**Syllabus of the course of lectures on the principles and practice of surgery : delivered in the Jefferson Medical College, Philadelphia / by Thomas D. Mütter.**

### Contributors

Mütter, Thomas D. 1811-1859.
Letterman, Jonathan, 1824-1872
Jefferson Medical College.
National Library of Medicine (U.S.)

### Publication/Creation

Philadelphia : Barrett & Jones, printers, 1847.

### Persistent URL

https://wellcomecollection.org/works/uyxf74ga

### License and attribution



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

Sulfate of Potassa was formerly called vitriolated tartar—

Carbonate of Potassa was formerly called salt of tartar, because obtained from burning Nit. of Potass & Bitart. of Potass—

Sal. prunelle is Nit. of Potass, melted & run into moulds & slightly colored—

---

Silver—forms 3 oxides } Ag Cy and H Cy ~~+ Ag Cl~~ =
Chloride of Silver } H Cy and Ag Cl—
Iodide " "
Cyanuret " " Ag Cy—
~~Hydrochloric acid~~ H Cy—
Hydrocyanic acid is formed by decomposing the Ag Cy by H Cl—
Nitrate of protoxide—Ag O, $NO_5$ + Lunar caustic
Sulphate " Ag O, $SO_3$—

---

Test for gold is protochloride of tin forming the purple powder of Cassius—
Gold dissolves in Nitromuriatic acid forms tri chloride—
Platinum forms a bichloride in the same acid—

fracture of rim. a flint in front of
front of row - apply plaster on the
dorsum of fracture in middle of resin plaster
or starch roller -

Dover powder, every grx. contains 8 gr KJ
Potas. Sulphas - 1 gr of Ipecac + 1 of Opium -

Prof Baeker Feb 6 1884 -

Hydrargyrum -

Ca O and Hg Cl forms ash colored protoxide -
K O and Hg Cl black oxide - U.S. -

Hg. cum Magnesia, by rubbing it in manna + carb. mag.
" cum creta " " " chalk -
Pilulae Hg. in the state of protoxide + metallic - by rubbing Hg.
with confec. of roses 3 parts, liquorice powder
& the metal 3 parts here one grain of the
metal in three grains of the mass

Unguent. Hg. ---
☆ Hg O -
1 Red precipitate just attained by heat - called ox and by
2 Precipitate deutoxide, " by solution & corrosive sublimate
muriate chloride of Hg
3 Deutoxide - by nitric acid - merely deutoxide of Hg by evaporating off the nitric acid by heat
by driving off the nitric acid & nitrous oxide of Hg by complete heat -

Proto sulphuret Hg S - black -
Bisulphuret Hg S2 (cinnabar) - Chinese vermilion -
in lustre - when ground to powder + prepared
& by artificial forms vermilion -

Ethiops mineral is a mixture of ~~Hg~~ sulphuret & Sulphuret (black sulphuret of pharmacy)

Protochloride Hg Cl - Calomel - Sublimed or precipitated - made by - Hg all and Hg Cl2 = Hg2 Cl2 + Sn O, Sn O2
wash well with warm water until no precipitate is made by ammonia -
Bichloride - Hg Cl2 - ☆ Hg all Hg Cl2 Sn O3 - Hg Cl2 + O (Hg O Sn O2)
a Semitransparent solid -

Organic Chemistry Feb 13th 1849.

(1)

Oxalic acid - $C_2 O_3$
Croconic " $C_5 O_4$
Mellitic " $C_4 O_3$
} Carbo-oxygen acids

(2)

Acetic acid $C_4 H_3 O_3$
Formic " $C_2 H O_3$
Lactic " $C_6 H_5 O_5$
} Carbo-hydro-oxygen acids.

Tartaric acid & compounds - Feb 16th 49 - Cyanogen - Lactic, Purpuric, Hippuric, Allantoic, Asparticacids - Picric, Amilic, Cholesteric & Ambreic) - Cholic (principium dulcificum of bile) Sulphovinic acids - (this latter is a bisulphate of alcohol) (ora acetic sulphate of Ether i note) -

Classification of

Classes | Sections | Sub.

1 Organic Acids.
- 1 Carbo-oxygen Acids = as Oxalic acids.
- 2 Carbo-hydro-oxygen A. { 1 Non-fatty, 2 Fatty acids.
- 3 Nitrogenous { containing Cyanogen / Cyanoid of "
- 4 Inorganico organic A.
- 5 Doubtful acids

2 11 Bases { Natural Org bases / Artificial " "

3 Neutral Sub. { 1 Carbohydrogen N. S. { Carbon mater / Carbon pater
2 Carbo-hydro-ox N. S. { 2 " " much H.
3 " " " "
3 Nitrogen N. S.
4 Doubtful N. S.

4 Colouring S.

Arrived in Philadelphia October 16th 1847.
Was matriculated in the Jefferson Medical College
October 20th 1847.
Left Philadelphia March 2nd 1848.
Reached home March 5th 1848.
Arrived in Philadelphia 15th Oct. 1848.
~~Was matriculated~~.

Jonathan Letherman
Pa.

Phila. Oct. 1847
Jonathan Letherman
Canonsburgh
Washington County
Penna.

Oct 24th 1848.

Organic Substances

ractions
acids - ~~Uric~~ Acetic, Tartaric

organs
"

Groups
1 alcohol & Ethers
2 Fatty substances
3 Volatile or Vol Oils
4 Resins

# Chemistry –

## Elementary Bodies

### Non-metallic

| | Symbol | Equivalent |
|---|---|---|
| Oxygen | O | 8 |
| Hydrogen | H | 1 |
| Nitrogen | N | 14 |
| Sulphur | S | 16 |
| Selenium | Se | 40 |
| Phosphorus | P | 32 |
| Chlorine | Cl | 36 |
| Iodine | I | 126 |
| Bromine | Br | 78 |
| Fluorine | F | 18 |
| Carbon | C | 6 |
| Boron | B | 11 |
| Silicon | Si | 22 |

### Metallic

| | | |
|---|---|---|
| Potassium | K | 78 |
| Sodium | Na | 24 |
| Lithium | L | 6 |
| Calcium | Ca | 20 |
| Magnesium | Mg | 12 |
| Barium | Ba | 68 |
| Strontium | Sr | 44 |
| Aluminium | Al | 14 |
| Glucinum | G | 26 |
| Zirconium | Zr | 34 |
| Norium | | |
| Yttrium | Y | 32 |
| Erbium | | |
| Terbium | | |
| Lanthanum | La | 46 |
| Didymium | | |
| Iron | Fe | 28 |
| Manganese | Mn | 28 |
| Zinc | Zn | 32 |
| Cadmium | Cd | 56 |
| Lead | Pb | 104 |
| Tin | Sn | 59 |
| Copper | Cu | 32 |
| Bismuth | Bi | 71 |
| Mercury | Hg | 202 |
| Silver | Ag | 108 |
| Gold | Au | 200 |
| Platinum | Pt | 98 |
| Rhodium | R | 52 |
| Palladium | Pd | 54 |
| Osmium | Os | 100 |
| Iridium | Ir | 98 |
| Nickel | Ni | 29 |
| Ruthenium | Ru | 52 |
| Cobalt | Co | 30 |
| Uranium | | 217 |
| Cerium | Ce | 46 |
| Lantanum | La | 46 |
| Didymium | | |
| Antimony | Sb. Stibium | 129 |
| Arsenic | As | 75 |
| Chromium | Cr | 28 |
| Molybdenum | Mo | 48 |
| Tungsten | W | 184 |
| Columbium | Ta | 184 |
| Niobium | Nb | |
| Pelopium | Pe | |
| Titanium | Ti | 24 |
| Tellurium | Te | 64 |
| Vanadium | V | 68 |

# 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.



PHILADELPHIA:

BARRETT & JONES, PRINTERS, NO. 34 CARTER'S ALLEY.

1847.

# NOTE.

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

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

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

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

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

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

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

THOMAS D. MÜTTER.
244 *Walnut Street.*

*Oct.* 1, 1847.

Inflammation is that condition of a part in which there is undue redness, heat, pain, swelling, throbbing, alteration or cessation of excretion & alteration of sensibility.
Redness sometimes altogether disappears after death, which is owing to the action of the capillaries, which are the last to die & by their contracting empty themselves of the blood, dissipating the redness. To be certain that there has been inflammation in a part, there must be some alteration of the structure of the part - (Yellow inflammation indicates syphilis).
Pain is owing to the fact that there is introduced into the part a superabundance of arterial blood, which augments sensibility -
There is a positive increase of heat in the extremities when they are inflamed, but not so with the trunk - for the temperature of the extremities is lower than that of the trunk - The heat is owing to the introduction of arterial blood being greater than usual & to the rapid oxidation of the part -
Swelling is owing first to the introduction of blood. 2d to extravasation of serum - 3d to extravasation of blood - 4th to cessation & stagnation of absorption - Throbbing is owing to the stagnation of blood in the capillaries & to the pulsation of the arteries - & indicates intense inflammation - The constitutional symptoms are symptomatic fever, having all the phenomena of idiopathic fever & to be treated as such with removal of the cause - Theory -
Inflammation is a peculiar action in each organic cell - the first impression is upon the organic nerves of the part - the part for a short time be-

# SYLLABUS OF LECTURES.

## INFLAMMATION.

DEFINITION.

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

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

Second.—1. Healthy. 2. Unhealthy.

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

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

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

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

(1.) *Constitutional symptoms.*

THEORIES OF INFLAMMATION.

EFFECTS ON THE BLOOD.

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

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

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

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

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

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

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

4. *Those which suddenly change the natural feelings of the parts.* For example, drawing off the water in dropsy will cause inflammation of the serous cavity in which it has been collected. Peritonitis frequently comes on after 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 endeavor to remove the cause. An exception to this rule is occasionally met with in surgery, when bullets, &c., lodge deeply.

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

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

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

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

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

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

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

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

---

## PRODUCTS OF INFLAMMATION.

### I. SEROUS EFFUSION.

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

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

becomes pale owing to this stimulation of the nerves causing the capillaries to contract & empty themselves of blood. Then redness owing to the reaction of these vessels which follows their over excitement - the vessels are too much exhausted to contract upon the rushing of blood a stasis takes place, congestion - now begins inflammation. Terminates in resolution only, that is the part returns to its normal condition without any alteration in structure or function - Prognosis depends upon the cause kind & extent of the inflammation - Nauseants good in Erysipelatous inflammation - Treatment - In local inflammations, the principal indication is to remove the cause - Employ general & local blood-letting - In bleeding from the jugular vein, make a longitudinal incision & to close the orifice use nothing but a strip of adhesive plaster - In bleeding from the arm take from the cephalic or median basilic - Should an artery be wounded as it sometimes is the case, put your finger upon the orifice to stop the flow, & commence with a bandage above the fingers & bind the whole arm, putting a compress upon the orifice & putting the arm in a splint - For a thrombus same as for wounded artery - For a wounded lymphatic dip a silver probe into Nitric acid & insert it into the wound, turning it freely in it - Scarify in inflammations of the conjunctiva about the lids & in inflammations of an intense grade - in dependant parts or in parts loose or covered by mucous membranes - Leeches to be applied in inflammations of soft parts - When you employ leech take away enough blood to establish a greater irritation than the original inflammation - Cold - Let it be applied in the form of cold water & ice, for ice abstracts too much heat & will be followed by severe reaction - In gun shot wounded dont use cold but - warm applications, for the wounds are of such a character that they cannot heal by first intention - Counter irritation must be used upon the principle that no two irritations can exist in the same part at the same time & should be used severely. For an issue use caustic potash dont - Nitrate of silver, then apply a poultice & the slough comes off - Position elevate the part -

Products - Serous effusion - result of subacute inflammation - time generally rapid, sometimes slow, when effusion takes place - pain is generally relieved, by the vessels being thereby unloaded - Effusion beneficial or not according to the part affected -

The serum is seperated from the blood by the molecular at-
traction which exists between the organic cells, that surround
the vessel & the vessel itself & not by any mechanical ex-
udation of the fluid -
In Hydrophthalmia use paracentesis freely & sometimes injection
of digitalis -
Hydrothorax - use acupuncture needles, & stimulate the
absorbents, not to let out the water - In urgent cases use
the trocar & evacuate not all the fluid at once - tap between
sixth & seventh or seventh & eighth ribs, always cutting near the
margin of the lowermost rib for fear of wounding the
intercostal artery - In tapping for ascites take care
that the bladder be empty - use a flat trocar & make the
thrust sudden - Ovariotomy not justifiable -
Hydrarthus - tap only when joint is distended almost to
bursting & resort to every other means before opening the
joint - Throw no stimulating injections into the joint on
any account -
Effusion of Lymph requires a high grade of inflammation,
not subacute - Time required for its production de-
pends upon the grade of inflammation & the tissue in
which it is situated - for the most part a slow proces-
slower than that for the effusion of serum, may take
place in from 24 to 30 hours - most liable to occur in
serous tissues - Its effects depend upon the tissue in which
it takes place - If the effusion take place into the cellu-
lar tissue, it becomes hard like boiled white of egg - &
gives diseases such as elephantiasis & the like - When in
serous tissues, instead of hardening as in cellular tissue we
have false membrane formed, thickened & becoming or-
ganized - In mucous - dont thicken the tissue but forms false
membrane - the serous part is absorbed & the fibrinous be-
comes organized 1st - 1st then is a deposit of this creamy like
substance - 2 absorption of the watery portion leaving a
substance like coagulated albumen - 3d a layer of fibre
(which is called fibrulation) in which the granulation cell,
from which the new tissue is formed, is deposited - 4th and specs
are seen which are the development of blood vessels - which
are formed by from the cells by their being placed end to
end, the adjacent ends then being absorbed, thus forming
tubes - We thus see that the blood vessels are not formed by
prolongations of the vessels from the primary tissue -
Diseases - Elephantiasis - a disease of warm climates &
the only way to cure is to excise the limb as medicine will
exert no influence upon it - but bear in mind that it is an
operation of choice not of necessity as the disease is non-
malignant - Tumors of Scrotum from effusion of Lymph
not to be extirpated, as it is a very dangerous operation -
Hardening - a result of simple inflammation, employ
stimulating frictions & pressure -
Softening - occurs in serous & mucous tissues - in inflam-
mations of the stomach, when a poison is suspected
try to peel off the mucous membrane - if it cannot be
peeled off, but presents a soft pultaceous mass, when
the body has not been dead more one or two days, there has
been intense inflammation - if the examination has been de-
ferred longer than above the softening may be caused by the ac-
tion of the gastric acids -
Atrophy - of tissue, especially when resulting from specific
inflammation, (as scrofula), often stopped by a blister, which
gets by overpowering the absorbents -
Suppuration is that condition of a part in which there has
been previous inflammation & in which the [illegible]

## II. EFFUSION OF COAGULABLE LYMPH.

1. *Nature of this fluid.*

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

3. *Time required for its formation.*

4. *Tissues in which it is most liable to occur.*

5. *Effects upon the part into or upon which it is thrown.*

6. *Stages through which the lymph passes in its organization.*

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

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

## III. ADHESION.

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

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

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

*Changes which take place during the organization of the bond of union.*—1, Coagulation; 2, change in color; 3, formation of vessels; 4, increase of firmness; 5, conversion into fibrous or cellular tissue.

