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Syllabus of the Course of Lectures of The Principles and Practice of Surgery, Delivered in the Jefferson Medical College, Philadelphia by Thomas D. Mütter, M.D. [Interleaved with student notes by Thomas Sydenham Reed]

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SYLLABUS

OF

THE COURSE OF LECTURES

ON

THE PRINCIPLES AND PRACTICE OF SURGERY,

DELIVERED IN THE

JEFFERSON MEDICAL COLLEGE, PHILADELPHIA,

BY THOMAS D. MÜTTER, M. D.

PART II.

Medical College Library

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1843.
It will be recollected by my Class that last session I informed them that in all probability my work on Surgery would be ready for the present course of Lectures. A desire to render it as complete and as perfect as possible, has induced me to postpone its publication for a few months, until the value of several of the now mooted points shall have been determined by careful and patient observation. In the mean time I offer them this "Syllabus," in the hope, that, by its aid, and diligent attendance on the Lectures, they may derive such information as shall prove useful to their patients as well as to themselves.

The classification adopted differs materially from that of any other surgeon, and its utility has been fully tested during the last five or six 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.
244 Walnut Street.

November, 1843.
Inaugural Essay of Dissertation

Intermittent Fever, Submitted to the Faculty of Jefferson Medical College for the Degree of Medicine by Thomas Lyman Reed

Philadelphia, Oct. 20, 1829
SYLLABUS OF LECTURES.

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INFLAMMATION.

**Definition.**

Liability of tissues to undergo inflammation.—Some more liable than others. Some never attacked. Certain of the lower orders 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. Edematous. 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.

(2.) Constitutional symptoms.

**Theories of Inflammation.**

**Effects on the Blood.**

**Terminations of Inflammation.**


**Effects or Products.**


**Causés of Inflammation—Two Classes.**

1. Constitutional. 2. Local.


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 feeling 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 the 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 endeavour 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, simplices, tart. anim., croton oil, issues, searons, 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 efflux 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 endeavour to cheer up our 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, hydrophthalmia, hydrocele of the neck, hydrothorax, hydropericardium, ascites, ovarian dropsy, edema, anasarca, skin bind of children, hydrocele of the tunica vaginalis testis, hydrothorax.

8. Operations required to relieve these affections.
   (1.) Paracentesis capitis, in hydrocephalus.
   (2.) Paracentesis oculi, in hydrophthalmia.
   (3.) Tracheotomy, in edema 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 articularis, in hydrarthrosis.
   (9.) Puncture of the skin, in edema 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.
The best preparation is loin is one containing:
- Brand Private: 1 oz. Brandy
- Vinegar: 1 oz. with a small amount of:
- Agave nectar: 1/4 oz.

1. Any other cola adds to irritation and
  perhaps in most cases causes applications 55:
  are preferable, feeling the more stimulating like
  heart once or twice painful reaction like cold
  and are more directly sedative than other.
  Woman formulations desire the skin.

1. Hair and prevent irritation. In every
  case, the patient's feelings should be consulted
  and the applications be administered cold according
  to his choice.

1. Dimedone and eucalyptus solutions are
  of much use in the treatment of mucous membranes.

1. Counter irritants.
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 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; Serre's; Delpech'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.


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

History.

Indications for the employment of plastic surgery.

Circumstances which favor the success of the operation.

Circumstances which forbid its employment.

Results of these operations. — 1. Favourable. 2. Unfavourable.

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 vegetative growth.
table 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. Blepharoplasty, 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 chin.
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 the bowels.
15. Elytroplasty, 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 RAMOILISSEMENT.

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.

Effects 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 in 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. Secretion of Pus
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 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 effusion."
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, Hoffman, Stuart, Hunter, Simpson, Morgan, Gendrin, Carswell, Gulliver, Donce, Andral, and Gerbor, 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.—Colour, 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.


Character of pus modified by cause and surface secreting it.

Action of pus on the surfaces 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 is 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.
2. Abscess of debility, or asthenic abscess.
3. Purulent deposit, or abscess by congestion.

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, deposit 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 DEPOSITE, ETC.

Definition.—An abscess which differs from the ordinary forms in the circumstances 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, 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.

HECTIC FEVER.

Definition.—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 "Ulcereative 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. Gueterboch'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 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 the cicatrix.

Power of resisting diseases and disease peculiar to the cicatrix.—Refer to Sir 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. 2d. That required after its complete formation.

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

2. Endeavour, 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 fungous granulations.

Indications under the second head.—1. Endeavour 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.

(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.) 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.

(2.) 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 ulcer.
SIMPLE ULCER.

Characteristics.  

Causes.

Class of persons usually affected.

Parts of the body usually 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 ULCER.

Characteristics.—Depend on cause.  

Causes.—Cancer, scrofula, fungus, scurbutus, 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."
15. Chronic, or that form described by Pott, as attacking chiefly the extremities.

