics, alteratives, counter irritants.

I. TORPID FUNCTIONAL DERANGEMENT.

Age most liable.—Old age.

Causes.—Over excitement of organ; severe constitutional disorder, &c.

Symptoms.

Diagnosis.—May be assisted by the absence of disease in the external and middle ear, by a want of perception of sounds when the cranial bones are thrown into vibration by a watch.

Prognosis.—Unfavorable.

Treatment.—Attention must first be paid to general health; various nervous excitants, as electricity and galvanism, may be tried. Application of ætherous vapor is recommended by Itard and Krahmer.

Mode of introducing vapor.

II. FUNCTIONAL DERANGEMENT OF TYMPANIC NERVES.

Synonyme.—Otalgia or ear ache.

Causes.—The common causes of neuralgia; enlarged tonsils; any local disease in the vicinity; direct injury in sounding the membrana tympani, or eustachian tube.

Symptoms.

Diagnosis.

Prognosis.—Favorable.

Treatment.

FORMS OF DEAFNESS.

DEAFNESS.

Synonymes.—Surditas, cophosis.

Degrees.—1. That marked by impossibility of hearing at all, usually congenital and a cause of dumbness. 2. By power of distinguishing certain sounds, as the pronunciation of the vowels, whistling, &c.

Causes.—Mostly congenital, sometimes acquired. The congenital cases most frequently depend on morbid changes in the soft parts; in a small proportion of cases upon an anomaly in the structure of the solid parts.

Diagnosis.

Prognosis.—Unfavorable in congenital cases; more favorable in acquired cases.

Treatment.

HARDNESS OF HEARING.

Synonyme.—Dyscœcia.

Definition.—Where the faculty of hearing is so diminished that articulate sounds cannot be heard without the assistance of some particular apparatus.

Degrees.—1. Where the individual cannot hear a distant noise, and especially *high tones*, but can perceive articulated sounds when the voice is a good deal raised. 2. He hears and distinguishes both high and low tones, and also words, but only when the voice is somewhat raised.

Causes.—Either some alteration in that part of the organ which serves as a conductor for the vibration of sound; or also an increased sensibility of the acoustic nerve.

Alterations of the conductive parts are of two kinds: 1. A total obliteration of the meatus auditorius externus; its imperforation, or complete absence. 2. A diseased condition of the tympanum, as inflammation of its lining membrane; caries of its parieties; and collections of blood, pus, or other fluid in its cavity.

Diagnosis.—Of some alteration of conducting parts, may be assisted by the patient only hearing when solid bodies are placed between his teeth, while his dull perception of sound does not appear to be less when the ear is covered. Of some diseases of tympanum, by the history, or by marks of previous inflammation.

Prognosis.—Unfavorable.

Treatment.

ALTERATION OR DIMINUTION OF HEARING.

Synonymy.—Paracusis.

Definition.—Where the faculty of hearing articulated sounds in the natural way is imperfect for want of precision.

Causes.—1. Alterations of the membrana tympani from congenital malformation, or from thickening, ossification, perforation, or laceration. 2. The lodgment of fluid in the tympanic cavity, as in some cases of obstruction of the eustachian tube, as in some new born infants. 3. Alterations in the membrane of the fenestra rotunda, such as its imperfect form, its erroneous situation, its thickened state, &c. 4. Depression or excitement of nervous influence, the natural consequences of the patient's sensibility.

Diagnosis.

Prognosis.

Treatment.

V. INJURIES AND DISEASES OF THE NOSE.

WOUNDS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FRACTURE OF THE OSSA NASI.

See "Fractures."

EPISTAXIS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ACUTE INFLAMMATION OF THE SCHNEIDERIAN MEMBRANE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CHRONIC INFLAMMATION WITH THICKENING OF THE SCHNEIDERIAN
MEMBRANE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

OEDEMA OF THE SCHNEIDERIAN MEMBRANE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

OZENA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ULCERATION OF THE NASAL CARTILAGES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CARIES AND NECROSIS OF THE NASAL BONES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ENLARGEMENT OF THE INFERIOR TURBINATED BONE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

DEVIATION OF THE SEPTUM NARIUM.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

LODGEMENT OF FOREIGN BODIES IN THE NOSTRILS.

Nature of these bodies.
Mode of introduction.
Symptoms produced by their presence.
Diagnosis.
Prognosis.
Treatment.

FIBROUS TUMOURS AND CYSTS OF THE NOSTRILS.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

POLYPUS OF THE NOSE.

Definition.
Location.
Form.
Number.
Size.
Consistence.
Color.
Termination.
Division.—1. Non-malignant. 2. Malignant.
 1. Or, non-malignant.
 a. The vesicular.
 b. The gelatinous.
 c. The fleshy.
 d. The fibrous.
 e. The hard.
 2. Or, malignant.
 a. The cancerous.
 b. The medullary or hæmatoid.
 c. The schirrous.
Causes.—Of simple polypus.
General symptoms.

Special symptoms.—Each form is characterized by peculiar symptoms. State what these are.

Causes of malignant polypus.

Special symptoms in each variety.

Diagnosis of polypus tumour.—Has been confounded with a great variety of diseases, viz: enlarged turbinated bone; inclination of the septum; disease of the nasal bones; œdema of the mucous membrane; chronic inflammation; abscesses; ozœna; fibrous tumours of the nostrils; polypus of the antrum; hernia cerebri; foreign bodies in the nostril.

Prognosis.—Depends on the form of polypus.

Treatment.—Varies in the different species of polypus.

EXTERNAL POLYPUS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

LIPOMA.

Definition.

Causes.

Diagnosis.

Prognosis.

Treatment.

LOSS OF NOSTRIL OR THE ENTIRE NOSE.

See "Rhinoplastic operations."

VI. INJURIES AND DISEASES OF THE CHEEKS.

WOUNDS.

Varieties.

Parts liable to be involved.

Symptoms.

Prognosis.

Treatment.

TIC DOLEREUX.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

SPASMODIC ACTION OF THE MUSCLES.

Causes.
Symptoms.
Prognosis.
Treatment.

PARALYSIS OF THE CHEEK.

Varieties.
Causes.
Symptoms.
Prognosis.

Treatment.—1. Constitutional. 2. Local.

1. Only required when the defect depends on a constitutional cause, and must be modified by the nature of this cause.

2. Or local.

a. Blisters.

b. Application of strychnia or veratria.

c. Electricity.

d. Acupuncture.

e. Excision of a portion of the cheek.

f. Section of the antagonising muscles. (Dieffenbach.)

TUMOURS OF THE CHEEK.

Varieties.
Mode of operating in each.

ULCERS OF THE CHEEK.

Division.—External and internal.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

MACULÆ.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

LOSS OF CHEEK.

See "Chieloplastic operations."

VII. INJURIES AND DISEASES OF THE JAWS.

FRACTURES.

See "Fractures."

LUXATIONS.

See "Luxations."

WOUNDS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

INFLAMMATION OF THE LINING MEMBRANE OF THE ANTRUM.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS OF THE ANTRUM.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ULCERATION OF LINING MEMBRANE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SERO-CYSTIC TUMOUR OF ANTRUM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FIBROUS TUMOUR OF ANTRUM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FUNGUS TUMOUR OF ANTRUM.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

POLYPUS OF ANTRUM.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

BONY TUMOUR OF ANTRUM.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FOREIGN BODIES LODGED IN THE CAVITY OF THE ANTRUM.

- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

OSTEO-SARCOMA OF UPPER JAW.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

OSTEO-SARCOMA OF LOWER JAW.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SPINA-VENTOSA OF LOWER JAW.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

EXOSTOSIS OF LOWER JAW.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ANCHYLOSIS OF LOWER JAW.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

REMOVAL OF UPPER JAW.

Mode of operating.

REMOVAL OF LOWER JAW.

Mode of operating.

REMOVAL OF SYMPHYSIS OF LOWER JAW.

Mode of operating.

RESECTION OF DIFFERENT PORTIONS OF THESE BONES.

Mode of operating.

EPULIS.

Definition.

Varieties.

Causes.

Symptoms in each variety.

Diagnosis.

Prognosis.

Treatment.

PARULIS.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

VIII. DISEASES OF THE SALIVARY APPARATUS.

I. DISEASES OF THE PAROTID GLAND AND ITS DUCT.

WOUNDS.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

INFLAMMATION OF THE GLAND.

Varieties.—Acute and chronic.

Causes.

Symptoms.

Prognosis.

Treatment.

ABSCESS OF THE GLAND.

Causes.

Symptoms.

Prognosis.

Treatment.

TUMOUR OF THE GLAND.

Varieties.

- a. Fatty.
- b. Melanotic.
- c. Encysted.
- d. Fibrous.
- e. Simple hypertrophy.
- f. Erectile.
- g. Aneurismal.
- h. Swelling from salivary concretion.
- i. Schirrous.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—In each variety.

TUMOURS OCCUPYING THE PAROTID SPACE.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

WOUNDS OF PAROTID DUCT.

Varieties.

Symptoms.

Prognosis.

Treatment.