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

*Appearance of cicatrix.*

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

### PLASTIC SURGERY.

*Definition.*

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

*History.*

*Indications for the employment of plastic surgery.*

*Circumstances which favor the success of the operation.*

*Circumstances which forbid its employment.*

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

*Treatment after a plastic operation.*

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

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

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

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

### PLASTIC OPERATIONS.

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

1. Cranioplasty, or restoration of the soft parts and bones of the head.
2. Otoplasty, or restoration of the ear.
3. Rhinoplasty, or restoration of the nose.
4. Blepheroplasty, or restoration of the lids.
5. Keratoplasty, or restoration of the cornea.
6. Cheiloplasty, or restoration of the lips.
7. Genioplasty, or restoration of the cheeks.
8. Staphyloplasty, or closure of the soft palate.
9. Palatoplasty, or closure of the palatine vault.
10. Bronchoplasty, or closure of the larynx or trachea.
11. Urethroplasty, or restoration of the urethra.
12. Oscheoplasty, or restoration of the scrotum.
13. Cystoplasty, or restoration of the bladder.
14. Enteroplasty, or restoration of a bowel.
15. 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.*

corpuscle, instead of becoming to the organized condition of the mucous so called, degenerates into pus globules & molecules - the globule of pus is an irregular sphere - Pain - in inflammations of a certain character takes place as soon as 35 minutes - as a general rule, it is the last thing separable - a slow product - Symptoms - Constitutional - Rigors followed by sweating - pain less - but patient feels very uncomfortable - pulse soft and slower than previously - fever for time being - chilliness on the slightest cause - Secretions increased & altered - Local change in color, part becomes livid with a white spot in the centre - pain less, except when under a fascia when it is very much increased - throbbing is also less except when under a fascia - the part is a soft oscillatory mass - fluctuation is evident & is characteristic - Theory - Hippocrates supposed and his theory was adopted until a very late period) that pus altered blood - not true - Not pus being active as supposed by some - not a melting down of solids - not a secretion, because secretion can take place from a gland only, & then is no gland from which pus can be secreted - Not a change of epithelium scales but is serum with pus globules, which are dead exudation corpuscles which are thrown out to form new tissue & become disintegrated by the high grade of inflammation - Pyogenic membrane is in reality nothing but organized plasma, from the free surface of which, when the part is opened, the pus can be seen coming out - the exudation corpuscle is so modified that it now becomes organized - Pus is composed of globules, which are composed of dead exudation corpuscles, a little coagulous matter & molecules, containing water 86.1 fat soluble in alcohol 6.6, ppin &c - Can be distinguished from epithelium scales which is pus cida, by treating the suspected fluid with acetic acid, if it be scale it will be disintegrated & have no oil globules as in pus - Red pus (which is made up by extravasated blood) indicates a very high grade of inflammatory action in the part, which must be brought down by the use of Antiphlogistics - When pus is separated into two parts & soapy indicates, in some cases an indolent ulcer in others an inflammatory grade of inflammation - if the ulcer be external, upon the leg, an indolent ulcer is exhibited - if such pus comes from the bowels, it indicates intense inflammation - Green pus indicates inflammation of a specific character & must be treated accordingly - Pus, with little white flocculi floating in it indicates scrofulous inflammation & to be treated with iodine &c preparations - Pus which is separated into two parts, the upper healthy & the lower of a grayish color is pus with dead plasma, or broken down dead tissue - Serous pus - occurs in anemic individuals & those of much broken down constitutions and demands iron - Pus is modified by various circumstances if from bone or have the earthy matter of bone - also dressing, if the ulcer be dressed with lead or salts of silver the pus is blackened -

Diagnosis between pus & mucous - characteristic difference - put a drop of the suspected fluid into water - if it be mucous it will not sink will make the water milky - mucous is dissolved by hydrochlorate of ammonia - pus on the other hand sinks in water & makes it yellow & is coagulated by hydrochlorate of ammonia -

Progress of suppuration depends upon the place of the part - Treatment - the antiphlogistic plan of treatment which has passed during the inflammatory stage must be changed as soon as the system of patient sustained if need be - The local treatment must also be changed, instead of cold applications we must apply warm &c -

(all the above should face page 18)

## V. SOFTENING, OR RAMOLLISSEMENT.

*Definition.*

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

*Tissues liable to it.*

*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.*

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

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

2. Upon unexposed surfaces, as serous membranes, cellular membrane, &c.; here called "*purulent 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, Donné, Andral, and Gerber, explained.

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

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

1. *Physical properties of healthy pus.*—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.*

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

*Character of pus modified by cause and surfaces secreting it.*

*Action of pus on the surface secreting it.*

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

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

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

1. Local remedies. 2. Constitutional.

## ABSCESS.

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

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

*Classification.*—1. Old arrangement into "*acute* or *hot*," and "*cold* or *chronic*," no longer retained.

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

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

4. *Metastatic abscess.*

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

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

*Changes that take place after this.*—Divided by some into three stages: 1st, deposite 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.

Abscess - grows first by deposit of a simple globule which is the nidus, then another and another is deposited, the part becomes hard, compresses the surrounding tissues which yield & are removed by progressive absorption - points to the nearest surface, or to the point of least resistance - cannot be absorbed until the globule is broken down, as the globule is too large to be taken up by the absorbents or veins -

Opening of Abscess - in a simple circumscribed abscess the result of simple inflammation, make a free incision from the most dependant part - the entrance of air into such a sack after pus is evacuated is of no consequence, hence the free incision made by a bistoury is much the better way, than squeezing the abscess, which is my inprovement - after opening apply a poultice or warm water dressing -

In cold Abscess such as has existed for a long time & of large size, such as is seen in psoas abscess, instead of a free incision we must make a simple puncture with a trocar & canula - empty the sack of ½ or ⅔ of its contents - close it with a piece of adhesive plaster carefully excluding the air, & when it fills open it again as before -

Metastatic Abscess - almost always fatal - we can only assist nature by supporting the system - Caustics the round Nitrate of Silver

*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 circumstance of its pus not being originally formed in the parts in which it is found. It is hence sometimes called *symptomatic abscess.* Cite examples. Why called abscess by congestion?

*Parts most liable to this form of abscess.*

*Pathology.*

*Character of the pus.*

*Diagnosis.*—Often obscure.

*Prognosis.*—Usually unfavorable.

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

### METASTATIC ABSCESS.

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

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

*Number.*—Varies from one to several.

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

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

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

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

*Diagnosis.*—*Obscure.*

*Prognosis.*—*Generally unfavorable.*

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

### FISTULA, OR SINUS.

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

### HECTIC FEVER.

*Definition.*

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

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

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

## X. ULCERATION.

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

*Distinction between wounds and ulcers.*

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

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

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

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

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

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

### GRANULATION.

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

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

Fistula is an open abscess, long & for the most part tortuous - treat - modify the living membrane, which is a pyogenic membrane - 1st if the part permit use Compression - if this fail use a probe dipped in Nitric acid & cauterize the part which is much better than any incision - if these fail the sinus must be laid open with the knife cutting from within outward, taking great care that in so doing we do not cut an artery, since an artery running over a sinus has its coats so attenuated that a ligature will almost be sure to cut through its coats - Dress the wound with lint leaving it in for 24 hours, & then apply a poultice or the nap: mat: dressing causing the wound to heal from the bottom by granulations -

Ulceration - An ulcer is a solution of continuity which is very difficult to heal - in a wound, on the contrary, there is a tendency to heal - An ulcer may result from constitutional causes - a wound never - Causes Constitutional are Scrofula, Syphilis, plague, scurvy, cancerous &c. - But are the result commonly of a local cause & depend upon one of two conditions of the capillaries - viz. intense inflammation or congestion - Hunters view wrong - for there must be actual inflammation in a part before ulceration can take place, but in inflammation absorption is wholly suspended & consequently we cannot have "ulceration absorption" - Ulceration is a vital softening & molecular disintegration of the part for the most part with a diminution of tissue - but in Specific inflammations the size of the part is often greatly increased by the pouring out of plasma which becomes organized - Effects - produces a rough surface, sometimes adhesions - a superficial of great extent though not deep is more dangerous than a smaller ulcer though of higher grade of action -

Granulations - granules are small bodies formed of organized plasma, projecting from the surface slightly & red - of a healthy ulcer must always have them - Thin can be an ulcer (as in cornea) without pus -

Cicatrix - is the healing over of an ulcer - in fleshy organized part it is formed of tissue like the part itself - but in highly organized tissue it is a tissue sui generis - is composed of a thin layer of membrane - then a mass of organized fibrous with intertwining fibres, containing nor hair or sebaceous follicles, constituting the true "inodular" tissue, next corrugated cellular tissue which unites the parts -

Are very liable to take on disease, as we see in those, whose wounds have healed over, are sent into the army & navy & obliged to be transported in ships or make long voyages, that the cicatrices are very liable to take on ulceration &

A cicatrix which is elevated above the surrounding tissues, should not be removed, particularly if it have been removed before -

The operation for the removal of a cicatrix, as of a scald or burn, should always be postponed until it has fully formed, the longer postponed the better the success of the operation - large ones are most difficult of cure, especially if adherent operate on a red cicatrix as the oozing of blood will give much trouble - See that all the parts are sound & that the patient is in good health. When cicatrix is dark it should not be disturbed in nine out of ten cases -

*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 disease, and diseases 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. To render this part of the subject more simple, the operation required in each form of cicatrix may be briefly referred to.

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

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

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

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

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

ULCERS.

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

*Difference between ulceration and an ulcer.*

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

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

SIMPLE ULCER.

*Characteristics.*
*Causes.*
*Class of persons usually affected.*
*Parts of the body attacked.*
*Prognosis.*
*Treatment.*

WEAK ULCER.

*Characteristics.*
*Causes.*
*Class of persons usually affected*
*Parts of the body usually attacked.*
*Prognosis.*
*Treatment.*

INDOLENT ULCER.

*Characteristics.*
*Causes.*
*Class of persons usually affected.*
*Parts of the body usually attacked.*
*Prognosis.*
*Treatment.*

IRRITABLE ULCER.

*Characteristics.*
*Causes.*
*Class of persons usually affected.*
*Parts of the body usually attacked.*
*Prognosis.*
*Treatment.*

SPECIFIC ULCER.

*Characteristics.*—Depend on cause.
*Causes.*—Cancer, scrofula, fungus, scorbutus, syphilis, &c.

Mortification is the absolute death of a part - but gangrene immediately precedes the death of a part.

In hospital gangrene the patient should always be removed.

When epidemic or erysipelatous gangrene prevails no surgical operation should be performed but those of absolute necessity, as the wound will be sure to take on erysipelatous inflammation.

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 characterise mortification under different circumstances. We have, for instance—

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

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

1. It may be occasioned by any cause capable of producing a cessation, or partial cessation, or even a feebleness of the circulation in a part—as inflammation, mechanical obstacles, debility, ossification of arteries, &c.
2. By any cause which occasions violent mechanical or chemical changes in the part, as contusions, lacerations, heat, cold, mineral acids, and caustic alkalies.
3. By any which, in consequence of their poisonous properties, will produce a deleterious influence upon the system at large, as the virus of rabid animals, and poisonous reptiles, and animal fluids the result of decomposition.
4. By any that will impair the powers of nutrition or furnish bad chyle. High living, or bad food, certain articles of food, (as ergot,) bad air, bad lodging, and certain trades by obliging individuals to deny themselves proper food, air, and exercise, will all predispose to mortification, and may produce it without local injury.
5. By any that will cause intense passions or emotions of the mind. (*See* Langenbeck.)

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

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

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

1. It may take place very slowly.

2. It may occur very rapidly.

3. It may be instantaneous.

*Symptoms.*—1. Constitutional. 2. Local.

*Process of sloughing.*—When in consequence of our remedies or the vix medicatrix naturæ, the 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 "*disjunctive absorption.*"

The different changes which take place in this process described.

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

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

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

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

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

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

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

*a.* In obeying the first general indication, we must always take into consideration the *cause* of the attack, and remove it, if possible, at once. If *inflammation* is the cause, *antiphlogistics*, general as well as local, are to be employed. If *strangulation*, or the *arrestation* of the *circulation* be the cause, the stricture must be divided by an operation, or 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

Symptoms - Constitutional - Pulse small & thready
mind delirious. skin cool - secretions locked
up - sensibility altered - Local - change of color
which is a bluish black, with blisters & vibices on the
skin - loss of pain - part becomes cold & boggy and
crepitates - Too much stress should not be laid
upon change of color in the skin, it is not an in-
fallible indication - the skin should be punctured
to see if the capillaries are carrying any blood -
for these vessels cease to carry blood when the part
is dead - if any blood therefore flows from the punc-
ture the part is not dead -

Blisters should be applied on the cardiac side of the affected limb entirely encircling it- and should be used as a stimulant for the vitality of the part is low.
In cases of rapid extension of gangrene amputation should be performed as soon as possible- and in such cases we should not wait for the line of demarcation, but amputate in the sound parts.

Dry gangrene - in this form of gangrene, the spot which appears upon the toe (the part of the body which this form chiefly attacks viz the leg) is white at first, then purple & finally black- There is no swelling- Treat- wrap the part with dry cotton or lint covering it all over carefully with a piece of silk to retain the heat- for the object of the lint is to maintain a constant degree of heat in the part- This dressing should not be touched for a week or two & then only to be renewed- Constitutional treat according to general principles-

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.*—Depend on cause. In traumatic mortification remove the limb as soon as possible. In all other cases wait until the "*red line of demarcation*" is formed.

*Point at which amputation should be performed.*

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

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

## DRY GANGRENE.

*Definition.*

*Synonymes.*—Gangrene senilis—gangrene of the rich.

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

*Causes.*—Divided by Francois into two classes.

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

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

*Symptoms.*—1. Constitutional. 2. Local. When ergot is the cause, the attack may commence with convulsions of the limbs and vertigo, or it may begin with the usual local symptoms of dry gangrene from other causes. The former was called by Linnæus "convulsio cerealis," and by Wepfer, "convulsio ab ustaligine." The latter, "necrosis ustilaginea," by Sauvages.

*Prognosis.*—Usually unfavorable.

*Diagnosis.*—May be imitated by malingerers.

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

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

## INFANTILE GANGRENE.

*Definition.*

*Persons liable.*

*Parts usually attacked.*

*Causes.*—Question of its contagiousness.

*Symptoms.*

*Prognosis.*

*Diagnosis.*

*Treatment.*

CHRONIC MORTIFICATION.

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

HOSPITAL GANGRENE.