16. Hospital gangrene.

17. Epidemic gangrene.


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—such 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 poisoning 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 vital medicatrix naturae, the progress of mortification is checked, a distinct boundary line is formed between the living and the dead tissue, and nature proceeds to amputate, as it were, the portion which 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 "defunctive 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 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 also 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 stages 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 endeavour to apply such remedies as shall put a stop to the disease in the state of gangrene.
2. We must endeavour 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 favour 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 relaxed 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., creosote, 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.—Depends 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.**

**Synonyme.**—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 ergot 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 causes. The former was called by Linnæus "convulsion cerealis," and by Wepfer, "convulsio ab ustaligine." The latter, "necrosis ustilaginea," by Sauvages.

**Prognosis.**—Usually unfavourable.

**Diagnosis.**—May be imitated by malingerers.

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

**Treatment.**—
1. Constitutional. 2. Local.

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**INFANTILE GANGRENE.**

**Definition.**

**Persons liable.**

**Parts usually attacked.**

**Causes.**—Question of its contagiousness.

**Symptoms.**

**Prognosis.**

**Diagnosis.**

**Treatment.**

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**CHRONIC MORTIFICATION.**

**Definition.**

**Persons most liable.**

**Causes.**

**Symptoms.**

**Prognosis.**

**Diagnosis.**

**Treatment.**

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**HOSPITAL GANGRENE.**

**Definition.**

**Synonymes.**—Phagedena gangrenosa; putrid or malignant ulcer; hospital sore; gangroma contagiosa.

**Causes.**

**Symptoms.**

**Prognosis.**

**Diagnosis.**

**Pathology.**

**Treatment.**

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**MALIGNANT PUSTULE AND CHARBON.**
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. Edematous-Erysipelas. 4. Phlegmonous 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 edematous 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.

Treatment.

FURUNCULUS OR BOIL.

Definition.

Causes.
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. Ery hemos, 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 causes 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 endeavour, 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 mean time 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 aqua 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 caledacent 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 unfavourable cicatrization of burns.

SCORETIC INFLAMMATION, OR SCURVY.

Definition.

Causes.

Symptoms.

Pathology.

Prognosis.

Diagnosis.

Treatment.

SCROFULOUS INFLAMMATION, OR SCROFULA.

Definition.

Synonyms.

Tissues most liable to be attacked.

Age at which the disease usually manifests itself.


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.)

OBSERVATIONS TO THIS USUALLY ACCEPTED DEFINITION.—A wound may be produced by violent action of the muscles alone; and by the protrusion 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 or 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 bloodvessels involved; 5th, the kind of vessel (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 M. Cartney 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.

OBSERVATIONS TO CARTNEY'S VIEWS.

MODE OF ORGANIZATION OF THE LYMPH AND BLOOD.

DIFFERENCE BETWEEN HUNTER AND CARTNEY 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 with the exception of bone, all tissues unite by a substance different from themselves.

The different classes of wounds may next be 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, digitation, 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. Refomulation 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.

Method 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 and 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, kressote, 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.

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.
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 indications.

POISONED WOUNDS.
Definition.—Depends on the character of the cause.
1. When they are produced by the sting 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, caustic poultices, and often constitutional remedies, according to the condition of the patient.

3. Dissecting wounds are best treated by suction, caustic, 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. Can be prevented.
Symptoms.
Pathology.
Prognosis.
Diagnosis.
Treatment.

GUN-SHOT WOUNDS.
Definition.
Varieties.
Characteristics.—Constitutional and local.
Wound wounds.—How produced.
Gun-shot wounds usually contain foreign bodies.
Pathology of the wound.
Prognosis.
Treatment.—Several indications. Modified by nature of wound.
1. Attend to general condition of 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 application should first be tried, and if these fail to afford relief, apply warm or hot.
6. Guard against secondary hemorrhage.
7. Prevent the forming of pus.
8. Prevent inflammation if necessary by antiphlogistics.
9. Support the general health if necessary after suppuration is established.

5 Cold clamping, prevent to be. If of any of necessary to move and the patient.
6. He shall be brought out of his state of nervous debility. Amoena be
7. Than look at the wound. Place the patient if possible in the position he was when the wound was inflicted. Send down foreign body.
8. Establish not to make the wound. Anyone or if too long. Gun shot place. Contracted with foreign. If not. Make a great division, not involving important part. If you cannot open it for purposes to remove the foreign body one at a time. If not, let it alone. If it enter the bone. If bone. If firmly included, let it alone. If on the other side of the shin's extremity opening.
9. If necessary to open it to, best to do it before pure set. No primary amputation.
SECOND DIVISION, OR DISEASES OF
THE TISSUES.

1. DISEASES OF THE BONES.

GENERAL REMARKS.

BONES MOST LIABLE TO DISEASE. Enlargement, fibrosis, and
atrophy.

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. Abcess.

f. Ulceration.