FISTULA OF PAROTID DUCT.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.—Four methods. 1. Cicatrization of the Fistulous orifice. 2. Dilatation of the inner portion of the duct. 3. The establishment of a new opening in the mouth, or forming a new portion of the canal, where the original has been destroyed. 4. Destruction of the parotid gland.

Agents employed under the 1st head—

- a. Suture.
- b. Cauterization.
- c. Compression.
- d. Plastic operation.

Agents employed under the 2d head.

- a. Seton.
- b. Probing.

Agents employed under the 3d head—

- a. Operations of Deroy.
- b. “ “ Duphenix.
- c. “ “ Monro.
- d. “ “ Tessard and Flajani.
- e. “ “ Atti.
- f. “ “ Deguise.
- g. “ “ Bonnafons.
- h. “ “ J. Rhea Barton.
- i. “ “ H rner.

Agents employed under the 4th head—

- a. Pressure on the duct.
- b. Ligature of duct.
- c. Pressure on the gland itself.

FISTULA OF PAROTID GLAND.

Varieties.—Two.

Causes.

Symptoms.

Prognosis.

Treatment.—a. Cauterization.

- b. Suture.
- c. Excision.
- d. Blisters.
- e. Gold leaf plaster of Malgaigne.

II. DISEASES OF THE SUB-MAXILLARY GLAND.

WOUNDS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FISTULA.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

ENLARGEMENT OF THE GLAND.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

III. DISEASES OF THE SUBLINGUAL GLAND.

WOUNDS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FISTULA.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

RANULA.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

ENLARGEMENTS OF THE GLAND.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SALIVARY CALCULUS.

- Location.*
- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

IX. DISEASES AND INJURIES OF THE MOUTH.

I. AFFECTIONS OF THE LIPS.

WOUNDS OF THE LIPS.

Varieties.

Causes.

Symptoms.

Treatment.

SIMPLE TUMOURS OF THE LIPS.

Varieties.—Encysted, fatty, transparent cyst, enlarged follicles, verruca, moles, &c., &c.

Causes.—Vary in each form.

Symptoms.—Depend on the variety.

Prognosis.—Depends on the kind of tumour.

Treatment.—Varies with the form of tumour.

CANCER OF THE LIP.

Parts usually attacked.—Margin, and especially that of the lower lip.

Varieties.—Superficial and deep-seated.

Causes.

Symptoms.—Vary with the stage and form of cancer.

Diagnosis.

Prognosis.—More favorable than any other form of cancer.

Treatment.

CANCERUM ORIS.

Definition.

Persons most liable to be attacked.

Causes.—Constitutional and local.

Symptoms.—Vary with stage.

Prognosis.—Unfavorable.

Treatment.—Depends on the stage of the disease, the part attacked, and the situation of the patient.

EVERSION, OR DOUBLE LIP.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

HYPERTROPHY OF THE LIPS.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

ADHESIONS OF THE LIPS.

- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*

HARE-LIP.

- Definition.*
- Varieties.*
- Lip most frequently affected.*
- Complications.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*—Depends on the age of the patient and the nature of the defect.
 - a. The usual operation.
 - b. Barton's curvilinear operation.
 - c. Malgaigne's operation.
 - d. Operation without needles.
 - e. Angular operation.

ATRESIA ORIS.

- Definition.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Treatment.*

MOUTH TOO LARGE.

See Report by Velpeau of a case where the mouth was open nearly to each ear.

LOSS OF LIP.

See "Chieloplastic operations."

II. AFFECTIONS OF THE TONGUE.

WOUNDS OF THE TONGUE.

- Varieties.*
- Causes.*
- Symptoms.*
- Prognosis.*
- Results.*
- Treatment.*

GLOSSITIS.

- Definition.*
- Varieties.*—Acute and chronic.
- Causes.*
- Symptoms.*
- Prognosis.*
- Results.*
- Treatment.*

HYPERTROPHY OF TONGUE.

Varieties.—Congenital or acquired.

Causes.

Symptoms.

Prognosis.

Effects on the bones of the mouth.

Treatment.

- a. Remedies calculated to promote absorption.
- b. Pressure.
- c. Ligature.
- d. Scarifications.
- e. Exsision.

TUMOURS OF THE TONGUE.

Varieties.—Simple and malignant.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

FISSURE OF THE TONGUE.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

GLAZED TONGUE.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

ULCERS OF THE TONGUE.

Varieties.—Simple and malignant.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CANCER OF THE TONGUE.

Parts most frequently attacked.

Various forms presented in its origin.

Causes.

Symptoms.

Prognosis.

Treatment.

ADHESION OF THE TONGUE.

Causes.
Symptoms.
Prognosis.
Treatment.

TONGUE TIE.

Definition.
Causes.
Symptoms.
Prognosis.
Treatment.

STAMMERING.

Definition.
Causes.—1. Congenital. 2. Acquired. 3. Functional. 4. Organic.
Symptoms.—Vary in different cases.
Prognosis.—As regards relief.
Treatment.

- a. Vocal Gymnastics ; (so called.)
- b. Different surgical operations.
- c. Acupuncture as proposed by Detmold.

Examination of the results of these measures.

DEFORMED TONGUE.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

PARALYSIS OF THE TONGUE.

Causes.
Symptoms.
Prognosis.
Treatment.

III. DISEASES OF THE TONSILS AND ROOF OF THE MOUTH.

WOUNDS OF THE VELUM

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

TUMOURS OF THE VELUM.

See "Warren and others."

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

INFLAMMATION.

Varieties.—Acute and chronic.
Causes.
Symptoms.
Prognosis.
Treatment.

ABSCESS.

Causes.
Symptoms.
Prognosis.
Treatment.

ULCERS.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

CLEFT VELUM.

Varieties.—Vary in extent.
Causes.—Congenital.
Symptoms.
Effect on the voice.
Prognosis.—As regards a cure by operation.
Treatment.—Operation of staphyloraphia.

FISSURE AND OPENINGS OF THE HARD PALATE.

Varieties.
Causes.
Symptoms.
Effect on the voice.
Prognosis.
Treatment.—Operations of staphyloraphia and staphyloplasty.

AFFECTIONS OF THE UVULA.

- a. Cleft uvula.
- b. Hypertrophy of uvula.
- c. Enlarged uvula.
- d. Edema of the uvula.
- e. Relaxation of the mucous membrane of the uvula.

Causes in each of these defects.

Symptoms in each.

Prognosis in each.

Treatment in each.

LODGEMENT OF FOREIGN BODIES IN THE FAUCES.

Different kinds.—Fish bones, bits of bread, pins and needles, a thimble, (See Parish,) &c.

Symptoms developed by the lodgement of such matters.

Treatment.

ENLARGEMENT OF THE TONSILS.

Location of the gland.

Structure of the gland.

Different kinds of enlargement.

- a. From acute inflammation.
- b. From chronic inflammation.
- c. From contagious inflammation, as is seen in *anginosa putrida*.
- d. From closure of the orifices of the follicles.
- e. From inspissation of its secretion.
- f. From calcareous deposits.

Persons most liable.—Children of a scrofulous diathesis.

Causes.—Vary with the kind of enlargement.

Symptoms.

Effects on the thorax.—(See Warren.)

Prognosis.

Treatment.—Depends on the kind of enlargement.

X. INJURIES AND DISEASES OF THE NECK.

I. SUPERFICIAL AFFECTIONS.

WOUNDS.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

ABSCESS.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

ULCERS.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

TUMOURS OF THE NECK.

Varieties.—Simple and malignant.
Causes.
Symptoms.
Prognosis.
Treatment.

HYDROCELE OF THE NECK.

See "Maunoir."

Definition.
Causes.
Symptoms.
Prognosis.
Treatment.

BRONCHOCELE.

Definition.—Tumour of thyroid gland; from *Bρουχος*, the windpipe.
Synonymes.—Gotre or goitre, tracheocele, Derbyshire neck, thyrophra-
 sia, &c.

Varieties.—Simple, complicated, and malignant—(See N. R. Smith.)

Age most liable.

Countries in which it is usually found.

Causes.

Symptoms.

Diagnosis.—May be confounded with other tumours.

Prognosis.

Complications.—Often with disease of the heart.

Treatment.

a. Iodine.

b. Mercury.

c. Frictions with various liniments.

d. Operations of various kinds.

1. Electricity. 2. Caustics. 3. Seton. 4. Tapping when it contains
 a cyst. 5. Ligation of the thyroid arteries. 6. Extirpation.

Examination of these different operations.

HERNIA BRONCHALIS.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

DEFORMITY FROM BURNS.

See "Chapter on Cicatrices."

TORTICOLLIS, OR WRY NECK.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

II. AFFECTIONS OF THE LARYNX AND TRACHEA.

WOUNDS.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

INFLAMMATION.

Varieties.—1. Acute and chronic.

Causes.

Symptoms.

Prognosis.

Treatment.

ABSCESS.

Causes.

Symptoms.

Prognosis.

Treatment.

ULCERS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CEDEMA.

Causes.

Symptoms.

Prognosis.

Treatment.

SCALDS.

Causes.

Symptoms.

Prognosis.

Treatment.

CARIES OF THE CARTILAGES.

Causes.

Symptoms.

Prognosis.