*Definition.*
*Synonymes.*—Phagedena gangrenæ; putrid or malignant ulcer; hospital sore; gangrena contagiosa.
*Causes.*
*Symptoms.*
*Prognosis.*
*Diagnosis.*
*Pathology.*
*Treatment.*

MALIGNANT PUSTULE OR CHARBON.

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

---

## VARIETIES OF INFLAMMATION.

ERYSIPELAS.

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

*Division.*—Almost every writer has given his own classification. I adopt that of Mr. Lawrence. He makes four varieties:—1. Erythema. 2. Simple Erysipelas. 3. Œdematous-Erysipelas. 4. 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 œdematous erysipelas, when sloughing occurs, it often becomes necessary to support the constitution.

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

### ANTHRAX, OR CARBUNCLE.

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

*Varieties.*—Benign and malignant.

*Causes.*—Constitutional and local.

*Symptoms.*—Vary with stage.

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

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

*Termination.*

*Treatment.*—Varies with stage.

### FURUNCULUS OR BOIL.

*Definition.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Termination.*

*Treatment.*

### PERNIO, OR CHILBLAIN.

*Definition.*—Specific inflammation. The result of cold.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

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

### FROST-BITE.

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

*Symptoms.*—Constitutional and local.

*Diagnosis.*

*Prognosis.*

*Treatment.*—Varies with degree, location and stage.

## BURNS.

*Definition.*

*Causes.*

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

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

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

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

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

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

When the patient is cool or prostrated, wait for reaction or promote it, and in the 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 aquæ calcis, or a mild poultice.

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

The cuticle must not be removed.

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

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

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

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

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

*Local treatment during cicatrization to prevent deformity.*

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

## SCORBUTIC INFLAMMATION, OR SCURVY.

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

## SCROFULOUS INFLAMMATION, OR SCROFULA.

*Definition.*
*Synonymes.*
*Tissues most liable to be attacked.*
*Age at which the disease usually manifests itself.*
*Causes.*—1. Hereditary. 2. Accidental.
*Characteristics of the "scrofulous diathesis."*
*Symptoms.*—1. Constitutional. 2. Local. Both are modified by the organ or organs attacked.
*Diagnosis.*
*Prognosis.*
*Pathology.*
*Treatment.*—1. Local. 2. Constitutional.

# WOUNDS.

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

OBJECTIONS TO THIS USUALLY ACCEPTED DEFINITION.—A wound may be produced by violent action of the muscles alone; and by the 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 *gun-shot* 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.

OBJECTIONS TO MCCARTNEY'S VIEWS.

MODE OF ORGANIZATION OF THE LYMPH AND BLOOD.

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

COMPARATIVE ADVANTAGES OF THE DIFFERENT MODES OF UNION.

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

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

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

Always in wounds of soft parts our Object should be to get immediate union as we have small cicatrix, little or no pain & a safe union - The French & continental Surgeons, in all large wounds use the method by granulation for they suppose there is less risk of tetanus & less danger of metastatic abscess - but these views are not sound - In "immediate union" there is no effusion of plasma & no inflammation, but the part unite without any intervening substance

An incised wound, is a solution of continuity in soft parts made by a sharp & clean instrument. When a muscle is divided across, the wound is much more difficult of cure, as the wound gapes much owing to muscular contraction & to the natural elasticity of the skin & surrounding parts.

In an incised wound, when we wish to determine whether the artery or vein be severed, make compression upon the artery on the cardiac side. If this arrests the flow, we know the blood comes from the artery. If we suspect a vein, make compression upon the distal side if the bleeding ceases, in all probability it is the vein that has been cut. Bleeding is arrested spontaneously from an artery, by its retraction, by contraction then by the formation of an external clot from the effused blood by the formation of an internal clot up to the first anastamosing branch, which clot in an artery smoothly cut across is pyramidal with top of cone on cardiac side & in a lacerated artery is cylindrical filling the vessel entirely. owing to the shred becoming a sensora for the blood.

In bleeding from an internal organ which we cannot reach with a ligature, we

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

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

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

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

*a*. The ligature.
*b*. Torsion.
*c*. Machure.
*d*. Refoulement, or reduplication.
*e*. Compression.
*f*. Refrigerants.

*g*. Styptics.
*h*. Suture.
*i*. Plugging.
*j*. Seton.
*k*. Acupuncture.
*l*. Electro-puncture.

The most important of these agents is the

LIGATURE.

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

*Effect on an artery.*
*Effect on a vein.*
*Changes which take place in the blood contained in the vessel.*
*Changes which take place in the vessel itself.*
*Manner in which the ligature is discharged.*
*Cause of danger when the ligature comes away.*
*Time required for the obliteration of the vessel.*
*Materials of which ligatures are usually made.*
*Shape and size of ligature.*
*Mode of tying the ligature.*
*Method of applying a ligature*.—Depends on the location of the vessel.

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

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

*Subcutaneous ligature.*
*Ligature d'attente*, or *ligature of reserve.*
*Scarpa's ligature.*
*Ligature and section of the vessel.*
*Temporary ligatures.*

TORSION.

*Definition.*
*History.*
*Arteries to which it is considered applicable.*
*Mode of performance.*
*Objections to its employment.*

MACHURE.

*Definition.*
*History.*
*Arteries to which it is considered applicable.*
*Mode of performance.*
*Objections.*

REFOULEMENT, OR INVERSION.

*Definition.*
*History.*
*Arteries to which it is considered applicable.*
*Mode of performance.*
*Objections.*

must bleed from both arms, patient in the upright posture, until syncope is induced for this is the only way to arrest the bleeding in an internal organ wounded by a sharp instrument as thus the action of the heart is lessened & gives the blood an opportunity of forming a clot in the orifice of the bleeding vessels. When we cant find the pulse, give digitalis, put patient in a cold room, keep him perfectly quiet mentally as well as physically, let his drink be small pieces of ice - give him no food for three or four days, may give him some light food then if there be no reaction - If symptomatic fever ensues it must be combated antiphlogistics - In such cases of bleeding as these "bleed-letting is the sheet anchor & starvation the chain cable"

In applying a ligature about an artery we should draw it until we feel the internal coats give way - If a vein be treated in the same way the coats are not divided & inflammation is very readily excited & travels up the vessel giving rise to all the dangers of phlebitis - for the inflammation in a vein is not stopped as in an artery by effused plasma - Ligatures come away by ulceration, hence we should wait until the vessel is ulcerated through before we pull it away, for by neglecting this rule we should tear the artery before it has become completely sealed up & thereby have secondary hemorrhage - When they are slow in coming away, put them upon the stretch, as by so doing we hasten the ulceration of the vessel - Ligatures should be round & of waxed white silk - flat ligatures do not divide the coats of the vessel & are hence

sensation - Subcutaneous ligature is not to be thought of as much there will almost necessarily be involved in it. Ligature of vessel - when another ligature is placed upon the cardiac side of the one which has been applied, that there may be no danger - but this is of no use. Torsion - not to be used on large vessels - for if the artery be twisted too tightly it will slough off & if not tight enough, will unwind - it is to be used upon small vessels and in operations such as plastic operations - in them they are the best, as no foreign body (ligature) is introduced into the wound - Machure or mashing - the vessel is to same condition as in laceration, mashing should take remove for the blood - Compression - to be used in such cases as when an artery is cut in bleeding - in such case place a small compress over the orifice - a larger one on top of this, & then take a roller, beginning at the fingers, encircle the arm to above the elbow - The roller itself can be used sometimes in cases of oozing - Hemo of assistant in operations high up on extremities - Garot - a handkerchief with a knot upon it tied around the limb & then drawn tight with a stick - Tissues itself as in operations on hare lip when the edges of the tissues are pressed together -
In cases of deep penetrating wound when the blood is welling out use compressed sponge, first passing in the fore finger to bottom of wound & then passing small pieces of sponge in until the wound is filled up - taking care not to leave patient until the sponge does not fill with blood - when important parts are implicated must be kept in until 3d day when about half the sponge must be removed - but the remainder should be left to come away by suppuration - In operations for stone, in one of a hemorrhagic diathesis, where the blood oozes out - take a cannula & wrapping it with lint conically insert it into the wound which must be kept thus by an assistant (not trusting to tying it) until suppuration takes place - The blood itself is often used to stop the bleeding, as from the nostrils, uterus & bladder - of refrigerants cold air is the best - Styptics creasote is the only good by promoting rapid coagulation - avoid solid styptics, for they act as foreign bodies - Actual Cautery used in capillary hemorrhage and always at a white heat - as at a red heat the eschar adheres to the iron & comes away, which of course makes it worse than useless - Suture of no use - Plugging is used when the artery is diseased, hard or soft - but must use a piece of wood, as it acts to all intents as a foreign body - but use Müllers invention, a string of vital tissue - In small vessels we must often resort to passing a needle through it & strangulate it gently - The needle acts as a support to the ligature & as a remora for the blood - In a wounded vein compression is the agent always to be employed when possible - but when this fails we must have recourse to the ligature, to which we must often have recourse when life is endangered from the hemorrhage, as in deep wounds in the neck - In the application of all ligatures slip the knot in tying to the one side of the line of the wound -
Quilled suture in wounds of peritoneum - Glovers suture (or over stitch) in wounds of intestine - There are then four kinds of suture used in wounds viz. Interrupted - Twisted, Quilled & Glovers suture -

COMPRESSION.

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

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

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

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

REFRIGERANTS.

*Cases to which they are applicable.*

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

STYPTICS AND ABSORBENTS.

*Cases to which they are applicable.*

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

CAUTERY AND CAUSTICS.

*Cases to which they are applicable.*

*Heat at which the cautery should be applied.*

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

SUTURE.

*Mode of application.*

*Cases to which it is applicable.*

PLUGGING.

*Cases to which it is applicable.*

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

SETON.

*Mode of application*, &c.

ACUPUNCTURE.

*Mode of application*, &c.

ELECTRO-PUNCTURE.

*Mode of application*, &c.

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

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

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

Manner of removing these bodies.

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

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

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

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

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

## LACERATED WOUNDS.

*Definition.*
*Causes.*
*Characteristics.*
*Prognosis.*
*Treatment.*—General indications.

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

## CONTUSED WOUNDS.

*Definition.*
*Causes.*
*Characteristics.*
*Prognosis.*
*Terminations.*
*Treatment.*—General indications.

1. When the contusion is complicated with a wound of the integuments, close the latter as soon as the hemorrhage (where it exists) is arrested, and foreign bodies removed.
2. Keep down inflammation by antiphlogistics, both local and general. Dress lightly, &c.
3. In severe contusions, it is often necessary, at first to *stimulate* the patient, but this should only be done when the prostration is great.
4. After the inflammation becomes chronic, or when the blood is not readily absorbed, use stimulating frictions, bandages, &c.

## PUNCTURED WOUNDS.

*Definition.*
*Causes.*
*Characteristics.*
*Prognosis.*
*Treatment.*—General indication.

Lacerated wounds are those that tear the parts torn into a shred - usually done by machinery - but little pain, owing to the nervous shock - little hemorrhage, also owing to the violence of the shock to the nervous system & the want of nervous influence to the arteries - If the bleeding is of any consequence first arrest it, by a tourniquet if convenient, then turn the attention to the ~~wound again~~ constitutional symptoms which are always seen in bad lacerated wounds. This attention should be the first thing - There are four chief causes of danger viz. of fever 2° tetanus especially if the weather be hot 3° Hemorrhage perhaps secondary 4° Hectic fever after the establishment of suppuration - Treatment - When, as is almost always the case, the skin is cold - pulse low - & all the signs of great prostration are present, we must get the patient up out of this state & the best thing is hot brandy & water - application of sinapisms, dry heat, don't use warm bath as it will only depress more, if he can't swallow inject the brandy & water - When we have brought about reaction, look to the local phenomena - arrest the hemorrhage - dress the wound with the water dressing, cold or warm according to circumstances. In case of torn wounds on the cranium, after having brought the edges together by sutures or plaster or both as circumstances may require - apply cold water in summer & warm in winter - When on the ~~wound~~ apply warm water dressings, as on the application of cold the patient is apt to have a chill followed by suppuration, the dressing regard the fulness of the patient - When symptoms of tetanus show themselves, the only remedy on which we can rely, is opium, combined with camphor & Calomel, and must be given until it produces its effects - don't regard the amount given, but only its effect upon the system - may combine counter irritation along the spine - and may try chloroform which lately (Nov 16th 1848) has been used with benefit in tetanus -

Contused - are those in which there is no wound of the skin, but may have the parts beneath ~~crushed~~ bruised to almost any extent - Made by application of force from a blunt body, as a spent cannon ball - Characteristics depend upon cause - We may have 1° simple bruises, 2° along with the contusion a wound of an artery, 3° part may be pulpified & the pulpified wound gives a crackling sound owing to the secretion of air, yielding on pressure - Prognosis - 3° rarely, mostly demands amputation, if to any great extent - Treat - if there are inflammatory symptoms must locally apply other local antiphlogistics as Tinct of Arnica -

Punctured wound is produced by a small & generally round body & partakes of a lacerated wound - differs from penetrating wound in being made by a small instrument & not penetrating any of the great cavities - Is a dangerous wound on account of the laceration of the nerves tendons & the danger arises from the great likelihood of tetanus - The indication is to convert the wound into an incised wound - Apply locally warm water dressing & the poultice, in short the soothing treatment - In these wounds there is inflammation & effusion of pus which burrows under the fascia making sinuses, the edges of wound are everted, flaps

Poisoned wound, is any solution of continuity into which there is introduced any specific virus - whether made by instruments, by stings of insects or by bites of animals - May be divided into two groups Constitutional & local - Constitutional are nervous excitement which is sometimes great, then vascular excitement delirium & fullness of pulse come on immediately after the infliction of the wound - Local depend upon the animal making the wound, change of color, pain & swelling - A mere scratch removing the epidermis is equally if not more dangerous than a punctured wound, or when the wound is of such a nature as to permit the blood to flow from the part - It is only necessary that the cuticle be abraded - Prognosis is invariably unfavorable - Treat. In sting of bees, pick out the stings & apply the Liquor Ammonia as the sting or poison is an acid - Salt & water, cold water - Snake bites cut out the part first placing a tight ligature above the wound to prevent absorption, apply suction, Argent. Nit. then a warm poultice - give brandy until patient becomes drunk. If he is vomiting give an emetic.

Rabies, The effects produced from the bite of a rabid animal, do not are visible about the fifth month, the period from time of the reception of injury until the manifestation of the constitutional disturbance is the period of incubation or Zymosis. Symptoms are great excitement of nervous system, tenderness and swelling of the wound - pain shooting up the limb, repugnance to liquids, - convulsions brought on by patient looking into a mirror or by the agitation of the air in the vicinity of the patient - these last two symptoms distinguish this disease from that protean disease Hysteria.
Treatment. Cut out the cicatrix & cauterize it with the Argent. Nit. Chloroform has been successfully applied for the cure of the spasm & cure of the disease (in a case attended by Prof. Dickson of University of Pennsylvania it was used and effected a complete cure, Nov 1846) Prof. Miller highly recommends it -

## PENETRATING WOUNDS.

*Definition.*
*Causes.*
*Characteristics.*
*Prognosis.*
*Treatment.*—General indications.