II. NEURALGIA.

Diagnosis.

Causes.

Symptoms.

Prognosis.

Treatment.

FIRST HEAD.

I. NEURALGIA.

Diagnosis.

Causes.

Symptoms.

Prognosis.

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. CARIES, 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 stages of reparation.

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

In the second stage, the swelling diminishes in size, the bone is felt bare, rough, or smooth, according to the nature of the action preceding its death. It 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 oftener we have hectic. The bone is gradually loosened and detached by a process termed "exfoliation," which is very analogous 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.
Causes.—How formed, shape, &c.
Prognosis.
Diagnosis.
Treat.ment.—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 a bone has been destroyed, as you would a fracture of the same part, until the new bone is sufficiently firm.

VIII. MOLLITIES OSSUM.

Definition.
Causes.
Persons most liable to be attacked.
Symptoms.
Prognosis.
Diagnosis.
Pathology.
Treatment.

IX. FRAGILITAS OSSUM.

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. En桂ed tubercle.
2. Tubercular infiltration.
Characteristics of first form, or en桂ed tubercle.
Effects on surrounding parts.
Similarity between en桂ed 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 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.
4. Evacuation of the tubercular cavity.
5. Hypertrophy of the cyst, obliteration of the cavity, recovery.
(Nelaton.)

Characteristics of second 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 subperiosteal 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.

Colour 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.

XVI. HYDATID ENCYSTED TUMOUR OF BONE.

Definition.

Cause.

Part of the bone most liable to be attacked.

Effect upon the bone.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

XV. SEROUS ENCYSTED TUMOUR OF 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. Bone Cancer of the Bone.
Causes.—1. Constitutional. 2. Local.
Bones most frequently attacked. Bones of the extremities.
Age at which it generally occurs.
Symptoms. Bone pain or ache, with swelling, or formation of new bones.
Diagnosis.
Prognosis. Very bad.
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. Fracture: a discontinuity of the continuity of a bone.
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 diseases 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. Rotatory 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 paralysed 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 causes 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. Crepitis.
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 a 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.

The process of the repairation 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 colouring 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.

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 lamb, 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-extension, 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.

3. To prevent the recurrence of the displacements, mechanical means must be applied, and the part guarded against all motion. This indication is occasioned by the employment of rest, favourable 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 bloodletting. 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 phlyctans 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 a secondary fracture.

11. After callus is formed, the parts, especially the joints, remain rigid. The indication here is to relax this rigidity by friction, passive motion, warm douche, vapour 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 the semiflexed 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 "immoveable apparatus."

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

5. That in which the dressing is composed of handkerchiefs, variously folded. This method, 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 FRACTURES.

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 leg.
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 shot, &c.
3. Where the soft parts are extensively stripped off.
4. Where the fracture extends into a large 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 bloodvessels 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 bone pro-
...trade and overlap, and cannot readily be produced. 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.**

Fracture of a bone by injury to its own or another bone.

**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 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 been recently revived by Gasterlen, 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.**

**Resection of bone.**—In cases of long standing, where the bones overlap, and are firmly bound to each other, pressure, the seton, and resection 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 exuberant callus.**—When the spicula or ledges of bone are thrown out around the seat of fracture, and interfere with the motion of the 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.)
PESEUDARTHROSIS, 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 and 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 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 cannula 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 bone.
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.
14. The use of iodine or mercury.
15. The metallic ligature of Samme.
16. The actual cautery. Employed by Kirkbride and others.

DIAPHRAGM, OR SEPARATION OF EPIPHYSSES.

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 by bone. This generally occurs before puberty.

Causes.—Violence or muscular contraction

Synonyms.—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. Very liable to be broken

Causes. Accidents.

Varieties. Simple, compound, comminuted.

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

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. When broken it is by direct force

Causes.

Varieties.

Complications.

Symptoms.
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.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

VII. STERNUM.

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

VIII. RIBS.

Rib in 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 very liable to fracture.

Parts usually broken.

Causes.—Direct or indirect violence.

Varieties.—Complete, incomplete, simple, &c.

Complications.—Paralysis of arm, injury of axillary plexus and vessels.

Symptoms.

Diagnosis.

Prognosis.

Treatment.—Various dressings employed to carry out the three indications of Dessault. 1, Dessault'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 size 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.—Muscular contraction, direct and indirect violence.

Varieties.

Complications.

Symptoms.—Depend 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.
SURGICAL NECK.

SEPARATION OF THE EPiphYSIS.

SHAFT ABOVE INSERTION OF DELTOID.

SHAFT AT ITS MIDDLE.

SHAFT ABOVE CONDyles.

CONDyles.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Signs.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Symptoms.

Diagnosis.

Prognosis.
Treatment.

Liability.

Causes.

Variety.

Symptoms.

Diagnosis.

Prognosis.
Treatment.