Treatment.

FOREIGN BODIES IN THE LARYNX OR TRACHEA.

Nature of these bodies.

How introduced.

Symptoms developed by their presence.

Prognosis.

Effects when the case is not promptly relieved.

Treatment.—Various operations.

a. Tracheotomy.

b. Laryngotomy.

c. Laryngo Tracheotomy.

d. Operation of Malgaigne.

ARTIFICIAL RESPIRATION.

Manner of employing this measure.

III. AFFECTIONS OF THE PHARYNX AND OESOPHAGUS.

WOUNDS.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

INFLAMMATION.

Varieties.

Causes.

Location.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

EXOSTOSIS OF CERVICAL VERTEBRÆ.

Symptoms.
Diagnosis.
Prognosis.
Treatment.

TUMOURS.

Varieties.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ULCERS.

Varieties.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

LOGDEMENT OF FOREIGN BODIES.

Nature of these bodies.
How introduced.
Symptoms developed by their presence.
Prognosis.
Treatment.—Various means, and as a last resort, pharyngotomy or œsophagotomy.

DILATATION OR POUCH OF THE ŒSOPHAGUS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

STRICTURES OF THE OESOPHAGUS.

Varieties.—1. Spasmodic. 2. Permanent. 3. Simple. 4. Malignant or cancerous.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SPASM OR NEURALGIA OF OESOPHAGUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PARALYSIS OF OESOPHAGUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

XI. INJURIES AND DISEASES OF THE THORAX.

WOUNDS.

Varieties.—Superficial and penetrating.

Causes.

Symptoms.—In each form.

Prognosis.—Depends on nature of the wound, &c.

Effect produced by a simple wound of the chest.

Treatment.—In each variety.

WOUNDS OF THE LUNGS.

Causes.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

HERNIA PULMONALIS.

Definition.

Causes.

Symptoms.

Prognosis.

Treatment.

WOUNDS OF THE HEART.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

WOUNDS OF THE INTERCOSTAL ARTERY.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

EMPHYSEMA.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

EMPHYEMA—HYDROTHORAX—HYDROPS PERICARDII.

See "Chapter on Effusions."

CARIES OF THE RIBS.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

TUMOURS OF THE RIBS.

Varieties.
Causes.
Symptoms.
Prognosis.
Treatment.

FRACTURES OF THE RIBS.

See "Fractures."

PARACENTESIS THORACIS.

See "Effusions."

DISEASES OF THE MAMMARY GLAND.

See "Amputation and diseases of females."

XII. INJURIES AND DISEASES OF THE ABDOMEN.

WOUNDS.

Varieties.—Superficial and penetrating.

Causes.

Symptoms in the first or superficial.

Prognosis in superficial wounds.—Generally favorable, but may give rise to peritoneal inflammation, abscess, which may dissect up the integuments to a considerable extent in consequence of the resistance of the fascia, and finally to hernia from the weakness of the cicatrix.

Symptoms in penetrating wounds when no important viscera are injured.

Prognosis in such cases.

Mode of examining such wounds.

Treatment in each form of wounds.

Treatment of penetrating wounds complicated with protusions of the viscera.

WOUNDS OF THE STOMACH.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

WOUNDS OF THE INTESTINES.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

WOUNDS OF THE LIVER.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

WOUNDS OF THE SPLEEN.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

WOUNDS OF LARGE VESSELS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

BLOWS ON THE ABDOMEN.

Symptoms to which they give rise.

Prognosis.

Manner in which death is produced.

Treatment.

ABSCESS IN THE WALLS OF THE ABDOMEN.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

TUMOURS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FISTULÆ—(BEAUMONT'S CASE, ETC.)

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

ARTIFICIAL ANUS.

Varieties.

Causes.

Symptoms.

Prognosis.

Treatment.

POISONS IN THE STOMACH.

Introduction of the stomach pump.

PARACENTESIS ABDOMINIS.

See "Effusions."

EXTRAVASATIONS IN THE CAVITY OF THE ABDOMEN.

Fluids extravasated.

a. Blood.

b. Chyle and lymph.

c. Bile.

d. Urine.

e. Fæces.

Symptoms produced by these extravasations.

Prognosis.

Treatment.

HERNIA.

Definition.—Derived from the Greek *ερωος* a protrusion.

Location.—Groin, Umbilicus, Labia, Foramen ovale, Vagina, Perineum, Ischiatic notch and Diaphragm. Through the broad ligament, (Casteron and Saussier) Pilcher reports a case where the protrusion rested in a hollow of the bone of the pelvis. Mesenteric and Mesocolic hernia, and through the abdominal parietes.

Contents.—Vary in different cases.

Size.—Depends on the size of the viscus involved.

Sac.—Definition, mode of formation, and division. Cases in which the sac is wanting.

Division.—*a.* With reference to the contents of the hernia.—Enterocoele, Epiplocele, Entero-epiplocele, Gastrocele, Hepatocele, Cystocoele, &c., &c.

b. With reference to the situation it occupies.—Inguinal or Bubonocoele—Oscheocoele or Scrotal—Merocele or Femoral—Exomphalos or Umbilical—Ventral—Ventro-inguinal—Phrenic, &c., &c.

c. With reference to the period of its appearance. Congenital and acquired.

d. With reference to the condition of the contents. Reducible—Irreducible without Strangulation—Strangulated without Adhesion—Strangulated with Adhesion.

Causes.—1. Predisposing. 2. Exciting.

Symptoms.—Depend on the variety and location of the hernia; there are certain general symptoms characteristic of the *Reducible, Irreducible, and Strangulated.*

Diagnosis.

Prognosis.

Dissection.

Treatment.—Depends on the variety.

1. For reducible hernia.

a. The truss.

b. Injection of the sac.

c. Caustics.

d. Acupuncture.

e. Scarification.

(Velpeau.)

f. Introduction of gelatine strips.

(Belmas.)

g. Ligature of Schmuicher.

h. Ligature of sac.

i. Seaton or royal stitch.

j. Plastic operation.

(Jamieson.)

k. Pins.

(Bonnet.)

l. Invagination of integument.

(Gerdy.)

m. do do

(Velpeau.)

n. Rest in the horizontal position.

(Ravin.)

o. Hernotomy.

(Detmold.)

2. For irreducible hernia.
- a. Suspensory truss.
 - b. Rest.
 - c. Low diet for a length of time.
 - d. Hollow truss.
3. For strangulated hernia.
- a. The taxis.
 - b. Blood-letting. (Pott.)
 - c. Warm bath.
 - d. Tobacco injection. (Heister.)
 - e. Purgatives. (Monro and Sharpe.)
 - f. Purgative injections.
 - g. Opium.
 - h. Introduction of a stomach tube into the rectum. (O'Beirne.)
 - i. Distension of lower portion of the intestine. (Arnott.)
 - j. Pressure and cold to the tumour. (Arnott.)
 - k. Ice to the tumour.
 - l. Application of ether to the tumour. (Vela.)
 - m. Application of Belladonna to tumour and urethra by means of a bougie.
 - n. Application of a large cupping glass over the tumour.
 - o. Operations.
 1. The usual operation.
 2. Subcutaneous operation. (Guerin.)
 3. Division of stricture without opening the sac.
 4. Dilatation without cutting the stricture. (Arnott and Le Blanc.)
- Question as to how long the operation may be deferred.*
Treatment of the case after the stricture is divided.
 Reduction en masse. (Luke.)

PARTICULAR FORMS OF HERNIA.

I. INGUINAL AND SCROTAL.

Definition.

Varieties.—1. Oblique. 2. Direct. 3. Concealed. 4. Congenital.

Most common variety.—The oblique.

Sex most liable.

Anatomy of the parts concerned in inguinal hernia.

Mode of formation.

Seat of stricture.

Symptoms.

Diagnosis.—May be confounded with—1. Hydrocele of both the tunica vaginalis and cord. 2. Circocoele. 3. Retained testis. 4. Diseased testis. 5. Hematocele. 6. Crural hernia. 7. Tumours of the scrotum.

Diagnosis between oblique and direct hernia.

Prognosis.

Dissection of the tumour.

Treatment.—Depends on the form.

II. FEMORAL, OR CRURAL HERNIA.

Definition.

Sex most liable.

Varieties.

Anatomy of the parts concerned in femoral hernia.

Mode of formation.

Seat of stricture.

Symptoms.

Diagnosis.—May be confounded with—1. Inguinal hernia. 2. Bubo.
3. Varicose femoral vein. 4. Psoas abscess. 5. Fatty tumour. 6. Aneurism.

Prognosis.

Dissection of tumour.

Treatment.

CONCEALED FEMORAL HERNIA.

Definition.

Mode of formation.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

III. UMBILICAL HERNIA.

Definition.

Synonymes.

Varieties.—1. Congenital. 2. That of young persons. 3. That of adults.

Exact point of protrusion.—Depends somewhat on the age of the individual.

Contents of the hernia.

Form.

Size.

Symptoms.

Diagnosis.

Prognosis.

Dissection of tumour.

Treatment.—Modified to suit the age of the individual.