## POISONED WOUNDS.

*Definition.*
*Causes.*
*Characteristics.*
*Prognosis.*
*Treatment.*—Depends on the character of the cause.

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

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

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

## RABIES.

*Definition.*
*Causes.*
*Time of appearance after the reception of the injury.*
*Symptoms.*
*Pathology.*
*Prognosis.*
*Diagnosis.*
*Treatment.*

## GUN-SHOT WOUNDS.

*Definition.*
*Varieties.*
*Characteristics.*—Constitutional and local.
*Wind wounds.*—How produced.
*Gun-shot wounds usually contain foreign bodies.*
*Pathology of the wound.*
*Prognosis.*
*Treatment.*—Several indications. Modified by nature of wound.

1. 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 applications should first be tried, and if these fail to afford relief, apply warm or hot.
6. Guard against secondary hemorrhage.
7. Prevent the formation of pus.
8. Prevent inflammation if necessary by *antiphlogistics*.
9. Support the general health, if necessary after suppuration is established.
10. Heal sinuses.

Gun Shot wounds - any wound inflicted by fire arms is a gun shot wound - generally there is a shock given to the Constitution - but under great excitement as in battle, an individual may pass through the battle & not be conscious of the wound, not feel the pain though the wound may be serious. Wound of course depends upon size of the ball - It is black at the place of entrance & red at place of exit. The discoloration is owing to the contusion of the blood (effusion?) and not to the powder unless the gun was very close to the body & if powder may be easily washed off by water - Edges of wound of entrance are inverted, wound of exit everted & lacerated - which is explained by the law of bodies passing from a rare to a denser medium - If the wound be made with a slug or any irregular body the wound of entrance may be ragged as well as of exit such wounds are always more unfavorable - a round ball may often does become encysted - generally there is little pain & for the most part but little hemorrhage - If much pain be present, a large nerve has in all probability been wounded, & if much bleeding a large artery or vein has been wounded, which kind of vessel can be learned from seeing the blood - In cases where there is much internal hemorrhage, as indicated by signs of sinking - patient must be bled until signs of syncope supervene, cool air, position, quietude etc.
Grind wounds are produced by spent balls striking the part & crushing everything beneath leaving the skin intact, preserved by its great elasticity - When a ball passes beneath the skin a sad line shows the track - A ball is often turned from its course by any hard part or body - may pass entirely around the body & make its appearance at place of entrance - Prognosis more favorable if such wounds - becomes more complicated if bone is involved -
Treat - when shock & constitution has been great, always produce reaction before examining the wound, as soon as it has taken place examine - To examine the wound place the man as much as possible in the position in which he was when wound was received - If the wound be large enough use the finger as the probe if not large use a long silver probe & use it very gently - letting the probe find its own way - To extract the ball use the smallest forceps you can get - If the ball has not passed entirely through, but has lodged in the skin upon the opposite side cut it out - Never attempt to get it out by first incision in a wound when the ball has been broken up, but must wait for suppuration to put away the small particles - To relieve pain give opium, not regulating the quantity by the amount given but by the effects produced - in the extremities use cold water - or the tannic acid warm water or poultice - From 5th to 6th to the 12th day be careful to guard against secondary hemorrhage for this is often frightful - Don't let pus burrow - At first - use antiphlogistics - then support as the indications dictate - In wounds of shoulder & elbow joint amputate, except when the main artery is cut across & the collateral circulation fails - If wrist be wounded body cut it off -
In cases of wounds from small shot carefully pick them out with a pair of delicate forceps or a probe, if they be lodged beneath the skin - if lodged beneath the skin, don't attempt to cut them

out, but let them alone & they will slough out or become encysted & be of no inconvenience. If lodged in coma, pick it out if in the antrum or chamber cut it out - but if in position which alone and keep down inflammation - A wound from powder, such as blown into the face or behind out hand, are to be treated as ordinary burns - take a needle & pick out all the grains, as they will leave a black mark, then apply poultice or cold or warm water as the case may be -
When large ball fractures a cavity we may expect nervous shock - profuse hemorrhage and subsequent inflammation In gun shot wounds of extremities demanding amputation, always perform the primary amputation -

Neuralgia - Commonly called a growing pain, no trace of inflammation - patient usually tall, thin with a growing - treat - sun or cold bathing - good diet occurs in children from 5 to 14 years of age - apply unguent, belladonna from 10 to 20 grs to ½ oz lard, - increase if necessary, untile the peculiar tingling sensation is be

# SECOND DIVISION, OR DISEASES OF THE TISSUES.

## I. DISEASES OF THE BONES.

General Remarks.

Bones most liable to disease.

Causes of Disease.

Effects on Constitution.

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

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

First head, or non-malignant diseases.

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

Second head, or malignant diseases.

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

### *First Head.*

### I. NEURALGIA.

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

## II. ATROPHY OF BONE.

*Definition.*
*Varieties.*
*Causes.*—1, diseases of various kinds; 2, retardation of structural growth; 3, old age.
*Effect upon the strength of the bone.*
*Appearance of the bone.*
*Analysis of atrophied bone.*
*Treatment.*

## III. HYPERTROPHY.

*Definition.*
*Varieties.*
*Causes.*—1, exercise; 2, excessive nutrition in different bones; 3, inflammation; 4, degeneration of soft deposits upon bone, the result of periosteal inflammation.
*Effect upon the strength of the bone.*
*Symptoms.*
*Appearance of bone.*
*Treatment.*

## IV. OSTEITIS.

*Definition.*
*Question of its possible occurrence.*
*Varieties.*—1. Acute. 2. Chronic.
*Persons most liable.*
*Bones most frequently attacked.*
*Causes.*—1. Constitutional. 2. Local.
*Symptoms.*
*Diagnosis.*—May be confounded most readily with periostitis and endostitis.
*Prognosis.*
*Terminations.*—Resolution, atrophy, hypertrophy, suppuration, ulceration, mortification.
*Dissection.*
*Treatment.*—Depends on variety of inflammation, its intensity, and the bone attacked. The remedies required may be either general or local, or both combined.

## V. ABSCESS IN BONE.

*Location of matter.*
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

## VI. CARIES, OR ULCERATION IN BONE.

*Definition.*
*Confusion among authors as to its precise nature.*
*Bones most liable to be involved.*

Osteitis - Simple inflammation in bone, Bone is very liable to inflame & the liability is in direct proportion to the organization of the bone, hence we find the reticulated cancellated & cellular portion of a bone most liable. The younger the person the more liable to this disease. old persons not liable. Almost every disease of bone has some constitutional cause, we should, when called to a patient suspected of disease of bone, always look first to the Constitution, to see if there be any taint of scrofula, Syphilis &c
Local causes are any thing that will irritate the part.
Symptoms vary according to whether the disease be acute or chronic - Acute. Here look first to the Constitution, if this be impaired the inflammation will be acute, great vascular excitement, high fever, which is greater than in almost any other inflammation. Local symptoms - an aching pain, peculiar, constant worse always at night, when a bed pain somewhat increased by pressure, but the characteristic symptom is the excessive pain felt on jarring the part - limb at first not enlarged, but very hot to the feel.
Chronic - at first an uneasy sensation in the bone, patient able to go about & attend to business & increases slowly - the characteristic sign is always here as well as in acute &c. the great increase of pain upon jarring the part - more or less febrile irritation - if disease continue there will be a change, an enlargement & opening up of the tissue, which is speedily followed by the appearance of soft spots here & there upon the surface which indicate abscesses beneath - Apt to be confounded with periostitis, but in periostitis the first thing is swelling, which is not the case in osteitis - the pain is acute, lancinating (stitch) &c increased by pressure - Prognosis is in every case unfavorable, but much more so when the disease depends upon the Constitution. On dissection the cellular part is seen to contain pus - lining membrane red & inflamed - if membrane is merely stained by blood it will wash away - not so if inflamed -
Treat - If patient be strong & of good Constitution, bleed boldly, use the most active antiphlogistics, purging, diet &c Push up the antiphlogistic treatment, after the violence of the inflammation has been subdued, by antimonials - In acute, case put patient to bed, elevate the part, lead it, cold cloths & evaporating lotions &c &c - If patient be scrofulous, don't bleed, or you will injure him & increase the disease - look well at his Constitution, purge him, diet him, give antimony - use locally the same applications as above - but don't touch the part if can avoid it - allay pain by the compound powder - In these acute cases there is no time to modify the constitution - Chronic - We have time here to modify the Constitution - If scrofulous give iodine &c &c. If patient be consumptive send him to a warm climate & give iodine & a good diet - Local - not necessary to put patient to bed for by so doing we injure materially the Constitution while we cure the local disease - blister the part & dress it with iodine - if the bone swells & the periosteum is sound, divide the periosteum by subcutaneous section which gives great relief. (This is one of the greatest improvements in modern surgery) - If joint be involved use no passive motion - in short the indications are for the use of counter-irritation to the part & the constitutional remedies according to circumstances - and Constitutional remedies according to the peculiar diathesis -

Abscess - may be superficial or deep seated, if former there will be early swelling & puffiness & pain fixed - if latter there is not much swelling but a fixed pain that

mon learns the part & if the abscess be small, can always be found or indicated with point of the finger - we must get out the pus - If Chronic & even if nothing about he has still the fixed pain, when such must trephine the bone & apply a warm poultice or warm water dressing

Caries - is simply ulceration occurring in bone & is analogous in causes, phenomena & results to ulceration in soft part, consisting in softening & disintegration of the part entirely confined (as all diseases of bone are) to the animal portion of the bone - & confined mostly to highly organized & to the thick bones - If a child be brought to you with disease of bone about the joint, it is, in all probability Caries - Ulceration almost always results from Constitutional causes & the seat of the disease is determined in 9 cases out of ten by these same causes - They are three stages - 1st stage, one of simple inflammation - 2d if the bone be ulcerated, feels rough, & can be scraped off with pieces - 3d in this stage the parts often show a disposition to assume a healthy condition - the wound healing up, with the exception of a small part for 3 or 4 months & then breaking out again - or we may have exuberant pain, granulations, & edges of wound everted - the part becomes an indolent ulcer - Prognosis - rather favorable if in a long bone - if it involves a joint not so favorable - unfavorable when about important organs & when we are not able to remove the part -

Treat - In first stage antiphlogistics - Second Stage if the ulcer is inflamed & bleeds upon slight touch & is painful apply an emollient poultice, if it have flabby granulations & not painful stimulate with nitric acid either strong or diluted according to circumstances, this acid acts more as a stimulant than as a caustic - Sulphas Cupri & Argent. Nit. - we want something to dissolve the earthy matter of the bone & to stimulate the part - If ulceration occur in the wrist or ankle dont attempt to cut away the part, as not enough would be left to preserve the vitality of the remainder - Only one of these bones become diseased dont cut it away, as the inflammation will run through the whole joint by means of the synovial membrane - If the ulcer be superficial (in which there is roughness at the bottom) and the health of patient is suffering, lay open the ulcer & cut or scrape away, if it be a long bone, until you arrive at healthy fibre of the bone beneath, then bring back the flaps & treat so as to get union by first intention, if expedient - If thick or broad bone is involved trephine the bone & take away the diseased part & treat wound according to circumstances

Necrosis - is death of bone & includes that which precedes & succeeds thy process - The shaft of long bones become most liable, for when inflammation attacks the compact tissue there is not vitality enough in the part to resist the action to it does - hence inflammation is the most frequent cause - Sometimes the bone dies from the shock received, & in these cases there is no attempt at reparation.

In the separation we have the same process as in the soft parts - viz the dead part is surrounded by a zone of plasma & [illegible] granulation

*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 effect the bone primarily.

*Remarks in reference to the influence of the periosteum.*

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

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

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

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

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

*Cloacæ.*—How formed, shape, &c.

*Prognosis.*

*Diagnosis.*

*Treatment.*—General indications.

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

## VIII. MOLLITIES OSSIUM.

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

## IX. FRAGILITAS OSSIUM.

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

## X. RACHITIS.

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

The substitute bone is developed by periosteum for the most part but in the absence of this membrane is formed by the soft parts around, and is in every instance, rough the old bone, rough & shaggy round smooth round or oval foramina made by the pressure of the fungus from the internal surface of the bone, causing progressive absorption & are usually at the thinnest part of the bone, & are only found in internal necrosis. Prognosis - in every case grave, not as regards the life of the patient, but in regard to the part, which almost always must be sacrificed - In the first stage, it is the same as caries & ostitis. Treatment - We cannot hasten the separation of the old bone or the restoration of the new by any means in our power & can scarcely modify it by our treatment In all cases look first to the Constitution, see if there be any peculiar diathesis, & if so we must use our remedies accordingly & in all cases must improve the Constitution. Local. If we see dead bone at the bottom of a superficial ulcer, probe it thoroughly & see if it be detached & loose. If it be so, only held by the granulations cut those granulations with the knife and bring the dead bone away, but if the bone be not loosened, let it alone, for by detaching it would cause so much irritation as to give rise to inflammation & perhaps to the entire absorption of the new bone - In complete necrosis, in which the dead bone is entirely surrounded by new bone except perhaps the extremities see if it be detached & if not let it alone or inflammation will be excited - If loose take out the dead bone, & do so by enlarging the cloacae by cutting from one cloaca to another by the cutting forceps or a bistoury - bowed saw & extracting the dead bone, by pincers if too large to come easily through the opening - after the dead bone is taken away, treat the limb as for fracture, by splint, rest etc, for the new bone is soft & easily yield & bend upon pressure - If the necrosis be superficial there will be a depression in the bone which cannot be remedied & is caused by exfoliation of the bone. In complete necrosis there is restoration, in superficial none - Same treatment in internal as in complete necrosis -

Tubercle in bone (see page 33) is a deposit of tuberculous matter in bone & to be treated accordingly -

Aneurism, very much overlooked by surgeons - is the result of some mechanical injury to the bone and is always in the spongy part of the bone, then is swelling in the part, sometimes no pain & sometimes lancinating pain - swelling & pulsation early in the bony tumor & the tumor growing slowly - When the tumor increases it yields on compression & gives a positive pulsation, we have an aneurism - The pulsation is characteristic - When the tumor grows slowly, the is erectile tissue & the periosteum, instead of being softened & ulcerating, as in caries, is strengthened ~~& thickened~~ by cartilaginous or ossific deposit & is dilated to accommodate the tumor -

If the tumor be malignant the constitution will manifest, then will be no pulsation & it will occur without any manifest cause - No use to the main artery & no use to cut out the tumor & cauterize the part - in most cases must remove the limb - caused by obstruction in the collateral circulation - head of tibia most liable - in the first stage cannot be distinguished from osteitis

## XI. TUBERCLE IN BONE.

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

*Characteristics of first form, or encysted tubercle.*

*Effects on surrounding parts.*

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

*Process of reparation after softening of the tubercle.*

*Tubercular pouches.*

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

*Stages in the development and maturation of encysted tubercle.*

1. Semi-transparent gray granulations.
2. Crude, opaque, encysted tubercle.
3. Bony excavation, loss of substance in the bone.
4. Evacuation of the tubercular cavity.
5. Hypertrophy of the cyst, obliteration of the cavity, recovery, (Nelaton.)