The 1st to pass under the place
of a splint & the one you want
S of which should be placed
on a ft, the thing to be done is to place
the fracture in apposition & then commence
in a roller bandage at the base up to the shoulder, then you place the long
splint on the cut side with the bended
end upwards, this splint should
occurrences a little below the elbow the
place should be compared to the arm
by the inter. If the arm continues ever
the above the shaft's splint is placed
on top of the arm.

This is the splint once by Geary &
spinns in pitchers & is called the T splint
of keg used after 2 weeks the slings may
be removed and a carrie splint substituted.

Simp. The same as above

A roll of bandage first and then a long
splint, which must be changed after 2
weeks for one with a removable buckle so
that the arm may move every 5 or a little.
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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 connexion 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 ULSA ALONE.

Liability.—Not as frequent as the radius.

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 COCCYGI.

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

XVIII. OS INNOMINATUM.

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

XIX. FEMUR

Importance of the fractures of this bone.

Liability.
Causes.
Varieties.

Parts usually broken — Head, neck, trochanters, shaft, and condyles.

FRACTURE OF THE HEAD.

FRACTURE OF THE CONDYLE.
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. 

FRACTURE OF FIBULA ALONE.

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

FRACTURE OF THE TIBIA ALONE.

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

XXI. BONES OF THE LEG.

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

XXII. BONES OF THE FOOT.

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

FRACTURE OF OS CALCIS.
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 in 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.


7. Dislocations.


FIRST HEAD.

a. Synovitis—acute and chronic.

b. Hydrops articularis.

c. Abscess.

d. Elongation of ligaments.

e. Inflammation of ligaments.

f. Fleshy 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. Chalky concretions in a joint.

j. Anchylosis.
First Head.

I. SYNOVITIS.

Definition.

Causes.—1. Constitutional. 2. Local.

First, or constitutional.—Rheumatism, gout, gonorrhea, parturition, pregnancy, checked leucorrhcea, 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 bursa, but scarcely with anything 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.

IV. ELONGATION OF LIGAMENTS.

V. INFLAMMATION OF LIGAMENTS.
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 causes 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 bones.

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 unfavourable.
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 antiphlogistics if inflammation runs high. 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 alternatives to suit the diathesis. 4. Keep the joint at rest, while the patient
is allowed, if possible, access to the fresh air. Crutches and slings, &c.

5. Support the strength if prostration should supervene. 6. Prevent anchylosis.

General indications in the third stage.—1. Support the general health. 2. Never open the abscess unless we are forced to do so 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 anchylosis, 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 causes 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. Pneum abscess.

Prognosis.—May be stated to be generally unfavourable.

Dissection.—The appearances on dissection depend 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 antiphlogistic 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 anchylosis must be brought about, the patient may still retain its use. Speak of Physick 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 anchylosis. 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. REPAIRATION 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, tumors, 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, anchylosis of diseased joints, &c.
SPRAINS.

Sixth Head.

Definition.

Causes.

Symptoms.

Diagnosis.

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

Symptoms.—Depend on the variety of anchylosis.

Diagnosis.—Cannot be confounded with any other affection. There is often much difficulty, however, in 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 anchylosis.

Treatment.—In true anchylosis 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 Louvier's operation.

In false anchylosis, the treatment is modified by the cause of stiffness. The agents usually employed are passive motion, friction, electricity, galvanism, antiseptic balsam, division of tendons, fascia and muscles, excision of cicatrices, and some contrivance to take the place of paralysed 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 hematodes. 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 bursae mucosae.

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 remedies.

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 conformation of the joint.
c. The form of the joint.
d. Paralysis of the muscles around the joint.
e. Diseases of the constituent tissues of a joint.
f. Hydrops articulari.
g. Tumours or earthy deposits in or about the joints.
h. Intersitial 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 definite 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.

Treatment. 1st. Place the limb at right angle to the body. 2nd. Use of Splints. The Best solution of the problem is to have a constant supply of Bandages. The bandages should be always kept in readiness.
Second, or physical.

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

Diagnosis. Dilocations 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 or bone.
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. Bloodletting.

b. Hot bath.

c. Tart. Antim. et Potassw.

d. Fumes of tobacco, or injections of its infusion.

e. Intoxication.

f. 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 in 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.) Age, sex, and preternatural elongation of the processus vaginalis.

(2.) Muscular contraction, and force directly applied.

Variety.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.

II. Sub-Luxation of the Lower Jaw.

Definition.

Causes.
III. OS HYOIDES.

Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

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

IV. RIBS.

Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

Anatomy of the articulations.

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

V. STERNUM.

Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

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

VI. CLAVICLE.

Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

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.

Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

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

II. STERNAL EXTREMITY BACKWARDS.

Symptoms.
Diagnosis.
Prognosis.
Dissection.
Treatment.

Causes.
III. STERNAL EXTREMIT Y UPWARDS.