IV. VENTRAL HERNIA.

Definition.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

V. PUDENDAL HERNIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VI. VAGINAL HERNIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VII. PERINEAL HERNIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

VIII. THYROIDEAL HERNIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IX. VESICAL HERNIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

X. ISCHIATIC HERNIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

XI. PHRENIC HERNIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

XII. MESENTERIC AND MESOCOLIC HERNIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

XIII. STANGULATION OF INTESTINES WITHIN THE ABDOMEN.

- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

XIII. INJURIES AND DISEASES OF THE ANUS AND RECTUM.

IMPERFORATE ANUS.

Definition.—Congenital occlusion of the natural orifice of the rectum.

Varieties.—*a.* Simple contraction.

b. Closure by a thin membrane.

c. Termination of the rectum in a *cul-de-sac*, no vestige of the anus being present.

d. Terminations of the rectum in other organs.

e. Formation of a septum above, while the anus itself is open.

Causes.

Symptoms.—Depend on the nature of the defect.

Diagnosis.—Has been confounded with colic, &c.

Prognosis.—Depends on the form.

Treatment.

Treatment when the usual operations cannot be performed.—Various operations for artificial anus.

WOUNDS AND LACERATIONS OF THE ANUS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

INFLAMMATION OF THE ANUS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS OF THE ANUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PRURITUS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

NEURALGIA OF THE ANUS.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Treatment.

SPASM OF THE ANUS.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Treatment.

ATONY OF THE ANUS.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Treatment.

BLENNORRAGIA OF THE ANUS.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Treatment.

HÆMORRHAGE FROM THE ANUS.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Treatment.

ORGANIC STRICTURE OF THE ANUS.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Treatment.

TUMOURS OF THE ANUS.

Varieties.—Verrucæ, condylomata, &c.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SCHIRRUS OF THE ANUS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ULCERS OF THE ANUS.

Varieties.—*a.* Common ulcers. *b.* Aphthous ulcer. *c.* Venereal ulcer.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FISSURE OF THE ANUS.

Definition.

Causes.—Constipation, piles, hard fœces, mechanical injuries, spasm of the sphincter, &c. &c.

Symptoms.

Diagnosis.—Often confounded with neuralgia, sacs, &c.

Prognosis.

Persons most liable.—Women, from their sedentary habits.

Progress.—Generally slow; may be rapid.

Extent.

Treatment.—Various methods employed:

a. Washes and ointments of various kinds.

b. Dilatation.

c. Incision of sphincter.

d. Excisions of fissure. (Mothe, Guerin, Velpeau, &c.)

POUCH OF THE ANUS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PROLAPSUS ANI.

Definition.

Varieties.—1. External. 2. Internal. 3. Prolapsus of the mucous membrane alone. 4. Prolapsus of all the coats of the intestine, (doubted by some.) 5. Reducible. 6. Irreducible.

Causes.—1. Predisposing. 2. Exciting.

1. *a.* Childhood and old age. *b.* Constitutional relaxation. *c.* Want of tone in the muscular apparatus of the anus. *d.* Debility of the whole intestine. *e.* Peculiar arrangement of longitudinal fibres of the rectum.

2.—*a.* Constipation. *b.* Lodgment of foreign bodies in the rectum. *c.* Piles. *d.* Ascarides. *e.* Drastic purgatives. *f.* Prolapsus uteri. *g.* Stricture. *h.* Stone in the bladder. *i.* Violent coughs, &c.

Extent.—Varies in different cases.

Symptoms.—Depend on the form of displacement.

Diagnosis.—Piles, &c.

Prognosis.

Treatment.—Indications. 1. Return the protruded part. 2. Maintain it reduced. 3. Remove the cause of prolapsus.

Mode of returning the prolapsus.

Measures employed under the second indication.—*a.* Laxative diet. *b.* Voiding fœces in the erect posture. *c.* Astringent washes and ointments. *d.* Pressure. *e.* Pessaries. *f.* Cold douche. *g.* Ligature of small folds of the mucous membrane, (Heavyside and Howship.) *h.* Excision of radiated folds, (Hey and Dupuytren.) *i.* Excision of a circular portion of mucous membrane, (Sabatier and Ricord.) *j.* Excision of a portion of the external sphincter, (Robert.) *k.* Radiated incisions and the nitrate of silver, (Coates.) *l.* Cautery, (Chesselden.)

Measures employed under the third indication.

Treatment of irreducible prolapsus.

PROLAPSUS OF THE RECTUM.

Definition.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

FISTULA IN ANO.

Definition.—A suppurating cavity of greater or less extent, situated in the neighborhood of the anus and rectum, discharging by one or more orifices, either externally or into the gut, the walls of which it is very difficult to cause to adhere.

Causes.—Any cause, constitutional or local, calculated to produce inflammation in the cellular tissue surrounding the anus or rectum, may give rise to Fistula.

Varieties.—1. Incomplete or external blind Fistula. 2. Incomplete or internal blind, or occult Fistula. 3. Complete Fistula.

Course or direction.—Varies.

Number.—Varies.

Depth or extent.—Varies.

Seat of the internal orifice in Fistula.

Symptoms.—Vary with the variety.

Mode of examining the anus, for the detection of internal Fistula.

Diagnosis.—May be confounded with the urinary fistula, when external. Occult fistula may be confounded with *sacs of the rectum, internal piles, ulcers, blenorrhagia, &c.*

Prognosis.—Varies in different cases.

Causes which prevent closure of the Sinus, and which must be overcome.—

1. The action of the sphincter and levator ani muscles. 2. The surfaces becoming callous. 3. Lodgment of pus. 4. The passage of fecal matter through the fistula.

Treatment.—Various plans of treatment have been employed, and frequently constitutional as well as local remedies are required.

1st, or constitutional.—Modified to suit the case.

2d, or Local—

a. Bath, mineral waters, &c.

b. Caustics and cautery.

c. Compression—eccentric and external.

d. Ligature.

e. Incision.

f. Excision.

After treatment when operations are performed.

Method to be preferred.—Depends on circumstances.

PILES.

Definition.

Varieties.—1. Blind. 2. Open. 3. External. 4. Internal.

Causes.

Sex most liable.

Class of society most liable.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.—1. Palliative. 2. Radical.

WOUNDS OF THE RECTUM.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

RECTITIS

Definition.
Varieties.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ABSCESS OF THE RECTUM.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ULCERS OF THE RECTUM.

Varieties.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

FOREIGN BODIES LODGED IN THE RECTUM.

Nature of these bodies.
Mode of introduction.
Symptoms developed by their presence.
Diagnosis.
Prognosis.
Treatment.

STRICTURE OF THE RECTUM.

Definition.
Varieties.—1. Spasmodic. 2. Permanent.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

SCIRRHUS OF THE RECTUM.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ESTABLISHMENT OF AN ARTIFICIAL ANUS IN CERTAIN CASES OF
COMPLETE DESTRUCTION OF THE RECTUM.

XIV. INJURIES AND DISEASES OF THE URINARY APPARATUS.

Under this head is included all the affections of the Kidney, Ureter, Bladder, Perineum, Prostate, and Uretha.

I. AFFECTIONS OF THE KIDNEY.

WOUNDS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

NEPHRITIS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS IN KIDNEY.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PYELITIS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HÆMATURIA.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ALBUMINURIA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

DIURESIS SIMPLEX.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

DIURESIS UREOSA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

DIURESIS SACCHARINA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

DIURESIS CHYLOSA.

- Definition.
- Causes.
- Symptoms.
- Diagnosis.
- Prognosis.
- Dissection.
- Treatment.

DIURESIS SEROSA.

*Definition.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

SUPPRESSION OF URINE.

*Definition.**Causes.**Symptoms.**Diagnosis.**Prognosis.**Dissection.**Treatment.*

URINARY CALCULI.

Definition.

Forms assumed by Calculus Matter.—*a.* Amorphous sediments. *b.* Crystallized sediments or gravel. *c.* Solid concretions or stones.

1. *Amorphous Sediments and Gravel.*

Lithic Sediments—

- a.* Yellowish sediment.
- b.* Red or lateritious sediment.
- c.* Pink sediment.

Crystalized Lithic Deposits.

- a.* Red gravel.

Oxalic Acid Deposits.

Phosphatic Deposits—

- a.* Triple Phosphate, or Phosphate of Ammonia and Magnesia.
- b.* Phosphate of Lime.
- c.* Mixed or fusible Phosphates.

2. *Stone or Calculus.**Varieties.*

- a.* Lithic acid.
- b.* Lithate of Ammonia.
- c.* Phosphate of Lime or bone-earth.
- d.* Phosphate of Ammonia and Magnesia, or Triple.
- e.* Phosphate of Lime and Ammonia, and Phosphate of Magnesia, or mixed Phosphate, or Fusible.

- f. Oxalate of lime or mulberry.
- g. Carbonate of lime.
- h. Alternating.
- i. Mixed.
- j. Cystic oxide.
- k. Xanthic oxide.
- l. Fibrinous.
- m. Silicious.
- n. Prostatic.

Origin and increment of calculi.

Forms of calculi.

Size.

Specific gravity.

Surface.

Color.

Odor.

Nucleus.

Consistence.

Chemical composition of the individual calculi.