*Characteristics of 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 sub-periosteal cellular tissue, and may be termed *external*, *periosteal*, or *peripheral*.

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

3. The *cartilaginous*.

4. The *ivory-like*.

5. *General Exostosis* involving the entire bone.

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

*Mode of development of the periosteal tumours.*
*Mode of development of the parenchymatous tumours.*
*Liability.*—Some bones more frequently attacked than others.
*Number of tumours.*
*Size of tumour.*
*Color of tumour.*
*Form of tumour.*
*Causes of disease.*
*Symptoms.*—Vary with the *cause*, *structure*, and *shape* of tumour, its *location*, and the *rapidity* with which it grows.
*Effects on adjacent parts.*
*Diagnosis.*
*Prognosis.*
*Terminations.*—1. Resolution. 2. Conversion into other tissues. 3. Necrosis. 4. Suppuration.
*Treatment.*—1. Medical. 2. Surgical.

## XIV. HYDATID ENCYSTED TUMOUR OF BONE.

*Definition.*
*Causes.*
*Part of the bone most liable to be attacked.*
*Effect upon the bone.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

Exostosis is (from ex-out of - ostosis-bone) a tumor composed of bony matter - it is usually developed from specific inflammation of periosteum which effuses plasma which becomes organized, converted into cartilage & then into bone - Internal caused in the same manner. The tumor is generally small this is almost characteristic - The color is the pink color of healthy bone, but may be black or greenish from the coloring matter of the blood or from some medicinal agent that has been used signifies nothing - Symptoms - If from constitutional causes growth is rapid & pain at night severe - if from local the pain is slight or no pain at all & the growth slow - The effects upon parts around arise from the effect of pressure & of course will vary greatly according to the situation of the tumor - Treatment - Is of course dependent upon constitutional agency, Cicuta, Blister & Iodine or Mercury as the case may be - If it depends upon local & does not give rise to any constitutional disturbance & no inconvenience or deformity results from it, it is good surgery to let it alone - but if it grows & is a deformity take it away entirely by saw or chisel & hammer - ~~Sometimes~~ cutting it in pieces with the saw & prying it off when the tumor is as large at the base as at the top & shaving it off, after dividing the integuments when it is polypoid in shape -

Osteo-Sarcoma, in the early stage is formed of a soft substance, albumen in a state of partial coagulation & the tumor consists of bony flesh. Depend almost entirely upon Constitutional taint, but sometimes upon a local cause, but the local cause operates modified in its action by the peculiar diathesis - All the bones are liable, but the lower & upper jaw, bones of pelvis - It is a disease mostly of mid-age - Symptoms - Acute sharp, lancinating pain in the part by fr swelling, ~~the swelling~~. Is developed in, not on the bone, & there is uniformity in the swelling from this cause & increases rapidly & hence from this cause is very severe - In the early stage the bone is smooth & hard - 2d Stage - The part ~~is~~ gives to the touch & between the fingers as ~~has~~ soft spots tubercular & from the commencement the patient presents the cancerous diathesis - Is larger than exostosis & osteoplastic tumors - Presents upon dissection in the early stage, the bone rarefied, cancellated & containing in the interstices a jelly like substance - after a time the appearance of boiled white of egg - The part loses its ~~vitality~~ & is of a livid hue - If patient has rheumatic pains & has a scirrhous tumor, if the tumor be removed, he will in all probability have a return of the disease - Treat. Amputate at a joint if possible as soon as the character of the tumor is known - Use Donovans solution (which ~~is~~ is the Liquor Arsenici et Hydrargyri Iodidi) for six months after the ulcer

## 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.*

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

*Bones most frequently attacked.*

*Age at which it generally occurs.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

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

## XVII. MEDULLARY SARCOMA.

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

## XVIII. FIBROUS SARCOMA.

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

## XIX. FUNGUS HEMATODES.

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

## XX. MELANOSIS.

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

## *Third Head.*

### XXI. WOUNDS OF BONE.

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

### XXII. FRACTURES IN GENERAL.

*Definition.*

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

(1.) The local predisposing causes are—

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

The general predisposing causes are—

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

(2.) The efficient causes of fracture are—

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

*Bones most liable to fracture.* Refer to statistical tables.

*Classification of fractures.*

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

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

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

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

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

*a*. Longitudinal displacement, or shortened fracture.
*b*. Lateral displacement, or displacement in the diameter of the bone.
*c*. Rotatory displacement, or displacement in the circumference of the bone.
*d*. Angular displacement, or displacement in the direction of the bone.
, Impacted fracture.

Wounds of Bone is a solution of continuity of the bone inflicted by some sharp instrument or by a bullet and of course are of every variety. Wounds of soft parts complicate & make the prognosis more unfavorable than in simple fracture & inflammation also makes the prognosis unfavorable. – The mode of union depends upon location somewhat – The callus is definitive from the first, 1st blood is poured out, which is formed into cartilage, then bone – A wound in a flat bone does not unite by bone but by a dense fibro-cartilage – If the bone should be cut through though as by an axe dont cut off the limb as it may unite, even if the ends of the bone are laid bare, stripped of the periosteum. Treatment dress the wound apply cold water dressing and the antiphlogistic treatment & guard against inflammation which in all probability will set in –

Fracture is a solution of continuity in bone in which the fibres are torn across & is made by force applied directly & indirectly – the clavicle is the most liable as it is the most superficial & most exposed, an account of its function which is to support the shoulder, being the key stone of the arch – next fore-arm &c &c. – diseased bones more liable to fracture & diathesis of the individual predisposes – such as Syphilis, Scrofula &c. & which must be cured before the bones will unite – Bones of old persons more liable to be broken as they are more brittle, containing a greater proportion of Phosphate of Lime than bones of young persons in which the animal matter predominates – Season exerts no influence – nor does sex any further than that males are more exposed to the causes than females – Muscular contraction amply sufficient to break any bone in the body – When bone is broken by force indirectly applied, it is much more readily united as the soft parts are scarcely, if at all implicated – An oblique more unfavorable than a transverse & a Longitudinal fracture most favorable & results mostly from gun-shot – In fractures of extremities there are those sets of muscles involved, the one connects with cardiac extremity – another with the distal fragment & one involved connects with both – Simple fracture when bone only is broken – Compound when the skin is opened &c. – Complicated when an important blood vessel or nerve is torn across – or a joint, or one of the great cavities involved – Comminuted when the bone is shattered & splintered –

Diagnosis – In Luxations there is a swelling or tumor in the vicinity of a joint – a depression where there should be a prominence & vice versa – limb is immovable – in fracture the swelling may be in any part of limb, the limb is very mobile – Bent Bone – the angle formed here is more obtuse than in fracture & when bone is placed in position will not remain there in fracture it will remain – In Sprains – ligaments are stretched and sometimes torn – no displacement, mostly singleness joint involved, Swelling of two kinds immediate owing to congestion & to escape perhaps of synovia – & Secondiate from effusion the swelling is uniform & no crepitus

Prognosis – unfavorable if (a) bone be large or in the vicinity of the great cavities – (b) if many & powerful muscles are attached to the ends of the bone – (c) if near a joint, as then is danger of inflammation attacking the joint. (d) if in vicinity of one of the great cavities as we will have not only the bone to treat but, but the injury inflicted upon the viscus containd therein – (e) if aged will have inflammation – (f) if oblique – (h) if in old – but favorable in young ~~as~~ they have an excess of animal matter (i) if patients have any taint of Constitution for we must get rid of Constitutional disease before the bone will unite – (j) if it occur in summer, as the heat adds to the excitement of the system & tends to produce inflammation – (k) if the lower extremity – for if in the upper the patient can walk about, take exercise & thus keep up his general health. (l) unfavorable – (n) if a luxation is also a complication as the force necessary to ~~be~~ reduce the luxation will in all probability produce inflammation –

Causes of displacement.

1. External violence, either direct or indirect.
2. Weight of the body in falling.
3. Weight of the limb.
4. Muscular contraction. Refer to Boyer's remarks on the influence of the different sets of muscles attached to the fragments. When the muscles are paralyzed by the blow, there is often no displacement of the fragments. Nor is displacement invariably present, even when the muscles retain their power. State the cause of this.

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

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

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

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

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

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

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

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

*Prognosis.*—Depends on 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.

*n*. The existence of a luxation along with the fracture.

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

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

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

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

1. The effusion of blood and lymph.

2. The absorption of serum and the coloring matter of the blood, the inspissation of the lymph, and the union of the soft parts.

3. The conversion of the lymph into cartilage, which forms a distinct *pin* in the cavity of the bone, and a *ring* around the seat of fracture.

4. Ossification of the cartilage in the spongy tissue of the bone.

5. Ossification of the cartilage between the compact portion of the fragments.

6. The removal of the provisional callus, and the restoration of the cavity of the bone.

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

*Agents concerned in the formation of callus.*

1. The periosteum. Not essential, though highly important in the formation of bone.

2. The vessels of the adjacent soft parts.

3. The bone itself.

4. The internal periosteum.

5. The absorbents which remove provisional callus and model the bone.

*Mode of union in flat bones.*

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

*Treatment.*—General indications.

1. The mode of moving patients in severe fractures from the spot at which the injury occurred, is a matter well deserving the attention of the surgeon.

2. As there is usually displacement of the fragments, "*reduction*" or setting will be required. This may be effected by *extension*, *counter-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. Value of myodiatomy in these cases discussed.

3. To prevent a 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*, *favorable position*, *bandages*, *compresses*, *cushions*, and *various apparatus* or *dressings*.

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

Provisional Callus, is formed thus, blood is poured out in large quantity - serum & corpuscles matter is absorbed & the plasma alone remains - this becomes organized, turns to cartilage & in which an deposited the puncta ossificationis, which will take place in three or four weeks - In 7 or 8 months the definitive callus - In wound of broad bones or in connection with joints, there is no provisional callus formed - If the bone be broken through nutritious foramen, the application of the will be made than the bone, in consequence of sufficient nourishment - Bone is stronger than before when nature is made to take up the provisional callus, & in ordinary cases the bone is as strong as ever.

Treatment - after the fracture, be very careful in moving the patient taking great care to rub the broken bones from being moved - it should be placed on a broad board or a door & in this manner raised on the bed. Extension & counter extension should be made in opposites & should be equal and should be made slowly as thus the tendency of the muscles will be overcome - should be made in line of displacement - as a general rule put the extending band upon inferior extremity of broken bone - If the muscles be rigidly contracted & the man be strong & vigorous bleed him to syncope - if a female or a delicate person double bandage in two as the callus will not be formed, but give other opium, apply cold lotions to the part - If end of the bone in a compound fracture, be driven into the muscle, divide the fibres of the muscle by the knife - in a simple fracture wait three or four hours until we see if it will not become disentangled, if so not do divide the fibres subcutaneously - when the ends of bone become impacted immovably must saw off the bone -

One of the most important parts in the treatment is the application of the bandage or roller - This should be made of common muslin with glazing washed off & should be of one entire piece - with no selvage or loose threads -

The only complex bandage now used is the bandage of

Scultetus or of simple is used only as a second-
ary bandage - Splint should be padded with bran -
and should be of well seasoned wood - Spasm often
relieved by change of position, & application of cold -
If not by these means give opium - (9) As soon as
an abscess is formed open it. (10) After 4 or 5 weeks ca-
take off fracture box & put on tin splint or the
starch bandage so as to permit the patient to move
about. We must recollect & always tell the patient
that his joints in the limb will be stiff, but can be
overcome - The great objections to the starch or
dextrine bandage when used as a primary application
to the limb are, the difficulty of removing it when
it becomes loose as it will upon subsidence of
the swelling, & prevents inspection of the part. It
may be used in cases of emergency as at sea
in a storm, or on the field of battle & as a good
dressing as a secondary bandage -

Compound Fracture - a bone broken with wound
of the integument -
In civil practice dont amputate during the
fever - if not able to amputate before the accession
of fever, must get it down before operating -
But in military practice amputate even if
there is fever, it is better to operate at once than
to wait -
In a simple compound fracture, in which the
skin is only as it were cut, place the limb
in a fracture box upon a pillow over which
is spread a piece of oil silk - if you have

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

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

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

11. After callus is formed, the parts, especially the joints, remain rigid. The indication here is to relax 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 "*immovable apparatus*."

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

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

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

*Review of these different methods.*

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

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

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

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

blood & place it upon the wound & when dry apply the latin dressing – If a bad lacerated wound, place limb in a fracture box & use the bran dressing, which is by filling the box half full of bran & laying the limb in it (the bran) & then pour on the bran until the limb is covered – This will keep the parts sufficiently steady as it by the discharge becomes moist & swells & thus makes compression, keeps down swelling & by keeping the blood-vessels partially empty wards off inflammation If a week after first dressing we find the plaster raised up & part soft, then is pus which must be evacuated, cut it out & let it remain the bran – To take away the bran, dont cut the limb but turn down the sides of the box one first & take away the old bran replacing it with new, & the other side in the same manner Suppuration almost always in compound fracture & must be let out as soon as formed or it will cause false joint by prevention of formation of callus – In these fractures if mortification sets in amputate as soon as possible & dont wait for line of demarcation as it is traumatic mortification – Carefully pick away the loose pieces of bone only – If they be not loose detached move the part to its proper shape & let them remain

Irregular Callus, results from the parts being allowed to move about, which prevents it forming into the proper shape & forms irregularly. If the function of the part is not interfered with, dont operate no matter how great the deformity - irregular union in the forearm let alone in all cases. If united firmly, as to cut down & break or saw through this bone in such a case is one of the most hazardous operations in surgery & not warrantable. If called to a case deformity after frac-

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

## COMPLICATED FRACTURE.

*Definition.*

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

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

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

*Treatment.*—Varies with the complication.