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

IV. SCAPULAR EXTREMIT Y UPWARDS.

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

V. SCAPULAR EXTREMIT Y 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 the 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 scapula, fracture of the neck of the 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. Pulleys 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, and then employ the measures already indicated.

III. BACKWARD 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 SUBLUXATION.

V. DISLOCATION OF THE BICEPS TENDON.

IX. LUXATION AT THE ELBOW-JOINT.
al 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.
X. LUXATION OF THE WRIST.

Anatomy of 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 bones. 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 SYMPHYES.

Liability.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Dissection.

Treatment.
Treatment 1st of the Pelvis.

Flat the Pelvis by Retractors with ease you have the limit in front of the toe or leg. Apply the foot pain to leg of the medle.

In the Torso, there is a Band which may be felt in the groin.

First, lift slightly retaine the toe and the hip of the opposite side. Then you make sure you feeling Band only you make a check on the Elevation.

In the Torso, there is a Band around the Pelvis. The limb necethis a Band may be felt in the groin. 

Treat as a Tonnus Bone around the Pelvis. Then the Elevation Bone is by an assistant. The surgeon makes right to Extensor and then he keeps the leg firmly down. The more you try you will then on undable limb.

34 To Bend out the limb draw up.
Treat Flat the Pelvis by Retractors alone then make your Extention in the line of Displacement to the use of the Tonnus Bone. Send repeat command the leg in order to fly the hand in to the assist with it. Place you have made sufficient Extentio.
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 ili; 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 pulleys.
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.)

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.

VIII. LUXATIONS 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

PATELLA.

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

II. LUXATION OF THE HEAD OF THE TIBIA.

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

III. INTERNAL DERANGEMENT OF KNEE JOINT

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.
IV. SUBLUXATION 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.

XVII. LUXATION OF KNEE.

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 META TARSAL BONES.

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

XXII. LUXATION OF THE PHALANGES.

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

Eighth Head.

CONGENITAL LUXATION.

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

ERRATUM.—Under the classification of Diseases of the Joints, diseases of the Bursae have been introduced by mistake at the ninth head.
III. 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. Sarcofila.
d. Cold.

Symptoms.—1. Local. 2. Constitutional.

Diagnosis.—May be confounded with ositis, caries, necrosis, rheumatism, or gout.
**Prognosis.**—Varies in different cases. Usually the cure is tedious; it may nevertheless be considered a very curable disease.

**Dissection.**—The post-mortem appearances depend on the intensity and duration of the attack.

**Terminations.**—Resolution, suppuration, effusion of lymph; inflammation, 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. Bloodletting.
2. Active purgation.
3. Low diet.
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 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. **OSSEIFICATION OF THE PERIOSTEUM.**

**Definition.**—Partial or general.

**Symptoms.**

**Diagnosis.**

**Prognosis.**

**Terminations.**

**Treatment.**

VI. **MALIGNANT DISEASES OF THE PERIOSTEUM.**

Like all other structures forming the periosteum it is liable to be invaded by the various diseases above mentioned, the characteristics of which have no limits, hence we will be described under other heads.

VII. **WOUNDS OF FASCIA OR APONEUROSIS.**

**Symptoms.**

**Diagnosis.**

**Prognosis.**

**Terminations.**

**Treatment.**

VIII. **CONTRACTION OF FASCIA.**

The numerous fascias and aponeuroses in different parts of the body are all liable to undergo a chronic inflammatory or cicatricial condition, from which results a firmness of formation, most of them are difficult to remove, and where entirely removed. Chilvers and Parry were among the first to describe these affections with any degree of accuracy. In some cases the tissue was long after operated by the various means on which surgeon's hands.

**I. CONTRACTION OF THE SACRUM PALMARIS.**

**Anatomy of the fascia of the palm of the hand.**

**Dissection produced by the contraction of the fascia or fibres were attached to the tarpeus ligament.** (Dupuytren and Geynard.)

**Palsy usually transient.**

**Diagnosis of the contraction.**

**Treatment.**—1. Chirurgical. 2. Acquired; and according to Du Roux's opinion it is probably traumatic.

**Diagnosis.**—May be confirmed with certainty by the absence of motion in the other parts, or contraction of the form tendons, cicatrix, etc.

**Prognosis.**—By no means in every case forreterior. It is, however, only susceptible of relief.

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

**Treatment.**—Three modes of treatment. 1. Mechanical extension. 2. Paralytic. 3. Sublimation note, followed by mechanical treatment. The results of these methods discussed.
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 fasciae 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 Frocic were among the first to describe these affections with anything like method or correctness, although the disease was long since spoken of by the ancients, as "crispatira 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 favourable. 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.
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 PLAN TARIS.

Anatomy of the sole of the foot.
Deformity produced by the contraction of the fascia.
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.
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 BURSÆ.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

IV. HYDROPS BURSÆ.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

V. CARTILAGINOUS FORMATIONS IN THE BURSÆ.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

VI. GANGLION.

Definition.—Encysted tumor formed in the course of a tendon or its fibrous sheath.
Symptoms.
Causes.
Pathology.
Joints most liable.
Diagnosis.
Prognosis.
Treatment.