CALCULUS IN THE KIDNEY.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

II. AFFECTIONS OF THE URETER.

WOUNDS.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

INFLAMMATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PASSAGE OF CALCULUS MATTER ALONG THE URETER.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

STONE IN THE URETER.

- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

DILATATION.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

III. AFFECTIONS OF THE BLADDER.

WOUNDS.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

RUPTURE.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

ACUTE INFLAMMATION OF THE MUCOUS COAT.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CHRONIC INFLAMMATION OF THE MUCOUS COAT.

- Synonyme.*—*Catarrhus vesicæ.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Dissection.*
- Treatment.*

INFLAMMATION OF THE MUSCULAR COAT.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

INFLAMMATION OF THE PERITONEAL COAT.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

IRRITABLE BLADDER.

Definition.

Causes.—Teething, &c.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

SPASM OF THE BLADDER.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

PARALYSIS OF THE BLADDER.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

RETENTION OF URINE.

Definition.

Causes.—Paralysis of bladder. Inflammation of bladder. Spasm of the neck of the bladder, from cold, excess in wine, cantharides, &c. Irritation produced by dentition, hysteria, &c. Enlarged prostate, displacements of the womb, pregnancy, stricture of the urethra, calculus, laceration of urethra, abscess and tumours of the bladder.

Age most liable.

Sex most liable.

Symptoms—Depend very much on the cause.

Diagnosis.—Incontinence, tumour of the bladder, &c.

Prognosis.—Depends on the cause.

Treatment.—*a.* Warm bath. *b.* Opiate injection. *c.* Evacuant injection. *d.* Loss of blood, general and topical. *e.* The catheter. *f.* Forcing the stricture or dividing it, where it exists as the cause of retention. *g.* Puncturing the bladder, which may be done in four places by the *rectum*, above the *pubes*, by the *perineum*, or through *symphysis of pubes*. *h.* The inhalation of ether.

Remedies useful in certain rare cases.

a. Quinine in intermittent or periodic attacks.

b. Caustic bougie in irritable neck of bladder or spasmodic stricture.

c. Affusion of cold water in relaxed patients.

d. Strychnia in paralysis of bladder.

e. Alkalies when the urine is too acid.

f. Large doses of opium, and perfect quiet when the usual modes of relief fail.

INCONTINENCE OF URINE.

Definition.

Age most liable.—Early life and advanced age.

Causes.—Diseased urine; habit; irritable bladder; hereditary predisposition; paralysis of the sphincter vesicæ, from any cause, &c.

Symptoms.

Diagnosis.—Retention of the urine, contracted bladder, &c.

Prognosis.

Treatment.—Depends on the cause.

HYPERTROPHY OF THE BLADDER.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CONTRACTION OF THE BLADDER.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SACCULATED BLADDER.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ULCERS OF THE BLADDER.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

TUMOURS OF THE BLADDER.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SCHIRRUS AND FUNGUS OF THE BLADDER.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

HERNIA VESICÆ AND PROTRUSION OF THE BLADDER.

See "Hernia."

RECTO-VESICAL FISTULA.

- Definition.*
- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

VESICO-VAGINAL FISTULA.

- Definition.*
- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

STONE IN THE BLADDER.

Mode of formation in the bladder.

Causes.—1. Predisposing. 2. Local.

1. *Or Predisposing.*—*a.* Sex. *b.* Race. *c.* Age. *d.* Constitution. *e.* Climate. *f.* Mode of life. *g.* Water. *h.* Dyspepsia.

2. *Or Local.*—*a.* Stricture of the urethra. *b.* Enlarged prostate. *c.* Sacs of the bladder. *d.* Paralysis of the bladder. *e.* Chronic inflammation of the bladder. *f.* Lodgment of foreign bodies of different kinds in the bladder, which serve as nuclei.

Varieties.

Size.

Form.

Number.

Mode of growth.

Condition in the bladder.—Encysted, or loose, or encrusted.

Symptoms.—Depend on a variety of circumstances.

Diagnosis.—Manner of sounding and use of stethoscope, &c.

Prognosis.—Depends on the age and sex of the person, the condition of the organs concerned, and the size, composition, and condition of the stone in the bladder.

Dissection of the bladder when the stone has existed for some time.

Effects upon the ureter and kidneys.

Treatment.—Several indications.

a. Remove the diseased state of the urine upon which the secretion of the stone depends.

b. Palliate the sufferings of the patient.

c. Remove the stone.

1. This indication may be fulfilled by a number of agents, most of which have already been alluded to under the head of "Calculus."

2. The second may be accomplished by demulcent drinks, acid or alkaline medicine, according to the composition of the stone, warm baths, leeches, anodyne injections and perfect rest.

3. The third is answered by a variety of methods.

a. Extraction by the urethra.

b. Solution by injections.

c. Lithotomy, which includes—1. Cutting upon the gripe. 2. The high operation. 3. The single lateral. 4. The bilateral. 5. The recto-vesical.

d. Lithotrity and Lithotripsy.

Preparation of the patient for either of these operations.

EXTRACTION BY THE URETHRA.

Cases to which it is applicable.

Condition of the bladder before the instrument is introduced.

Instruments employed.

Position of the patient during the operation and mode of performing it.

SOLUTION BY INJECTIONS.

Cases to which it is applicable.

Agents employed as solvents.

Manner of using them.

Dangers.

Utility of the measure discussed.

LITHOTOMY.

1. Cutting on the Gripe or Celsian operation.

Cases to which it is applicable.

History of the operation.

Anatomy of the parts concerned.

Manner of performing it.

Dangers.

Utility of the operation discussed.

2. The High or Hypogastric operation.

History of the operation.

Anatomy of the parts concerned in the operation.

Cases to which it is deemed applicable.

Supposed advantages of the operation.

Dangers of the operation.—1. Peritonitis. 2. Extravasation of urine.

3. Wounds of the peritoneum. 4. Lodgments of fragments of the stone.

5. Hæmorrhage. 6. Urinary fistula.

Instruments employed.

Manner of performing the operation.

After treatment.

3. The Simple Lateral.

History of the operation.

Anatomy of the parts concerned in the operation.

Cases to which it is deemed applicable.

Supposed advantages of the operation.

Dangers.—1. Peritonitis. 2. Extravasation of Urine. 3. Cystitis.

4. Hæmorrhage. 5. Inflammation with sloughing. 6. Incontinence of

Urine. 7. Fistula. 8. Wounds of the rectum.

Instruments employed.

Manner of performing the operation.

After treatment.

4. The Bilateral.

History of the operation.

Anatomy of the parts concerned in the operation.

Cases to which it is deemed applicable.

Supposed advantages of the operation.

Dangers.

Instruments employed.

Manner of performing the operation.

After treatment.

5. The Recto-vesical.

- History of the operation.*
- Anatomy of the parts concerned in the operation.*
- Cases to which it is deemed applicable.*
- Supposed advantages of the operation.*
- Dangers.*
- Instruments employed.*
- Manner of performing the operation.*
- After treatment.*

LITHOTRITY.

- History of the operation.*
- Cases to which it is deemed applicable.*
- Supposed advantages of the operation.*
- Dangers.*
- Instruments employed.*
- Manner of performing the operation.*
- Treatment during the course of operations.*

LITHONTRIPSY.

- History of the operation.*
- Cases to which it is deemed applicable.*
- Advantages of the operation.*
- Dangers.*
- Instruments employed.*
- Manner of performing the operation.*
- Treatment during the course of operations.*

STONE IN THE FEMALE.

- Symptoms.*
- Operation to be preferred when an operation becomes necessary.*
- Manner of performing the different operations.*

HYDATIDS AND ENTOZOOA OF DIFFERENT KINDS IN THE BLADDER.

- Varieties.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

IV. AFFECTIONS OF THE PROSTATE GLAND.

WOUNDS OF THE PROSTATE.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

ACUTE INFLAMMATION OF THE PROSTATE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS OF THE PROSTATE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ULCER OF THE PROSTATE

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CHRONIC INFLAMMATION, WITH ENLARGEMENT OF THE PROSTATE.

Causes.

Persons most liable.

Progress.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CHRONIC INFLAMMATION, WITH ATROPHY OF THE PROSTATE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

POUCH OF THE PROSTATE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HÆMORRHAGE FROM THE PROSTATE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

EXCESSIVE SECRETION OF THE PROSTATE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PROSTATIC CALCULI.

Nature.

Causes.

Number.

Size.

Composition.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

MALIGNANT DISEASES OF THE PROSTATE.

V. AFFECTIONS OF THE PERINEUM.

WOUNDS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ACUTE INFLAMMATION.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABCESS IN THE PERINEUM.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

URINARY INFILTRATION.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

DEPOSITS OF LYMPH.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FISTULA.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

NEURALGIA.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

VI. AFFECTIONS OF THE URETHRA.

WOUNDS.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

HÆMORRHAGE FROM THE URETHRA.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

RUPTURE OR LACERATION.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

FALSE PASSAGE.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ACUTE INFLAMMATION.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

CHRONIC INFLAMMATION.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

GLEET.

Definition.