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

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

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

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

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

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

7. When mortification takes place amputate.

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

## IRREGULAR CALLUS, OR FRACTURE UNITING WITH DEFORMITY.

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

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

1. The duration of the injury. The longer more unfavorable

2 The degree of functional injury resulting from the deformity.

3. The practicability of relieving the deformity without endangering the life of the patient.

4. The size and location of the injury.

5. The age of the patient.

6. The health of the patient.

7. The season of the year.

8. The existence or not of disease of the soft parts or of the bone itself.

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

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

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

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

*Cases to which it is applicable.*

*Dangers of this operation.*

*Preparation of the patient.*

*Mode of rupturing the callus.*

*After treatment.*

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

*Dangers of this operation.*

*Preparation of the patient.*

*Mode of performing the operation.*

*After treatment.*

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

## PSEUDARTHROSIS, FALSE JOINT, OR NON-UNION.

*Definition.*

*Frequency of the defect.*

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

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

time within forty or fifty days after fracture
before the Callus has become hardened, the indi-
cation is to break up the Callus which can easily
be done - If in the fore arm, grasp the elbow with one hand
& the lower part of the fore arm with the other thrust it
this will break up the adhesions - If the deformity
be angular place the limb on a firm splint & apply
a bandage, gradually tightening it so as to bring
the limb to the splint - So also with the leg - The
most unpromising cases can often be overcome
in this way - The seton is of no use, for if it
fail to excite inflammation it only makes
it worse - The preparatory treatment, of applying
to the limb emollient applications &c &c. is of
no manner of use, & instead softening the bone
makes it harder & injures the soft parts - The
bone to be broken over again only when pressure
fails - If after 4 or 5 months all our measures fail
to remove the deformity - the bones must be
resected, that is by laying open the skin & soft
parts, cut down upon the bone & if misplaced cut
them asunder, or if not, cut off the ends of the
bones so as to excite a new action & place the
parts in splint or fracture box & treat for com-
pound fracture - If as is sometimes the case
the callus by being disturbed, does not form
properly, but shoots out spiculae of bone & these
bone spiculae irritate the surrounding parts we
must cut down upon them & cut them away
by with the bone forceps or saw or knife as can may be
False Joint is the non-union of the ends of the
bone, on account of which there is motion
allowed, the part becoming entirely useless

is generally the result of not keeping the parts perfectly at rest - If motion or use of the limb is allowed the callus is very liable to be absorbed The ends are tipped with cartilage which secrets a kind of synovia & in time even a kind of capsular ligament is formed - The parts can be moved in any direction often is no crepitus - Be cautious in giving a favorable prognosis -

Treat- The indication is to excite the parts so that they will throw out plasma which will pass through the usual steps to assification - The Seton is one of the very best remedies & should always be employed when possible - It causes excitement in the surrounding parts, the cartilage to be taken up - must be worn for four or five months. In applying it must take care not an artery be transfixed in its passage - if in the arm pass it from before backward, if not thus from side to side, from within, out, put the arm in a coarse splint & bind the fore arm over the chest. The metallic ligature of Sonyne is a metallic wire inserted into the ends of the bone & then by twisting this wire to bring ends of fragments together. It is wholly useless (17) A small hole is drilled in the end of each fragment previously laid bare & an iron pin inserted, the soft parts are then brought together with the other ends of pins left out, they by the irritation which they set up, cause the effusion of plasma - If the patient refuses to submit to any of the above remedial means, much may yet be done in way of palliation, - place the limb in a metallic shield, or any molding shield, accurately fitting the part & binding it thereto -

*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 of the periosteum.
*i.* Want of cellular tissue.

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Object of treatment.*

*Treatment.*—Various methods have been introduced.

1. Simply keeping the parts in splints for several months.
2. Friction.
3. Compression.
4. The application of caustic alkali to the integuments over the seat of fracture.
5. The introduction of a heated canula between the bones. Proposed by Mayor.
6. The seton—proposed by Dr. Physick. Modification of this agent by Rhynd.
7. Escharotics applied to the ends of the 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.
13. Blisters.
14. The use of iodine or mercury.
15. The metallic ligature of Sommé.
16. The actual cautery. Employed by Kirkbride and others.
17. The introduction of ivory pegs—(Dieffenbach.)

## DIASTASIS OR SEPARATION OF EPIPHYSES.

*Definition.*

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

*Causes.*—Violence or muscular contraction.

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

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

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

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

---

## PARTICULAR FRACTURES.

### I. NASAL BONES.

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

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

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

### II. MALAR BONES.

*Liability.*—This accident is very rare.
*Causes.*
*Varieties.*
*Complications.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### III. SUPERIOR MAXILLARY BONES.

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

Nasal Bones – are liable from their exposed situation & hardness, & are protected by their arched form – In fractures of these bones, the swelling is oftimes great & rapid, preventing the proper diagnosis, & results chiefly from emphysema & sometimes from effusion of blood. in such cases must treat for fracture, taking great care how we make our prognosis – Treatment – The chief difficulty are pain which is often severe & displacement – If fracture be simple, keep patient at rest, apply cold lotions & if necessary bleed give opiates for the pain – The hemorrhage is often profuse which if not stopped by the cold lotions, the nostrils must be plugged with lint – Depressed fragments – to set these, take a gum elastic or strong probe & pry up the fragments – the swelling will keep them steady – If there be emphysema dont open the integuments near the seat of injury. but puncture here & there with a needle & press the air out & apply a cold cloth – In compound frac. if the small pieces are loose remove them. if not readily they part to their proper shape – If the nasal lamella of the ethmoid bone be forced up, draw it gently down with the forceps

Malar Bone – It has been said that there is no displacement in fractures of this bone – but there is – Prognosis mostly favorable – tie up the lower jaw if there be no displacement & apply cold lotions – if there be displacement, must apply a graduated compress & a bandage or adhesive plaster

Superior Maxillary – Mostly caused by the Dentist in extracting teeth – is usually hammered – to discover the kind of fracture pass your finger in between the cheek & bone & press upon the bone – It is a serious fracture, from its complications. As inflammation is likely to attack the antrum or orbit, causing a serious case – if a simple transverse fracture of the antrum sound, put the parts together, bring the lower jaw up against the upper which thus serves as a splint. Such patient must rest at rest & ward off inflammation – If comminuted, turn aside the soft parts & pick away the loose fragments, bring the lower jaw up as before & institute at once a vigorous antiphlogistic treatment –

Inferior Maxillary. Very liable from its exposed situation & in every part & generally from force directly applied, but may be broken by muscular contraction. Diastasis or separation at the symphysis menti can only occur in young subjects, mostly have ossific union, but may have false union & union by cartilage - difficult to keep fragments in position, from contraction of antagonist muscles, the masseter drawing the posterior fragment up & the muscles inserted upon the chin & forepart drawing the anterior fragment down - The pain is often very severe from injury to the dental nerve - the hemorrhage often profuse from injury to the dental artery - When condyle is broken there is swelling below zygoma & in front of the ear & behind this a preternatural depression - upper fragment dragged by the pterygoideus externus, lower kept in situ, no crepitus except when parts are brought in apposition - loss of voluntary motion. Treat in ramus & coronoid apply a piece of the shell-lac cloth, first warmed & fitted accurately to the chin & then allowed to cool, padded & applied to the chin & kept there by Barton's bandage beginning at the lower part of occiput crossing the last parietal bone just above the ear, across the frontal bone, down over the temporal region in front of right ear, under the chin, embracing it, then up in front of left ear, across the right parietal bone around the occiput to place of departure &c. In condyloid fracture, apply a graduated compress behind posterior fragment & same bandage as above.

Os Hyoides - Broken by grasping the throat & by strong pressure in any manner applied - recognized by passing the finger along the tongue into the glottis, but it is often very difficult to detect this fracture, on account of the great swelling - if there be time apply ice bladder - if not time on account of danger of patient suffocating, pass finger into glottis & press out the fragments, but it often very difficult & sometimes impossible to do this - must then take an awl or like instrument & inserting it under the frag - pry them up - if we cannot do this & patient has great difficulty of breathing open the trachea at once & then we have more time to determine what should be done - Employ active antiphlogistics from the commencement.

Thyroid Cartilage - Same remarks apply here as to the Os Hyoides.

Sternum - Broken by force directly applied - May have simple transverse, both tables broken across or only one - and oblique & longitudinal fracture - If the fragments be driven in may have great dyspnea & expectoration also - when external table alone is driven in, respiration is perfectly free & no crepitus or displacement - Treat The great indication is to remove the dyspnea & the treatment turns upon this point - If in transverse fracture, the respiration is difficult, must bring the parts together, place patient across the back of a chair & the pressure upon the abdominal muscles is often sufficient to cause them to draw the lower frag down & out into its proper position - If not accomplished by this means insert a tenaculum upon upper end face of the rib on each side of part below fracture & an assistant taking hold with his fingers the under surface of the rib attached to lower part of upper frag - let extension & counter extension be made - if not by these means insert a tenaculum very carefully upon inner surface of the lower frag on either side & draw it out - When no inconvenience is felt in any way let it alone - apply a bandage around the chest.

## 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.

*Liability.*
*Ribs most frequently broken.*
*Parts of the bone most liable to fracture.*
*Causes.*—External violence. Muscular contraction, as in coughing.
*Varieties.*

*Complications.*—Hemoptysis, emphysema, pleuritis, empyema.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## IX. CLAVICLE.

*Liability.*—Its *shape*, *size*, *texture*, *exposed situation*, and *function*, render this bone 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. (Earle.)
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—Various dressings employed to carry out the *three indications* of Dessault. 1. Desault's bandage. 2. Boyer's bandage. 3. Mayor's handkerchiefs. 4. Fox's apparatus. 5. Brown's bandage. 6. Dr. Reynell Coates' bandage. 7. Hiester's dressing. 8. Sir A. Cooper's.

## X. SCAPULA.

*Liability.*—Its site and mobility protect it in a great measure from fracture.
*Parts most liable to fracture.*—1. Acromion process. 2. Inferior angle. 3. Body of the bone. 4. The coracoid process. 5. The spine. 6. The neck.
*Causes.*
*Varieties.*
*Complications.*
*Symptoms.*—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.*

Ribs - Broken generally by force directly applied - if force be applied to extremities of ribs the fragments are driven out if directly upon body of rib are driven in - the lower ribs are most liable to be broken - Symptoms Often great from rupture of intercostal artery - cut it across & it will generally stop - if not insert a piece of cloth so as to form a pouch & then into this pouch put a piece of lint & then pull the cloth as if you were about to pull it out, it will thus form a very efficient compress - to get out this pouch unfold the cloth to let out the lint with forceps or finger & then draw out the cloth - To make out the diagnosis, make patient cough & bend the head & you can usually hear the crepitus - but cannot hear crepitus if fracture be in the posterior extremity on account of the muscles that cover it - Treat the simple fracture with sound lung - bind the chest with the roller, one thing patient breathe diaphragmatically - bind & firm an immovable - If lung be diseased keep pressure by strips of adhesive plaster if not thus - take a piece of wet pasteboard & mold it on the part - dry it & bind it on the part - Complications must treat by themselves already laid down.

The best bandage is the simple handkerchief bandage with a compress under the axilla - Or a simple sling with a compress under the axilla - This bandage was introduced into surgery by Dr. Fox of Philadelphia called the bandage of Dr Fox or hospital bandage - The thin roller-bandage of Delpech is not to be used on the score of indelicacy in females - constricts the chest & impedes respiration - & requires constant attention to keep it in order - (Dr Gibson of University known this Dec 15/1845 from experience)

Scapula - Acromion process broken - first symptoms preternatural flattening - a preternatural fissure - & subsidence of the arm - Liable to be confounded with partial luxation of the humerus - Prognosis - May have a weak shoulder for life - hard to get bony union owing to want of blood and cellular tissue - Treatment - Put a slip of adhesive plaster across the shoulder in order keep the fragments in situ - Support the arm in a sling - The indication is to relax the deltoid muscle and this is best done by placing a pad under the elbow in order to raise it up - Coracoid process - indication is relax the coraco-brachialis & the short head of biceps, which is best done by placing the hand over the shoulder of sound side, thus bringing the arm inwards and upwards - apply a handkerchief to keep the arm in situ, & a compress below the seat of injury - The inferior angle of scapula if broken is never displaced, as it cannot be since the latissimus major is connected to the serratus magnus anticus - but there may be displacement when in the body of scapula -

Use splints padded - bind the arm from fingers to upper part of the arm (leaving thumb out) with a common roller, then apply the padded splints, the inner one short and straight - the outer one a right angle - Be careful and preserve the elbow joint - from anchylosis, which may be done by using splints of different angles, increasing & then decreasing the angle -

Head of Humerus - rarely broken by force directly applied - impacted fracture of the head often by falling - This fracture is often very difficult to distinguish from - Unimpacted fracture produced by falling on the elbow, indicated by slight shortening of humerus, lancinating pain, absence of voluntary motion - Treat as obscure case as one of positive fracture - May open the joint & cut away the spicular of bone if necessary -

Anatomical Neck – Nearly same as for the head Separation of the whole head of humerus, common in children, by force applied so as to twist it off – There is no deformity of the shoulder – just below the coracoid process there is a decided prominence round and smooth – Slight shortening – rotundity – Prognosis unfavorable – Dressing – Apply splints in the same manner as in fractures of surgical neck –

Surgical Neck – Lower fragment drawn upwards and inwards – Shortening of the arm – fullness of the shoulder – Dressing – Angular splint padded, and 3 short splints with angles at the upper end cut off – apply a roller about two inches broad commencing with the hand, put on first splint & roll bandage on it for a short distance – apply cotton wadding on this above fracture, apply short splints & then another roller to make all secure – Put the arm in a short sling – About the 10th or 12th day it may be dressed. Move the joint at the elbow slightly on the 10th or 14th day to prevent Anchylosis –

Shaft – same as surgical neck,

Centre – Same as above –

Shaft above Condyles (Page 48) – By force directly applied or by muscular exertion – deformity same as fracture – Put the arm at the elbow joint on the knee & move it upwards & inwards – Treatment – Put a roller on the arm padded well & cotton at the condyles – then two angular splints & a roller leaving the elbow bare – After 20 days remove the dressings and establish passive motion, then reapply the Physics dressing viz – first rectangular splints – about the 10th or 12th day an angle more obtuse so as to make the arm is brought straight & then bring the arm as gradually back again to the rectangular position –
In compound fracture of humerus & elbow joint use a gutter splint & the usual dressing –

Bones of the Forearm – (page 48) – Both bones liable to be broken – force directly applied in which case there is considerable laceration – or by counter stroke in which the laceration is not so great – Radius most liable to be broken from its connexion with the wrist – Fractures of head of radius rare – produced by falls on heel of the hand – if ancient there be swelling and crepitus – not so if of some standing –

Neck of Radius – By falls on the hand or by excessive pronation or supination – Place fore arm in a state of flexion, rotate hand & the whole shaft & crepitus will be evident – the upper fragment will remain stationary – Treatment – Angular splint well padded applied to the whole arm then a roller over this – hand kept supine & two splints –

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

ANATOMICAL NECK.

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

SURGICAL NECK.

*Liability.* Lower fragment rotates outwards -
*Causes.*
*Variety.*
*Signs.*
*Diagnosis.* arm slightly turned outwards loss of motion
*Prognosis.* amputation -
*Treatment.* favorable -
In any case of fract. of humerus, myotasis
a retentive splint - in order to keep fore arm steady -

SEPARATION OF THE EPIPHYSES.

*Liability.* fracture condyles, intracapsular swelling in
*Causes.* that a small hand tumor - use
*Variety.* Ex. 1 counter Ex. 2 rotation 3 put on a
*Signs.* roller from hand up as high as
*Diagnosis.* possible 4 put on an angular splint
*Prognosis.*
*Treatment.* characteristic mark - arm turned to
one side by the other 2 swelling -

SHAFT ABOVE INSERTION OF DELTOID.