VII. BUNION.

Definition.—An inflammation with thickening of the bursa mucosa, on the inside of the great toe.
Causes.
Symptoms.
Diagnosis.
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.
V. DISEASES OF THE TENDONS.

I. WOUNDS OF 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.
V. DISEASES OF THE TENONS.

VII. INJURIES AND DISEASES OF THE VOLUNTARY MUSCLES AND THEIR TENONS.

VI. WOUNDS AND RUPTURE OF MUSCLES.

V. WOUNDS OF TENONS.

VI. WOUNDS OF TENONS.

V. DISEASES OF THE TENONS.

1. 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 proper in cases of suppuration elsewhere. The most striking peculiarity of this action here, is the circumstance of the entire muscle often disappearing, as in psoas 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 coloured than natural. The diseases produced by this variety are club-foot, some forms of wry neck, contracted limbs, stiff jaw, etc. It generally results from spasmodic affections, or from the muscles being confined for some time to one position.
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 vigour to the muscles. The most common deformities produced by it are

I. PARALYSIS OF ONE LEG OR OF 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 paralysed 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 also be necessary to consider each one separately.

And first of club foot.
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 vigour, 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 bursa, exostosis, anchylosis, 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 the 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 these 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 to you the character of certain operations, to which I must refer in the management of most of these cases. These are

MYOTOMY, TENOTOMY, AND APONEUROTOMY.

The 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.
2. Congenital valgus, 1st, 2d, or 3d degree at birth.
3. Talipes equinus, 1st, 2d, or 3d degree at birth.
4. Talipes calcaneus, 1st, 2d, or 3d degree at birth.
5. Talipes dorsalis, 1st, 2d, or 3d degree at birth.

CONTRACTED THIGH.

Varieties.
Muscles and tendons involved.


Diagnosis.—May be confounded with the different varieties of anchylosis, 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.

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.


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 causes; 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.


Diagnosis.

Prognosis.—Unfavourable 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.


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.


Diagnosis.

Prognosis.

Treatment.—The same as above.
CONTRACTION OF THE LOWER JAW.

Varieties.
Muscles and tendons in fault.
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 the muscles before the different means usually employed can be used with any effect. (See the cases of Mott, Ferguson, Smythe and myself.)

TORTICOLLIS.

Synonyms.—Caput opisthicus; wry neck.
Definition.—An involuntary and fixed inclination of the head towards one of the shoulders. It is sometimes intermittent.

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. Paly 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.

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.
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.


Diagnosis.

Prognosis.

Dissection.

Treatment.—Several indications. 1. Remove the cause. 2. Use mechanical means to correct the deformity. 3. Where 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. Favourable. 2. Unfavourable.

First, or favourable—

a. Disappearance of deformity.

b. Improvement in vision.

Second, or unfavourable—

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.

Appreciation of the operation.

Leucitis.

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.

1. STAMMERING.

Definition.
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.
Appreciation 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 Cysticercus cellulose, 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.


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. Atheromatous deposits in different portions of the vessel.
4. Steatomatous deposits.
5. Ulceration.


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-pregnancy, in aneurismal varix, and in aneurism by anastomosis or vascular nui.

CONTRACTION.

A diminution in the capacity of an artery has been observed by Morgagni, Desault, Laennec, Mayo, Elliotson, 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.

OBSTRUCTION.

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

IV. ANEURISM.


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 vessel. Vessels of the lower limbs most liable.
e. Vocation. Labouring 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 tumour 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 a 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.
Processes by which a spontaneous cure is accomplished.
  a. Obliteration of the sac by concrete fibre.
  b. Obliteration of both sac and artery by fibre.
  c. Pressure on the trunk of the vessel by the tumour 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 ar-
     tery, 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 circu-
lation 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.
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, Phillips, &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 Ven-
net, on the capillary side of the tumor. 2. That of Guattini, along the
artery, above the tumor, and on the tumor itself. 3. General pressure over
the whole limb.
Agents employed.—Tourniquet, bandage and compresses, 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, Philologus, Guillemeau, &c., the artery was tied above and behind the tumor, 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 tumor, or above the sac.
2. The operation of Brasdor. The ligature is here applied on the distal side of the tumor, 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 tumor.

HUNTER'S OPERATION.

Mode of performing it.
Instruments required.
Cautions to be observed in the application of the ligature.
Immediate effect upon the tumor when the ligature is properly placed.
Subsequent effect on the tumor.
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 tumor.
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 tumor.
Subsequent effect.
Immediate effect on the limb.
Subsequent 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 tumor.
e. Rupture of the sac.
f. Gangrene of the tumor.
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 anything 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.
Symptoms.
Diagnosis.
Prognosis.
Progress.
Dissection.