Causes.—An improperly treated gonorrhœa—disease of Cowper's gland, or the mucous lacunæ of the urethra, disease of the prostate; strictures; sometimes constitutional causes, as scrofula, gout, rheumatism, &c.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—Astringent and alterative injections; the argent nit.; in substance; bougies, medicated or simple; constitutional remedies, &c.

GONORRHEA.

Definition.

Causes.

Symptoms.—1. Those affecting the part itself. 2. Those attacking other parts from sympathy.

Period of incubation.

Diagnosis.

Prognosis.

Extent of the inflammation.

Products of the disease.

Connection between gonorrhœa and syphilis.

Treatment.

STRICTURE.

Definition.

Varieties.—1. Permanent. 2. Spasmodic. 3. Mixed.

Most common variety.—Permanent.

Seat of spasmodic stricture.

Causes.—Vary with the form of stricture.

Progress.—Usually increases very slowly.

Number.—Varies.

Extent.—Varies.

Location.—1. At the orifice. 2. Near the middle. 3. Near the bulb. Surgeons do not agree, however, on this point.

Symptoms.—1. Local. 2. Constitutional.

Diagnosis.—May be confounded with gleet; diseased prostate; stone in the bladder; hernia humorhalis; neuralgia of the testis; neuralgia of the perineum; ague, &c.

Prognosis.—Depends on the variety of stricture, the age and health of the patient, &c.

Termination.—May occasionally terminate in ulceration and thus a cure be accomplished.

Effects on adjacent organs.

Treatment.—Mode of examining the urethra.

Different methods of treatment.

a. Dilatation. By bougies, Arnott's dilators, &c.

b. Caustic.

Local remedies.—c. Incision from within.

d. Incision from without.

e. Forcing the stricture.

f. Excision.

g. Catheterism.

h. Cauterizing with argent nit.; to allay irritability.

i. Absorbent operation.

Constitutional remedies.—*a.* Blood-letting.

b. Hot bath.

c. Opium.

d. Inhalations of ether.

When the stricture is impervious and the patient cannot pass urine, the bladder must be tapped, but this should never be done until all our other remedies have been employed.

FISTULA.

Definition.

Varieties.—1. In urethra anterior to perineum. 2. In urethra, and discharging through the perineum.

Causes.—Inflammation and abscess, wounds, &c.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—Remove the cause, if possible, then use according to circumstances the catheter, caustic, suture, incision, blisters, plastic operation.

CONTRACTION OF THE ORIFICE OF THE URETHRA.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ORIFICE TERMINATING TOO FAR BACK.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

TUMOURS OF THE URETHRA.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

PAINFUL TUMOUR OF THE FEMALE URETHRA.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HARDENING OF THE FEMALE URETHRA.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FOREIGN BODIES IN THE URETHRA.

- Varieties.*
- Mode of introduction.*
- Symptoms to which they give rise.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CALCULI IN THE URETHRA.

- Mode of introduction.*
- Symptoms to which they give rise.*
- Manner of removing them.*

XV. DISEASES OF THE PENIS.

EPISPADIAS.

- Definition.*
- Varieties.*
- Causes.*—Mostly congenital—sometimes accidental.
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

HYPOSPADIAS.

- Definition.*
- Varieties.*
- Causes.*—Mostly congenital.
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

PECULIAR MALFORMATION OF METTEAUR.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

BENT OR DISTORTED PENIS.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

PRIAPISM.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

INFLAMMATION OF THE PENIS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

ABSCESS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

URINARY ABSCESS.

- Definition.*
- Causes.*
- Varieties.*—The urine may be collected in a single pouch or cavity, bounded by adhesive inflammation; it may be widely diffused in the cellular tissue; or it may be mixed with pus, forming a urinary abscess proper.
- Causes.*—Perforation of the urethra from wounds, ulceration, &c.
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

WOUNDS OF THE PENIS.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CEDEMA.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

TUMOURS.

- Varieties.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

WARTS.

- Definition.*
- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

SHORT FRENUM.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CONTRACTION OF PREPUCE.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

PHYMOSIS.

- Definition.*
- Causes.*—1. Congenital. 2. Acquired.
- Degrees.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*

Treatment.—Varies with the cause. In congenital cases an operation is usually required; when produced by accidental causes, we should never operate without a due regard to the condition of the parts.

Operations.—1. Slitting up the prepuce. 2. Circumcision. 3. Division of external portion, the mucous lining being left entire. 4. Lisfranc's operation. Removing a semi-circular slice. 5. Velpeau's operation. 6. Removing a triangular piece.

Operation to be preferred.

PARAPHYMOSIS.

Definition.

Causes.

Degrees.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—1. Compression. 2. Cold. 3. Operation.

BALANITIS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

POSTHITIS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

SIMPLE ULCERS.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABRASIONS.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HERPES PREPUTIALIS.

Definition.

Causes.

Age most liable.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

OEDEMA OF PREPUCE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ADHESION OF PREPUCE.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

LOSS OF PREPUCE.

Causes.

Effects to which it gives rise.

Treatment.

SYPHILIS.

Definition.—*εϋ φιλέω* (mutual love.)

Synonymes.—Lues venerea, venereal disease, morbus gallicus, pox, &c.

History.—1. Was syphilis known to the ancients? 2. Was it imported from America into Europe? 3. If not imported thus, when and where did it originate?

Causes.—Supposed by some to occur often *spontaneously*. Impure sexual intercourse. (See Skey.)

Period of incubation.

Question of a special virus.—Broussais and his school, and others also, denied the existence of a specific virus. The experiments of Ricord, Parker, Carmichael, Mayo, Wallace, &c., prove the contrary.

Does gonorrhœal matter ever produce the primary symptoms of syphilis?

Classifications of Symptoms.—

1. Primitive or direct.
2. Successive.
3. Secondary.
4. Tertiary.
5. Diseases unconnected with syphilis.—
(Ricord,) or
 1. Primary or local.
 2. Consecutive, general, or constitutional.
—(Hunter.)

PRIMARY SYPHILIS.

CHANCRE.

Definition.

Mode of development.—1. Pustule. 2. Ulceration or abrasion. 3. Abscess.

Physical character.—Varies with the location, number, degree of inflammation, duration, &c.

Character of the pus.—Varies and is modified by the stage of the chancre.

Stages of chancre.—1. Ulceration, during which the matter secreted will produce the disease if we inoculate with it; it may last several years, but usually only one or two months. (Ricord.)

2. Granulation and Cicatrization. The matter secreted now ceases to possess inoculable properties.

Division.—1. External.

2. Internal, larvated or concealed.

1. Follicular.

2. Indurated.

3. Phagedenic.

4. Furunculus.

Seat of chancre in the different sexes.

Causes.—Sexual intercourse, touching a chancre; during labor the child may be inoculated.

Diagnosis.—Often difficult.

Prognosis.—Varies with the form of chancre. Chancre produced by artificial inoculation; characteristics of—(Ricord.)

Prophylaxis.

Treatment of chancre.—1. Local. 2. Constitutional.

Cases in which mercury should be employed.

Cases in which it should not be administered.

Extent to which it should be carried.

CONSECUTIVE SYPHILIS.

I. BUBO.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

II. SYPHILITIC CUTANEOUS AFFECTIONS.

Varieties.

Period at which they appear.—Sometimes along with the primary symptoms, but generally after these are cured.

Parts of the body most liable to be attacked.

Symptoms.—1. Local. 2. Constitutional.

Diagnosis.

Prognosis.

Treatment.

III. SYPHILITIC SORE THROAT.

Period at which it appears.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

IV. GLANDULAR DISEASE FROM SYPHILIS.

Glands most liable.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

V. IRITIS FROM SYPHILIS.

Period at which it makes its appearance.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VI. SYPHILITIC RHEUMATISM.

Period at which it makes its appearance.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VII. NODES.

Definition.

Period at which they appear.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

VIII. DISEASE OF THE BONES FROM SYPHILIS.

Varieties.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

IX. ALOPÆCIA.

*Definition.**Treatment.*

AMPUTATION OF PENIS.

*Cases requiring the operation.**Mode of performing the operation.*

CANCER OF PENIS.

Symptoms.—Commencing with a wart, or tubercle on the prepuce, frenum, or glans penis, and often remaining quiet for years. Being irritated, it becomes painful and enlarges, often rapidly, and to a very great extent; ulceration then takes place, accompanied by a discharge of sanious fetid matter; pain, sometimes excessive; constitutional symptoms and inflammation of glands of groin.

Diagnosis.—May be confounded with venereal warts or simple tumours; in its ulcerating stage, with sloughing ulcers.

*Tissue affected.**Prognosis.**Treatment.*

XVI. DISEASES OF THE TESTIS.

Under this head are included diseases of the testis itself; diseases of the spermatic cord; and diseases of the scrotum.

I. DISEASES OF THE TESTIS.

SUPERNUMERARY TESTIS.

Numerical increase.—Generally one; three have been enumerated.

Diagnosis.—May be confounded with epiplocele, fatty or fibrous tumours in the scrotum, or an encysted hydrocele of the cord.

ABSENCE OF ONE OR BOTH TESTES.

*Diagnosis.**Consequences.*

IMPERFECT DESCENT OF THE TESTIS.