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

SHAFT AT ITS MIDDLE.

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

SHAFT ABOVE CONDYLES.

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

CONDYLES.

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

## XII. BONES OF THE FORE-ARM.

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

*Bones involved.*—One or both may be broken. The radius is most liable, from its 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.*

Hand & carpal bones coming between the fracture of voluntary motion -
Various Fractures of the Radius - Inferior extremity of the radius slabbed off with upper fragment pulled upwards a lump on back of the wrist with a depression immediately beneath - by the finger & thumb of the hand, one above and one below. Over these two splints - make ex. & counter ex. until the hands become movable by fingers
Fractures just above the wrist two cylindrical compresses

Shaft - Fracture by muscular action falls from power of elbow
Olecranon Process - Loss of motion, flatness of elbow &c prognosis frequently unfavorable owing to the difficulty of procuring bony union & the difficulty of keeping parts in contact - Extend the fore arm always *
Shaft - dressing same as in fracture of both bones two graduated compresses & posterior splint upon the interossei

* when roller has reached elbow detach the skin which is now very loose, place pad in opposition, take a turn above & below the angle & bring the two ends of the roller across & then a splint well padded upon upper part of the arm, (the hand being supine

Use Splints - ~~at the~~ angular (A) as in the arm, Apply the splint directly to the parts not using the roller as in the arm - Be careful of Anchylosis of the joints and of the bony union between the two bones of the fore arm -
* Dressing consists of two rollers & Splint - commence roller at the hand, then apply splint well padded & then the other roller, having padded the elbow to prevent sores - At the 3d or 4th week apply the angular splint and use passive motion - very slight -
Coronoid Process, produced by muscular contraction only force directly applied - Loss of voluntary motion - tumor in front - shortening of fore arm - flexed, motion during arm - fore & thumb of hand & apply the angular splint at a very acute angle over this put a few turns of the roller - Shaft & extremities treatment almost the same - When both bones are broken use one angular & one straight splint - About the 4th or 5th week commence passive motion, which is the great secret in the treatment of these fractures.
Carpal Bones - Broken by force directly applied - Be on the watch for inflamation & caries - put on wet and cold dressings & institute the antiphlogistic treatment.
Metacarpal - By force directly applied - known by a ridge on back of the hand - or in the palm of the hand - as the force is applied on the palm or back of the hand - Treat - Apply a splint well padded, cold water dressing. *
Phalanges - Set the fracture, then envelope the finger in a spiral bandage, then two splints one on back & one on front extending up to wrist - Sometimes lateral splints are necessary - in compound fracture make a sort of trough of hatters felt for the finger - or a small roller saturated with starch & three splints & plaster all with starch

* when the palm is wounded & swollen from blood, blackwash & dressings - if lacerated compress radial & ulnar arteries & bandage if necessary - don't take out clot until it becomes soft - [illegible] very gives nutrition -

Fractures of Sacrum – From the size and position of this bone it is rarely fractured, when it is so, it is by direct force. Symptoms – Patient with thighs flexed on pelvis & abdomen, lying in one position – cant move without extreme pain, loss of voluntary motion in lower extremities – paralysis of bladder and rectum – and loss of sensibility, so that patient may not have passed urine for two or three days and yet not complain of distention of the bladder – Prognosis – if a healthy patient &c &c. favorable, but if fracture be displaced, likely to inflame and ulcerate then unfavorable – Treatment – Impossible to reduce the fracture – Keep the fragments at rest & do this by tying a broad bandage around the pelvis, tying the thighs & legs together firmly – have the thighs drawn up – change the patients position frequently – Institute the antiphlogistic regimen – Draw off the patients urine 2 or 3 times per day for he may not complain of distention or of its disturbing him – Evacuate the intestines by injections – Break up the fecal matters with the handle of a spoon if hard and impacted – Carefully open any abcess that may form –

Os Coccygis – Not so liable to fracture as sacrum – always the result of force directly applied – more frequent in women than in men – occasionally fractured in parturition – Introduce one finger into the rectum seize the bone, move it backwards and forwards, great pain in the thighs – Treatment – Tie thighs legs & pelvis together – Cant reduce it in the male, if in the female try to reduce it when it is inwards, as it may afterwards be the consequence when she becomes pregnant – Keep the fragments stationary by the hand of an assistant for twelve hours while the fragments become fixed –

Os Femur – Head broken by force directly applied and sometimes by counter stroke – Simple fracture, intense pain on moving the thigh – put ear to trochanter and rotate the thigh if fracture you will have crepitus – loss of voluntary motion – Compound or comminuted dilate the wound & take away the spicula of bone – In interstitial absorption, which frequently occurs, you will have shortening of the limb which cannot be remedied –

Neck – This fracture is peculiar to aged people – women more liable to it than men because the angle which the neck makes with the shaft is greater in them than in men & owing to the greater width of the pelvis – very slight causes produce, such as falls from off the feet, twisting the foot in bed &c – Symptoms – Shortening of the limb – eversion of the foot – absence of crepitation when limb is shortened & its presence when the limb is pulled down – crepitation is the only sure diagnostic – In an obscure case treat as if fracture – Prognosis is always unfavorable – may get well but with a shortened limb – we rarely have bony union on account of want of blood effusion of synovia &c &c. sometimes however the fragments may unite, but very rarely – Treatment is limited to mostly to keeping the patient comfortable – put him in bed & supports both hips – Keep him there or four weeks in bed – then move him and give him crutches – in eight or ten months he may throw them away – with a high heel shoe & a cane –

Neck without the capsular ligament or partly within and partly without – By force directly applied, rarely by slight force & not by counter stroke – May occur at any age – Symptoms – loss of voluntary motion – pain – slight shortening of the limb – pain increased by motion in the joint – Prognosis favorable – will unite by bone – Treatment – Same apparatus as for shaft of bone or Dessaus – In all bruises & injuries about the hip joint treat as if partial fracture [illegible]

See back to page 48

FRACTURE OF ULNA ALONE.

*Liability.*
*Causes.*
*Variety.*
*Parts usually broken.*—Shaft, extremities, coronoid process, olecranon process.
*Signs of each.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## XIII. CARPAL BONES.

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

## XIV. METACARPAL BONES.

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

## XV. PHALANGEAL BONES.

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

## XVI. SACRUM.

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

## XVII. OS COCCYGIS.

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

## XVIII. OS INNOMINATUM.

*Liability.*
*Causes.*
*Situation of fracture.*
*Varieties.*
*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.

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

### FRACTURE OF THE CERVIX WITHIN THE CAPSULAR LIGAMENT.

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

being so obscure - Trochanters (page 51) - produced by direct force or by muscular contraction, Symptoms - loss of voluntary motion - tumor on the dorsum ilii - Treatment Bring the fragments together - flex the thigh on pelvis - put a strong bandage around the pelvis - Prognosis unfavorable - Shaft just below trochanters - hard to keep the upper fragment straight - as the shaft is drawn crooked by psoas magnus & the iliacus internus - Treatment - apply Coopers double inclined plane - tie a strong handkerchief around the thigh to keep the prominence of bone stationary - keep patient two or three weeks so & then use Dessaut's apparatus - the great secret is to keep the upper fragment perfectly stationary -

Shaft - The usual symptoms as loss of motion pain &c - Treatment same - Use the double inclined plane - French made to keep the limb extended - Objection to double inclined plane, counter extension being movable - the pelvis moving about - but a good apparatus after about the 3d or 4th week - Prof Mütter decidedly prefers the extended position - Objections to Wassalsons apparatus - 1st - The patient is completely confined & thereby made very uncomfortable - 2d he has no use of the sound limb - 3d Not counter extension is made by the acetabulum of the sound side, consequently extension & counter extension are not made in the same right line (This instrument is modified by Dr Gibson) The best apparatus that ever was invented, according to Prof Mütter was Dessaut's, - For treatment of this fracture you must have a low & narrow bed - never put a patient on a soft and corded bed, but on one whose bottom is made of slips of wood upon which is placed a mattress or at least a substitute, - have your bed so fixed with a hole in it that the patient may evacuate his bowels without moving - or else a separate apparatus made expressly for this purpose - A long splint a short and several small ones - Splint cloth - hut piece & a transverse bandage around the pelvis holding the long splint to its place - Keep the patient in this apparatus for at least five weeks, then use the double inclined plane or starch bandage - He should not use his limb for from six to twelve weeks - may not become well cured for from six to twelve months -

Condyles - Here there is great danger of inflamation, Symptoms crepitus, pain &c - Take a broad flat splint, well padded and with a hole for the heel, attach limb & splint with rollers - then proceed with the most active antiphlogistic treatment - Keep the limb elevated - About the end of 3 weeks commence passive motion, gently at first - Should be in splint six or seven weeks - Limb should be kept on a simple inclined plane - Begin with a roller from toe to thigh making firm lateral Compression at the joint - Splint put on back of limb & keep limb at an angle of about 40° or 45° -

when longitudinal & comminuted -

Patella (page 2) By force directly applied or by muscular contraction when the limb has been broken. In transverse fracture we scarcely ever have bony union, because we have not blood enough, because it is difficult to keep the fragments in apposition, may be mistaken for a bruise. Symptoms - same above the knee - loss of voluntary motion, pain, crepitation - Take hold of it & move it about, flotation - Fracture - relax the muscles by extending leg on thigh & thigh on pelvis - Commence with a roller at the toes carry it up the leg until you reach the knee, prevent folding of the skin by smoothing with the hand - carry the roller up the thigh & put on the adhesive strips - Counteract the muscles - then fasten by firmly to splint by roller - Keep the leg in an elevated position - Keep patient thus for five or six weeks, then establish passive motion, then put a roller or knee cap - if the patella be shot away or crushed to pieces bring the edges of the wound together & institute the antiphlogistic treatment - use water dressings - Patient may get well with a stiff knee. Anchylosis is the cure, of course then omit the passive motion, after fracture it is best to protect the knee by a cap, steadying the cap & keeping down inflamation

Bones of leg - Solution of continuity of one or both bones may occur - By direct force - In gunshot wounds - Tibia may be broken alone, or by blow of a cane, If one bone alone be broken the prognosis is more favorable, if both not so favorable - upper third of tibia mostly unfavorable, will have a stiff joint - Treatment - common fracture, boy long enough to reach to the thigh - put a pillow in it & over this with oiled silk, tie the whole apparatus by tapes with two or more tapes - put a piece of tin or pasteboard between the foot & footboard & be careful that the toe does not project above the footboard - If inflamation takes place better take off this dressing & put on the ordinary strips - Inferior extremity of tibia use the same apparatus when there is no shortening -

Fibula - Run the finger along the bone & there will be a yielding on pressure, pain, - Same apparatus when there is no displacement of tibia sound, the starch bandage may be put on about the end of first week -

Inferior third of fibula, generally more or less displacement of astragalus -

Both bones - limb shortened - same apparatus frequently - Also Dessau's apparatus for the thigh - Hutchisons apparatus is altogether disapproved by Prof. Mütter because in it we have no firm point for counter extension - tapes used are liable to cause swelling - Dessaus apparatus for the thigh is the best.

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

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

## FRACTURE OF THE TROCHANTERS.

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

## FRACTURE OF THE SHAFT JUST BELOW TROCHANTERS.

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

## FRACTURE OF THE SHAFT.

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

## FRACTURE OF THE CONDYLES.

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

## XX. PATELLA.

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

## XXI. BONES OF THE LEG.

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

### FRACTURE OF FIBULA ALONE.

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

### FRACTURE OF TIBIA ALONE.

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

## XXII. BONES OF THE FOOT.

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

Malleolus – Pass a bandage around the foot commencing at the toes, then a kind of gutter or coved splint – after 6 or 10 weeks put on a bandage starch or otherwise – On fracture of leg about the third week if patient becomes weary take off apparatus & apply starch bandage

Os Calcis – By direct force or muscular contraction – Loss of voluntary motion pain – Treat – Splint well padded, two pieces put under part extending down

compresses, two rollers – Compress over toes – commence with the roller at the toes – place one compress on one side & the other on the other side of tendo Achillis & continue the roller above the knee & around the thigh by circular & reverse turns – place on front of leg a splint well padded, in a straight line from end of metatarsal bones to the hip & secure this by roller – Sometimes after a week or ten days this becomes tiresome to the patient then put it in a coved splint –

In Metatarsal fractures we have to contend with inflamation – Keep it down – Dont amputate if any part of foot can be saved, even the big toe or os calcis

begin in the [illegible] side - an extension of foot - over toes loosely
& up thence to two inches, the limb being flexed - a roller
a roller up to the pelvis & the double inclined plane of
pillows - left thus for 5 or 6 weeks then place in an
easy splint



## FRACTURE OF OS CALCIS.

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

## 2. DISEASES AND INJURIES OF THE JOINTS.

General Remarks.

Joints most liable to disease.

Causes of disease

Effects on constitution.

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

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

First head.

*a*. Synovitis—acute and chronic.
*b*. Hydrops articuli.
*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.

Synovitis. is simple infl. of lining membrane of a joint — Concauses are rheumatism - gout. gonorrhea - in this case the discharge of pus from the penis - must bring back the discharge with appearance of the joint from swelling from effusion of synovia at first & afterward from effusion of liquor sanguinis - the limb may be in great danger by contraction of the limb.
Prog - if a number of joints are involved & the constitution generally for -

First indication is to counteract the tendency to flexion of the limb. which is the effect rather than a symptom of the disease - Cannot bleed generally or locally if the cause is Constitutional as gout. syphilis &c. if local cause bleed & morph to counteract the irritation of the leech bite - 30 or 40 leeches - when no specific cause Calo. opium & digitalis & tart antim after bleeding & a purge - Calo opium give so as to make a diaphoretic impression, until gums are touched - when cannot give Cal - give tart. antim if cant take tart. antim give digitalis as a sedative English digitalis in substance. gr 1 2 or 3 times a day - put part in a splint to keep that part. & keep part in proper position - in form of limb limb straight - in upper extremities limb at a right angles -

Hydrops Articuli - Result for the most part of chronic inflamation - Tap the knee with a puncturing needle and as soon as the water is evacuated apply a bandage firmly around the joint. Never inject any substances into the joint, although we have high authority for so doing -
Abcess - any inflamation may result in abcess - Support the Constitution - open it only when you cant help it. When you see that the substance cant be absorbed then open it. When you open the abcess, close the opening carefully & put the limb in a splint. Cold Abcess always the result of Constitutional causes - in such a case give the patient iron, iodine &c support him, put the joint in a splint & compress it with straps.

Poultice the part - open it as far as possible from the joint - use if the pain from the joint open below -

*f*. Reparation of articular cartilage after wounds, &c.
*g*. Alteration in the form of the head and neck of the long bones.
*h*. Collections of blood in a joint.
*i*. Chalkey concretions in a joint.
*j*. Anchylosis.