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 the 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, cedema, 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 dilatation may be uniform or unequal, and involve a portion of, or the entire vein.

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

Symptoms.
Diagnosis.
Prognosis.

Treatment.—1. Palliative. 2. Radical.

Agents employed as palliatives—1. Compression with rollers or strips, or both, or laced stockings. 2. Frictions with iodine ointment, or Davis' 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 Daval, 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.

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 Ackermann, to exist in scrofula; by Hendy, to exist in Barbadoes leg; by White it was considered the cause of phlegmasia dolens; by Assalini and others it was reckoned the cause of dropsy; and Brombilla thought it the cause of white swelling.

III. VARICOSE DILATATION, OR CIRSUS.

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, 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 EXTRIPATION 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.

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.
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 a nerve.

VIII. TETANUS.

Definition.

Varieties as to muscles affected.—1. Opiathotonos. 2. Emprosthotonos. 3. Pleurothotonos. 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, scrofula, typhus, &c.

Character of the blood.

Symptoms.

Prognosis.

Diagnosis.

Treatment.

VII. SEROUS EFFUSION.

Symptoms.

Prognosis.

Treatment.

VIII. FOREIGN BODIES.

Symptoms.

Prognosis.

Treatment.

IX. PARALYSIS.

Definition.

Varieties.

Causes.

Symptoms.

Diagnosis.

Prognosis.

Pathology.

Treatment.
VII. SEROUS EFFUSION.

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

Causes.

Symptoms.

Prognosis.

Diagnosis.

Different kinds of serum effused.

Treatment.

VIII. INDURATION.

Synonym.—Scleroma, skin-bind.

Persons most liable.—Children.

Causes.

Symptoms.

Duration.

Prognosis.

Diagnosis.

Character of the tissue.

Treatment.

IX. EMPHYSEMA.

Synonym.—Pneumatosis 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.

Diseases.

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.


II. LACERATED WOUNDS.


III. CONTUSED WOUNDS.


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.

V. PUNCTURED WOUNDS.

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

VI. WOUNDS OF TEMPORAL ARTERY.

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

VII. WOUNDS INVOLVING THE SCALP AND BONES.

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

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

II. PENEatrTING 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. Perichanitis.

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.
Prognosis.
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.

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 disease, or those attacking the incident or excitor nerves. 3. Diseases of the reflex, or motor nerves. 4. Spinal irritation.

c. INJURIES AND DISEASES OF THE SPINAL COLUMN ITSELF.

1. FRACTURES.

Liability.

Causes.—External violence directly or indirectly applied.

Usual seat of fracture.—Spines, bony bridges, 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.—Depend 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 OF 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 upon 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.

14
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.

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.
Prognosis.
Diagnosis.
Treatment.

V. INFLAMMATION, OR MYELITIS.

Causes.
Symptoms.
Prognosis.
Diagnosis.
Dissection.
Results, or results—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.

GEDEMA.
Causes.
Symptoms.
Prognosis.
Treatment.

II. EXTERNAL DISEASES OF THE EYE.

OPHTHALMIA TARSI.
Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

PSOROPHTHALMIA.

III. DISEASES OF THE RELAXUS OR MUSCLES.

IN简单 irritation.

Hordeolum:

Tylosis.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.
MADAROSIS.
Definition.
Causes.
Symptoms.
Prognosis.
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.

ANCYLOBLEPHARON AND SYMBLEPHARON.
Definition.
Causes.
Symptoms.
Prognosis.
Treatment.
EPICANTHUS.

Definition.
Causes.
Symptoms.
Prognosis.
Treatment.

TUMOURS.

Varieties.—Nevi materni, encysted, half-encysted, tarsal tumours, chalazion, or grande, milium, and verruca.

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 blepharoplasty 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 or products.
Treatment.—1. General. 2. Local.

CATARRHAL OPHTHALMIA.

Definition.
Synonyms.—Conjunctivitis catarrhalis, conjunctivitis purum opera catarrhalis, ophthalmia purulenta mestis, 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.

Causes of each.—Question of its contagiousness. Is it an epidemic?

Symptoms.
Diagnosis.

Prognosis.


Treatment.

GONORRHEAL 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.

HORRIBILIOUS AND SCARLATINOUS OPHTHALMIA.
Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ELCERS OF THE CONJUNCTIVA.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

GRANULATED CONJUNCTIVA.

HYPERTROPHY OF CONJUNCTIVA.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Effect on lids.
Treatment.

PTERYGIUM.
Definition.
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.

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 cornea, fistula cornea, &c.
Treatment.

OPACITY OF THE CORNEA.

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.
Structure.
Treatment.

IV. Injuries and Diseases of the Sclerotica.

Wounds.

Varieties.
Symptoms.
Diagnosis.
Prognosis.
Effects.
Treatment.