Varieties.—Where one or both testes have been detained in the abdomen near the internal ring, in the inguinal canal, or in the groin, just outside the external ring.

Causes.—Peritonitis before birth causing adhesion; congenital smallness of the external ring; want of power in the cremaster.

Consequences.—Depend on the situation of the testis; if it is retained within the abdomen, no uneasiness or inconvenience is experienced, nor are

the generative functions likely to be interfered with ; if, however, it should be retained within the canal, it is liable to compression by muscular action. It is exposed to injury from blows and various other causes, all of which may interfere with its development, may impede its nutrition, or excite disease.

Diagnosis.—May be confounded with bubonocele, &c.

Importance of correct diagnosis.

Prognosis.

Treatment.

DESCENT OF TESTIS INTO THE PERINEUM.

Causes.

Diagnosis.

Treatment.

ATROPHY OF THE TESTIS.

Division.—Into that which arises from arrest of development, and that the consequence of wasting.

Causes.—Of the first variety, imperfect descent, congenital inguinal hernia, congenital imperfection of the brain. Of the second variety, inflammation, injuries of the head, impeded circulation, pressure, want of exercise, loss of nervous influence, excessive venery, and by some writers the long continued use of iodine.

Diagnosis.

Prognosis.

Treatment.

INJURIES OF THE TESTIS.

Nature of these.—Contusions and wounds.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

HYDROCELE.

Division.—Into Simple Hydrocele of the Testis ; Congenital Hydrocele, and Encysted Hydrocele of the Testis ; Diffused Hydrocele of the Spermatic Cord ; Encysted Hydrocele of the Cord ; Hydrocele of the Hernial Sac ; Hydrocele of the Female.

I. HYDROCELE OF THE TESTIS.

Definition.

Varieties.—Single and double.

Characteristic of fluid.—Its nature ; its quantity.

Predisposing causes.—Age and climate.

Exciting causes.—Inflammation, obstruction of circulation, inguinal herniæ, strains, or great fatigue, blows, the presence of loose bodies in the tunica vaginalis testis, and disease of the testis itself.

Symptoms.—A pyriform swelling, elastic, and fluctuating, transparent, movable, but remains constant under pressure; little or no pain.

Time required for its formation.

Situation of the testis.

Diagnosis.—May be confounded with scrotal hernia, or malignant disease of the testis, or varicocele, &c.

Mode of examination.

Prognosis.

Treatment.—By external remedies and by operation; treatment by operation is either palliative or radical.

Nature of external remedies.—Cases to which they are suited.

Palliative treatment by operation.—By tapping; by acupuncture.

Period required for its re-accumulation.

Radical treatment by operation.—By incision; excision; caustic; tent; seton; electro-puncture; and by injection.

Operation to be preferred.

Apparatus required.

Kinds of injection.

Dangers of operation.

Advantages of.

Complications.—Encysted hydrocele of the testis; encysted hydrocele of the cord; diffused hydrocele of the cord; oscheo-hydrocele.

II. CONGENITAL HYDROCELE OF THE TESTIS.

Definition.

Symptoms.

Diagnosis.—May be confounded with simple hydrocele, or reducible scrotal hernia.

Prognosis.

Treatment.—By truss and by injection.

Dangers of latter.

III. ENCYSTED HYDROCELE OF THE TESTIS.

Definition.

Structure of cyst.

Situation of cyst.—Either beneath that part of tun. vagin. testis covering the epididymis; between the tun. vaginal. testis and the tun. albuginea; or between the layers of the outer portion of the tunica vaginalis.

Usual situation.

Nature of fluid.

Symptoms.

Diagnosis.—May be confounded with simple hydrocele.

Prognosis.

Treatment.

Operation to be preferred.

IV. DIFFUSED HYDROCELE OF THE SPERMATIC CORD.

Nature and seat of disease.

Symptoms.

Diagnosis.—May be confounded with an omental hernia, an encysted hydrocele, or varicocele, or retained testis.

Prognosis.—Favorable.

Treatment.

V. ENCYSTED HYDROCELE OF THE SPERMATIC CORD.

Definition.

Age most liable.

Nature and seat of cyst.

Causes.

Symptoms.

Diagnosis.—May be confounded with simple hydrocele or with hernia.

Prognosis.

Treatment.—Palliative and radical by operation; operation of Mr. Hey and others.

VI. HYDROCELE OF THE HERNIAL SAC.

Definition.

Causes.—Congenital and accidental.

Diagnosis.—May be confounded with simple hydrocele, or encysted hydrocele of the cord, or with hernia.

Treatment.

VII. HYDROCELE IN THE FEMALE.

Varieties.—Diffused and encysted hydrocele of the round ligament; hydrocele of the canal of Nuck.

Diagnosis.

Prognosis.

Treatment.

HÆMATOCELE.

Definition.

Varieties.—That of tunica vaginalis testis, and that of the cord.

I. HÆMATOCELE OF THE TESTIS.

Varieties.—Where the extravasation takes place in the healthy state of the parts, where it succeeds or is combined with hydrocele.

Causes.—A blow or strain, or a wound of some vessel of tun. vagin. testis, testis itself, or of spermatic artery.

Situation of testis.

Consequences.

Symptoms.

Diagnosis.—May be confounded with hydrocele, chronic enlargement of the testis, extravasation of blood in the cellular tissue of scrotum.

Prognosis.

Treatment.

II. HÆMATOCELE OF THE SPERMATIC CORD.

Causes.

Liability of occurrence.—Rare.

Symptoms.

Diagnosis.—May be confounded with diffused hydrocele of the cord.

Prognosis.—Favorable.

Treatment.

ACUTE ORCHITIS.

Varieties.—Primary and consecutive.

Exciting causes.—Contusion, compression, great excitement of the sexual organs, metastasis from salivary glands, an inflammatory action of the urethra.

Predisposing causes.—Scrofula.

Symptoms.—Local and constitutional, and vary with the form.

Diagnosis.—May be confounded with strangulated inguinal hernia, imperfect descent of testis, &c.

Prognosis.—Generally favorable, varies, however, with the cause.

Consequences.

Terminations.—Resolution, hardening, suppuration.

Treatment.—Leeching, venesection, cold and warm lotions, purging, compression, &c.

II. CHRONIC ORCHITIS.

Anatomical characters.

Consequences.

Causes.—Slight contusions, venereal excesses, masturbation, urethral disease, syphilis.

Symptoms.—Usually of an indolent character.

Terminations.—Resolution, suppuration, ulceration, sinuses, and formation of spermatic fistulæ, hernia testis.

Diagnosis.—May be confounded with carcinoma of testis, hæmatocele.

Prognosis.—Generally favorable.

Treatment.—Chiefly constitutional, mercury.

TUBERCULAR DISEASE OF THE TESTIS.

Seat.

Causes.

Age most liable.—Rarely until after puberty.

Symptoms.—Insidious in their approach and indolent in their progress.

Diagnosis.—May be confounded with chronic orchitis, and malignant disease of the testis.

Prognosis.

Treatment.—Tonic.

CARCINOMA OF THE TESTIS.

Varieties.—Schirrus, Encephaloid, Colloid and Melanosis.

I. SCHIRRUS OF THE TESTIS.

Frequency of disease.—Very rare.

Seat.—The tubuli seminiferi, the epididymis and sometimes the spermatic cord.

Symptoms.—An enlargement of body of the testis with great weight, and severe occasional pain, feeling tuberculated, irregular and excessively hard.

Diagnosis.—May be confounded with chronic enlargement and with encephaloid disease.

Prognosis.—Unfavorable.

Treatment.

II. ENCEPHALOID CANCER OF THE TESTIS.

Synonymes.—Pulpy testis, medullary sarcoma, soft cancer, fungoid disease, fungus hæmatodes.

Age most liable.—No age is exempt, but it is more common at the middle period of life.

Symptoms.—An enlargement, with induration of the body of the testis, which preserves its oval form and even surface; slight tenderness, dull pain, and occasionally a little effusion into the tun. vaginalis; as the gland enlarges it becomes uneven, irregular and tuberculated, also soft and elastic; pain increases; spermatic cord becomes thick and full, scrotum is swollen and varicose; glands of neighboring regions become enlarged and painful; general health suffers; ulceration ensues, and a morbid mass protrudes in the form of a bleeding fungus, and the disease makes rapid progress.

Diagnosis.—May be confounded with hydrocele, hæmatocele, cyst disease, and in its early stage, with chronic orchitis.

Prognosis.

Treatment.

Carcinoma of the Tunica Vaginalis Testis has been observed.

Diagnosis.—May be confounded with hydrocele.

Prognosis.

Treatment.

Colloid or Gelatiniform Cancer and Melanosis of the Testis are very rarely met with.

CYSTIC SARCOMA OF THE TESTIS.

Synonymes.—Cystic disease, Hydatid disease, (Sir A. Cooper.)

Anatomical seat.—In the substance of the testis.

Number.—From two or three to a countless number.

Size.—Vary from a millet seed to that of a pigeon's egg.

Nature of the contents.

Mode of origin.—Difference of opinion. Sir A. Cooper's opinion.