Scleritis, or inflammation of the sclerotica.

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

Staphyloma Scleroticum.

Definition.
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.

ILEMOPHTHALMUS.

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

AQUO-CAPSULITIS.

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

HYPOPYON.

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

DROPSY OF THE ANTERIOR CHAMBER.
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 COLOUR IN THE IRIS.
Causes.
Appearance of the eye.
Effect on vision.
Prognosis.
Treatment.

PROCIDENIA, 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.
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 colour of the iris. 3. Displacement of the iris. 4. Hypopyon. 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 unfavourable.
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.

Object 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 sound eyes when both 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 sclerotics.
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.

AMAURISIS.

Definition.
Synonyms.—Gutta serena, suffusion.
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.
Symptoms.—Depend on the stage at which we examine the case.
Diagnosis.—May be confounded with cataract, glaucoma, inuence, &c.
Refer to the catoptric examination.
Prognosis.—Depends on the cause, duration, and degree of the attack.
Influence on sound eye when but one is affected.
Pathology.
Treatment.—Modified to suit the peculiarities of the case.

WEAKNESS OF SIGHT.

Definition.
Causes.
Symptoms.
HEMERALOPIA.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Pathology.
Treatment.

NYCTALOPIA.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Pathology.
Treatment.

HEMIOPA.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Pathology.
Treatment.

NEAR-SIGHT.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Pathology.
Treatment.

FAR-SIGHT.

Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
IX. DISEASES OF THE LENS AND CAPSULE.

CATARACT.

Definition.—Partial or complete opacity of the crystalline lens, of its capsule, or both conjointly, or of the liquor Morgagni.

Varieties.—Lenticular, capsular, capsule-lenticular, and Morgagnian; true and false; radiated and arborescent; hard, soft, and fluid, and cataracts of various colours; congenital and acquired.

Age most liable.

Causes.

Symptoms.—Impaired vision, opacity in or behind the pupil, deposits of lymph, &c. &c.

Diagnosis.—May be confounded with amaurosis, glaucoma, weakened sight, &c. Use the catoptric test to ascertain the true character of the case.

Progress.—Depends on the complication of the case, its duration, &c.

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 favourable 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.
X. DISEASES OF THE GLOBE OF THE EYE.

INFLAMMATION.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

HYDROPHALMIA.

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.

XI. AFFECTIONS OF THE LACHRYMAL ORGANS.

INFLAMMATION OF THE LACHRYMAL GLAND.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.
ENLARGEMENT AND INVASION OF THE LACHRIMAL GLAND.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

EPITHELIUM, OR EXCESSIVE SECRETION OF THE TEARS.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

STILLICIDIIUM LACHRYMARUM.
Definition.
Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

XII. DISEASES OF THE CARUNCULA LACHRYMALIS.
ENCANTHIS.
Definition.
Varieties.—Innocent and malignant.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

XIII. DISEASES OF THE LACHRYMAL SAC AND DUCT.
INFAMMATIO.
Causes.
Varieties.—Acute and chronic.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

ABSCES.

FISTULA LACHRYMALIS.
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 EXCRESENCES.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

CARCINOMA OF THE EYE.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

FUNGOUS NEMATODES OF THE EYE.

Causes.
Symptoms.
Diagnosis.
Prognosis.
Treatment.

MELANOSIS OF THE EYE.

XV. EXTRIPATION 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 eye.
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.
The Words of Admiral Numbers

MODES OF OFFICIAL NOTICES

The flap is taken from on the mem-
ber leg. The flap is connected by Tortion.

The flap is taken from its socket and turns
forms to an other part.

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RECORD, PLASTIC OPERATIONS

By Dr. James

January 14th 1844

Wednesday morning

A command by making a cut with a knife
from the top of the lip of the bone and reaming the
bone is cut into the cavity of the upper part of the
joint, and the cutting is of on the right side
as much as is required and then the lip and
then he brought the two edges to together by
ligatures and then he secured the bone as
more.

The bone is connected in possibly answer in the donor.
The bone is in the bone by passing a lig-
ament from the tip of the bone to the tip of
the bone and then the lip is to be

The lip is placed in it to allow
the flap to fit in it and the donor the flap is
gathered by the use of a joint and then

They took a stick through the lip of the other edge
of the joint and the scissors were

composed at the same time placed two additional

The scissors were cut on the side of the bone
and then formed

a plastic annul in two planes through the
upper part of the bone and then took a lower
Rolen on these joints on each side of the bone
to open to bring the bone.
Died June 24th, 1846 of Cholera Infantum. James Lee aged 18 mo. Geo. J. Rice M. D.

This certificate must be delivered the same day of demise.
Savoyard. Remedy

A Quack Remedy

AQua:

Drummonia

Vennum Antimony

Syrup of Molasses 13 1/2

The specific gravity is the weight of 1 cm

wetness, and the weight of 1 cm

wetness is its specific gravity.