Age most liable.—Middle age.

Causes.

Symptoms.

Diagnosis.—May be confounded with hydrocele and encephaloid cancer.

Prognosis.—Favorable.

Treatment.

FIBROUS TRANSFORMATION OF THE TESTIS.

Anatomical seat.

Consequences.

Diagnosis.—May be confounded with malignant disease.

Prognosis.

Treatment.

OSSIFIC DEPOSITS IN THE TESTIS.

Anatomical seat.—Between the tunica, or in the epididymis.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

LOOSE CARTILAGES IN THE TUNICA VAGINALIS.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

NERVOUS DISEASES OF THE TESTIS.

Varieties.—An exaltation of the natural sensibility of the part, or the irritable testis of most writers, and neuralgia of the spermatic nerves.

1. IRRITABLE TESTIS.

Symptoms.—No perceptible alteration in the parts, but a morbid sensibility accompanied by pain, and generally referred to one particular spot.

Causes.—Constitutional, chiefly.

Diagnosis.

Prognosis.

Treatment.

2. NEURALGIA OF THE TESTIS.

Causes.—Disease of the kidney, the passage of a calculus along the ureter, varicocele, orchitis, but often the cause is hidden.

Symptoms.—Sudden, severe, remitting pain, either of a lancinating or of a dragging or pricking character, and is commonly attended with spasmodic action of the cremaster, and sometimes with nausea and vomiting.

Diagnosis.

Prognosis.

Treatment.

HARDENING OF THE EPIDIDYMIS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

ABSCESS OF THE TESTIS AND EPIDIDYMIS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FISTULA.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

FUNGUS OF THE TESTIS.

- Causes.*
- Symptoms.*
- Diagnosis.*
- Prognosis.*
- Treatment.*

CASTRATION.

Definition.

History of operation.

Diseases rendering it necessary.—The different forms of carcinoma; tubercular disease, cystic disease, some of the terminations of inflammation, severe neuralgia combined with varicocele.

Steps of operation.

Dangers.

OPERATIONS REQUIRED IN IMPERFECT DESCENT OF TESTIS.

II. DISEASES OF THE SPERMATIC CORD.

VARICOCELE.

Definition.—A morbid dilatation of the spermatic veins.

Division into varicocele and circoccele not employed.

Appearances on dissection.

Testis most liable.

Causes.—Anatomical structure, and accidental causes.

Effects.

Symptoms.

Time required in formation.

Diagnosis.—May be confounded with scrotal hernia, or a congenital hydrocele, &c.

Prognosis.

Treatment.—Palliative and radical; Sir A. Cooper's operation; Ricord's operation; Sir B. Brodie's by division of the vessels; Celsus by ligature; modifications of operation by ligature; Breschet's by compression or excision; Pancoast's operation. The truss.

Relative value of each.

ADIPOSE TUMOURS OF THE SPERMATIC CORD.

Age most liable.—Advanced age.

Symptoms.—Loose movable tumour, of a soft doughy feel and lobular character.

Diagnosis.—May be confounded with omental hernia, or varicocele, or hydrocele.

Prognosis.

Treatment.

SPASM OF THE CREMASTER.

Causes.—Generally symptomatic.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

III. DISEASES OF THE SCROTUM.

WOUNDS OF THE SCROTUM.

Nature.

Causes.

Characteristics of contusions.

Diagnosis.

Prognosis.

Treatment.

PRURIGO SCROTI.

Definition.

Symptoms.

Age most liable.—Adult.

Causes.

Prognosis.

Treatment.

VARICOSE VEINS OF THE SCROTUM.

Age most liable.—Old age.

Treatment.

PNEUMATOCELE.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CEDEMA SCROTI.

Synonyme.—Anasaruous hydrocele.

Causes.—Mostly symptomatic.

Symptoms.

Diagnosis.—May be confounded with hydrocele, and elephantiasis of the scrotum.

Prognosis.—Depends on cause.

Treatment.

INFLAMMATION OF THE SCROTUM.

Forms.—Mild and severe.

Symptoms of each.

Terminations of each.—Of the mild, resolution. Of the severe, mortification, and rarely effusion of lymph or pus.

Diagnosis.—May be confounded with œdema.

Treatment.

MORTIFICATION OF THE SCROTUM.

Causes.—Severe inflammation, excessive cold, extravasation of urine.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ABSCESS OF THE SCROTUM.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

ELEPHANTIASIS OF THE SCROTUM.

Definition.

Anatomical seat.

Pathology.

Causes.

Symptoms.

Size of tumour.

Complications.—Scrotal hernia and hydrocele.

Diagnosis.—May be confounded with œdema, &c.

Prognosis.

Treatment.

Dangers of operation.

HYPERTROPHY OF THE SCROTUM.

Definition.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

CANCER OF THE SCROTUM.

Synonyme.—Chimney-Sweeper's cancer.

Symptoms.

Causes.

Diagnosis.

Prognosis.—Unfavorable.

Treatment.

MELANOSIS OF THE SCROTUM—RARELY MET WITH.

TUMOURS OF THE SCROTUM.

Varieties met with.—Adipose, fibrous, &c., &c.

Anatomical seat.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Treatment.

RESTORATION OF THE SCROTUM.

Causes demanding the operation.

Mode of performance.

IMPOTENCE.

Definition.

Difference between impotence and sterility.

Sex most liable.—The male to impotency, the female to sterility.

Causes of impotency.—1. Organic. 2. Functional. 3. Moral.

Symptoms.—Depend on the cause.

Diagnosis.

Prognosis.

Treatment.

SPERMATORRHŒA.

Definition.

Causes.

Symptoms.—1st and 2d stage.

Diagnosis.

Prognosis.

Dissection.

Treatment.

FOURTH DIVISION.

AMPUTATION.

Definition.

Importance.

History.

Classification.

Methods. } 1. Circular.
 } 2. Flap, single and double.
 } 3. Oval or oblique.

Time. } 1. Primary.
 } 2. Consecutive.

Place. } 1. In Continuity of limb.
 } 2. In Contiguity of limb.

Circumstance. } 1. Operations of necessity.
 } 2. Operations of choice or complaisance.

Spot. } 1. Operation of necessity.
 } 2. Operations of election.

Causes demanding the operation.

Prognosis.—Favorable circumstances.

1. Youth.
2. Habit somewhat reduced but not too weak.
3. Cheerful temperament.
4. Good general health.
5. Simple disease or accident.
6. Part at some distance from the trunk.
7. The upper extremity.
8. Circumstances of the patient.

Statistics of amputation.

Preparation of patient.

Instruments required.

Dressings.

Accidents.

Accompanying. } 1. Hemorrhage.
 } 2. Excessive pain.
 } 3. Fainting.
 } 4. Convulsion.

Secondary. } 1. Hemorrhage.
 } 2. Inflammation of stump.
 } 3. Conical stump.
 } 4. Abscess and sinus of stump.
 } 5. Necrosis or caries of bone.

6. Cystitis.
7. Phlebitis.
8. Metastatic abscess.
9. Gangrene.
10. Hectic fever.

Healing of the stump and changes which take place in the different tissues.

Modification of the constitution.

CONSIDERATION OF THE DIFFERENT GENERAL METHODS.

1. Circular Amputation.

History.

Object had in view.

Manner of calculating the flap.

Manner of dividing the tissues.

Reversion of the flap.

Instruments employed.

Advantages of the operation.

Cases to which it is most applicable.

2. Flap Operation.

History.

Object had in view.

Manner of calculating the flap.

Manner of dividing the tissues.

Instruments employed.

Advantages of the operation.

Cases to which it is applicable.

3. Oval Operation.

History.

Object had in view.

Manner of calculating the flap.

Manner of dividing the tissues.

Instruments employed.

Advantages of the operation.

Cases to which it is considered applicable.

4. Operation in Continuity of Limb.

History.

Object had in view.

Manner of dividing the tissues.

Instruments required.

Advantages of the operation.

Disadvantages.

Cases to which it is applicable.

5. Operation in Contiguity of Limb.

History.

Object had in view.

Manner of dividing the tissues.

Instruments required.

Advantages of the operation.

Disadvantages.

Cases to which it is applicable.

SPECIAL AMPUTATIONS.

1. *Of the Upper Extremity.*

These consist of amputations of the Phalanges, metacarpo-phalangeal articulations, metacarpal bones, separately or collectively, metacarpo-carpal joints, radio-carpal articulations, of the fore-arm, elbow-joint, arm, shoulder-joint and shoulder-blade with the arm.

2. *Of the Lower Extremity.*

These consist of amputations of the Phalanges, metatarso-phalangeal articulations, metatarso-tarsal, ankle-joint, leg, at the knee-joint, thigh, and hip-joint.

RESECTION OF BONES.

Definition.

History.

Classification—

1. Those practiced in the continuity of a bone.
2. Those practiced in the contiguity.
3. Those in which the bone is extracted entire.

Cases calling for resection.—Caries, necrosis, osteo-sarcoma, spinaventosa, compound and comminuted fractures, gun-shot injuries, and compound luxation.

Counter indications.

Prognosis.

Time of performance.

Instruments and apparatus.

Special application.



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