## *First Head.*

### I. SYNOVITIS.

*Definition.*

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

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

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

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

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

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

*Dissection.*

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

### II. HYDROPS ARTICULI, OR HYDRARTHUS.

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

### III. ABSCESS.

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

## IV. ELONGATION OF LIGAMENTS.

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

## V. INFLAMMATION OF LIGAMENTS.

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

## VI. FLESHY TUMOURS OF THE SYNOVIAL MEMBRANE.

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

## VII. CARTILAGES IN THE JOINTS.

*Definition and history.*
*Joints most liable.*—The ginglymoidal, especially the knee, elbow and jaw.
*Condition in the joint.*—Loose or attached.
*Size.*—Varies.
*Consistence.*—Varies.
*Structure.*—Scarcely organized.
*Number.*—Varies.
*Mode of formation.*—Different explanations. Those of Paré, Monro, Erlangen, Hunter, Cooper, and Brodie, referred to.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—Two general methods. 1. Compression. 2. Extraction. Relative value of the two. Dangers of extraction referred to, and the different operations, especially that of Goyraud and Syme, explained.

## VIII. WHITE SWELLING, OR FUNGUS ARTICULI.

*Definition.*
*Confusion in relation to the precise meaning of the term.*
*Brodie's classification.*—According to Sir Benj. Brodie, all the cases of white swelling may be referred to one of four different lesions. 1. Simple inflammation of the synovial membrane. 2. Gelatinous degeneration of the synovial membrane. 3. Ulceration of the cartilages. 4. Ulceration of the bone.
*Ages most liable.*
*Joints most liable.*

Elongation of ligaments – It is often congenital. If a child be not able to walk though free from pain in such a case to discover the elongation place the child on its feet & having taken up its clothes as if it pins may at the knees – Make extension of the limbs & see if you can pass your finger into the joint – if such be the case you have the complaint – which can only be cured by mechanical means – put on bandages around the limb above the knee & another below – then lateral strips of bandage from the one to the other to supply the place of lateral ligaments – tie the lateral strips and approximate the bandages – Keep the limb in these for many weeks – in cases where it attacks many ligaments & support is required the cold salt to the –

Inflamation of ligaments – same Symptoms as Synovitis the pain of a different kind, more lancinating – treatment rest, splint &c. If you are afraid to bleed in order to reduce heart action give Digitalis – by advice of Sir Ben Brodie – Cartilages in joints – Take out the cartilage clean the wound & put limb in a splint – not deposits from synovia – not broken off from cartilage – an deposit of blood or fibrin from chronic infl. hence may be loose or attached – broken off by the movements of joint – Symptoms – without pain in action a man walking will have acute pain with limb fluid – no infl. make extension of the limb & give the natural motion when it will slip to one side – when many will have tumor & will crackle under compression – if can feel cartilage outside of joint don't cut it out – don't cut down directly upon the cartilage – Place leg horizontally, slip cartilage to outside & make a junction an inch & ½ inches below, in the skin & dissect up under skin – cut carefully & pick out the cartilage – having it impaled on the side of thigh – put a stitch of thread strap between capsule & cartilage – close both openings –

White Swelling – Some under this head include every chronic swelling – Sir B. Brodie's classification is the best – It occurs mostly in young persons who are of a scrofulous habit and it occurs generally in the first joint as they are the seldom – Causes local & Constitutional – The symptoms of the pain stages are the following – 1st The common Symptoms of an inflammation of the synovial membranes – 2d Stiffness, pain, swelling, puffiness on each side of the patella, oscillation – 3d fixed pain that can be covered with the point of the finger, swelling without oscillation – 4th Scrofulous diathesis well marked, pain but not in the part immediately affected, if in the knee pain is felt in the ankle, if in elbow joint in the wrist &c – Prognosis varies greatly, but generally unfavorable – Synovitis more frequent in adult – Anything which will give rise to inflam, will cause this disease, there is no specific cause – when in the second stage cannot tell the result –

Chronic Swollen – Commences as simple synovitis – It gradually & unfavorable when little pain & puffiness & fluctuation for several weeks or months, it is this indicates gelatinous degeneration is in incurable – when little or no pain for

comes time, but it makes a false step
& feels great pain & can come it with pain
lasting for 5. 10 or 20 minutes - but twitching
when at night in bed - an abnormal ossification of the bones without any positive
swelling - pain often referred to another joint
but when far the limb. the pain will be
referred to proper joint - This is ulceration of
cartilage - when (mostly a young person)
the joint is enlarged caused by blue veins -
white - pain increased at night, referred to
joints in vicinity - general system & artificial
swelling uniform. Then is ulceration of
bone - When disease

second stage, pain & pricking - tender & hot -
third stage pain increased & suppurating - the
constitution sinking - consequent upon
~~disease~~ suppuration - sinuses - & the
luxation of the bones from contraction

Be careful about bleeding as there is a long
convey to cure & will require the patient -
don't bleed if can help it - In second stage
the best counter irritant if a young person is a
permanent blister & does well & if not
then ablistin apply actor - in this stage attack the
constitution if tartar - ~~& long continued~~

in many cases the cure is anchylosis, especially when passive motion brings back the
inflammation - 3d stage don't let pus collect
but anchylosis, if can't do this - strip the limb -
& apt with linen or muslin - as the irritation increased by the friction will destroy the joint - the only
simple cases joint to be cured by a blow -

after a joint has been suppurating for a
long time, & if you have amputated must establish an issue - never neglect it -

*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, anchylosis, 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. 3. Prevent contraction of the limb.

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

*General indications in the third stage.*—1. Support the general health. 2. Never open the abscess unless we are forced so to do by peculiar circumstances. 3. Poultice the part after the abscess opens. 4. Keep the joint in a splint. 5. It is often essential to obtain 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.* Psoas abscess.

*Prognosis.*—May be stated to be generally unfavourable.

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

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

*Treatment.*—General indications. 1. Rest and the 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's and Humbert's method of practice. 3. Attend to the diathesis. 4. Apply counter irritants. 5. Support the health when this support is indicated. 6. Evacuate pus when it is formed in large quantities, poultice, and support the health. 7. When resolution cannot be obtained, endeavor to form a false joint, or establish 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.* tincture of aconite and anodyne fomentation

### 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.

Neuralgia - pain upon slight touch & worse upon talking firm hold or tinkling - the nerves are acted by slight touch & paralyzed by firm pressure - no infl. - pain intermittent

Neuralgias - generally confined to young delicate girls - Causes a faulty physical education as being shut up three or four in a room - bad diet with too much study. Give a shower bath, laxative diet, injections, well regulated diet. To be taken away from school - give iodine or iron strengthening the constitution - give the pleasant occupations. If the pain should be so severe as to demand immediate relief saturate a cloth or handkerchief in cold water & lay it around the part - or saturate the cloth with a solution of tincture of Arnica or tincture of aconite - Apt to be confounded with inflamation of the joint - To ~~find~~ make a mental impression - Electrum point with Agent. Stit -

*Third Head.*

## I. HYPERTROPHY OF THE ARTICULAR CARTILAGES.

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

## II. ATROPHY OF THE ARTICULAR CARTILAGES.

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

## III. EBURNATION OF THE ARTICULAR CARTILAGES.

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

## IV. SOFTENING OF THE ARTICULAR CARTILAGES.

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

## V. ULCERATION OF THE ARTICULAR CARTILAGES.

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

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

Describe this process.

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

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

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

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

## IX. CHALKEY CONCRETIONS IN AND AROUND JOINTS.

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

## X. ANCHYLOSIS.

*Definition.*

*Classification.*—1. Partial or local.
2. General or universal.
1. True or complete.
2. False or incomplete.
1. Extra capsular.
2. Intra capsular.
3. Capsular.

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

*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 the distinguishing one form from another.

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

*Dissection.*—Varies with the kind of anchylosis.

*Treatment.*—In *true* anchylosis we can only relieve the patient by *establishing*

Anchylosis is not a disease of itself, but a consequence — is stiffness of the joint in which motion is partially or wholly lost. The ginglymoid joints are more liable to become affected on account of the extensive bony surface & in consequence of this liability to fracture — as these they are more liable to be kept at rest &c. To distinguish true from false anchylosis, make the patient stamps his foot, if it be true he will feel the shock at the hip — if false he will feel it at the knee, (Supposing the Anchylosis to be in the knee) — Diag — relax muscles of the p. attempt to make latural motion, in these cases may be detected by motion of skin — in such cases make patient stamp upon foot, if true shock will be felt in hip joint this is the characteristic — it is true anchylosis — if can make tense the tendons by extension & feel like wire it is extra-capsular — when all parts stretch equally it is capsular —

Treat in true, if leg is straight & useful let it alone if in elbow — Louvrier's attempt to straighten the joints by lever & screw — not to be thought of —

Dr Mutons — to saw through the bone below the joint in thigh & above in elbow & establishing a false joint — These operations should be limited to hip & elbow — in the knee cut out a triangular piece, not quite through the bone, leave by flap in front — & bring the limb gradually but not straight — when tendon, as in the ham use screw of strong wire for two weeks if this does not do cut the tendon — in straightening the knee, dont bring the heel down flat, or you will have luxation of tibia backwards — which cannot be relieved — cannot have the complete use of limb as formerly — When from bone must treat the eccatrix, cut this out as it cannot [illegible] — In all cases

must keep up the action for months, as if taken off, in a short time, the limb will return to its former contracted state. after taking off screw, apply a coarse splint - not about both in one of the best remedies when there is no disease of joint, but from rest.

Wounds of joints - are divided into superficial and penetrating - The symptoms in a superficial wound are mostly obvious - more obscure in a penetrating - In any penetrating wound there is escape of the synovial fluid - ascertain direction of the wound - The knee joint most dangerous, next the ankle - A wound made with a small penetrating instrument, such as a needle, is very dangerous, especially if the point be broken off - In such case dangers of tetanus - Treats not matter how small across the knee there is danger of inflamation, in such cases the indication is to close the wound by suture & place the limb in a splint & institute the antiphlogistic treatment - after some weeks commence passive motion still keeping the part in the splint - If it be a lacerated wound carefully pick away all loose pieces of bone - close the wound by sutures - carefully avoiding must not be through the synovial membrane & look out for inflamation. If serious inflamation come on give opium & in good heavy doses - In punctured wounds (as with a fork) apply cold & should this not prove apply warm dressings - In wounds with needles, unless you can feel the needle under the skin or discover on portion sticking out, don't attempt cutting it out - Be very careful always not to cut about a joint hunting for needles or other sharp pointed instruments - If bullets should lodge in the head of a bone dont attempt to cut them out, or inflamation will be produced - the bullet in such a case will frequently become encysted - put limb in a splint & an ice —

Sprains - a sprain is that condition of a joint in which the ligaments have undergone a torsion or twisting - a slight laceration - may be produced by very slight forces - Symptoms - a peculiar sickening pain, often followed by fainting - you can move the joint in every direction, but the patient cannot - absence of voluntary motion and crepitus - gradual swelling - If you be called in after swelling has taken place it will be difficult to distinguish sprains from fractures, in such a case treat as if you had a fracture until the swelling is reduced - treatment - Cold applications, but if cold should not relieve apply warm - apply a tight bandage & keep it wet with lotions - Keep oiled silk over this to prevent evaporation - if inflamation takes place take it off immediately - tincture of Arnica as an evaporating lotion - warm or cold lotions on a female when menstruating - Poltice of clay often used & in food in sprains - Gunpowder on bitch.

Symptoms of the injury - Sensibility of the part is lost

*a false joint*, or straightening the limb by *cutting out a plug of bone*, as performed by Dr. J. R. Barton. Never *excise the joint*, nor *amputate the limb*, as advised by some; nor should we attempt Louvrier's operation.

In *false* anchylosis, the treatment is modified by the cause of stiffness. The agents usually employed are *passive motion*, *frictions*, *electricity*, *galvanism*, *vapour bath*, the *screw*, *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 bursæ mucosæ.

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

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

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

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

## *Sixth Head.*

### SPRAINS.

*Definition.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Results or effects of the injury.*

*Treatment.*

## *Seventh Head.*

## DISLOCATIONS.

*Definition.*

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

(1.) The local predisposing causes are—

*a.* Preternatural length of the ligaments of a joint, (see Stanley.)

*b.* Peculiar congenital conformation of the joint.

*c.* The form of the joint.

*d.* Paralysis of the muscles around the joint

*e.* Disease of the constituent tissues of a joint.

*f.* Hydrops articuli.

*g.* Tumours or earthy deposites in or about the joints.

*h.* Interstitial change in the articulating surfaces.

The general predisposing causes are—

*a.* Preternatural laxity of the entire ligamentous system, (see Delpech.)

*b.* The age. Dislocations are rare in the *very young* or *very old*.

(2.) *Local or external causes.*

*a.* External violence.

*b.* Muscular action.

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

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

*a.* Primitive luxation.

*b.* Consecutive luxation.

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

*a.* Complete luxation.

*b.* Incomplete luxation, or sub-luxation.

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

*a.* Recent luxation.

*b.* Old luxation.

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

*a.* Simple luxation.

*b.* Compound luxation.

*c.* Complicated luxation.

*Symptoms of luxation.* 1. Rational or Physiological. 2. Sensible or physical.

First, or rational.

*a.* Pain.

*b.* Numbness or paralysis in limb.

*c.* Loss of motion.

*d.* Constitutional disturbance.

Second or physical.

*a.* Change in the entire form of the limb.

*b.* Change in the natural length of the limb.

Dislocations - A dislocation is a case in which there is either partial or total displacement of the articular cartilages - Should the patient be in a state of syncope we then have him in the most favorable state for reduction - do it then immediately - Make extension in the line of displacement for the most part - Extension & counter-extension may be made by the hands of an assistant or by means of a rope pulley - Keep up extension & counter-extension until the muscles yield if they be rigidly contracted - when you bend to procure muscular prostration, do it from a large orifice, the patient standing upon his feet - If you put him in a hot bath let it be 108° or 110° so as to make him feel faintish - In rare cases you may hope to divide some muscular fibres, in such cases perform the operation by the sub-cutaneous incision -

(6) Fall & Socket, from laxity of ligaments

(5) Spontaneous luxation from disease of the ~~head~~ joint -

old persons not liable for the bone is now brittle & will break before the ligaments will give way - in the very young because animal matter predominates & he are more liable to have bent bone

Prognosis - (a) most unfavorable is the hip -
(b) apt to compound a partial luxation with
sprain & mis-mon fav. when complete luxation -
(c) when recent fav. & unfav. when a blood vessel is
glued to bone - an old luxation hopelessly unfav -
both in regard to the use of limb & life of patient
let nothing tempt to reduce an old luxation
dissection - in recent parts bathed in blood - torn -
nerves & blood vessels displaced & tendons also -
if old (after six months) blood gone, torn parts united
tendons forming new attachments - head of bone
a little roughed against a bone smooth by lies against
a muscle - if after 3 months if had against any the
bone is flattened & a new ~~cavity~~ a socket has been
formed & ~~new~~ the old socket & ligament or is
not fit to receive bone - hence should not
attempt the reduction of an old luxation -
new sockets are developed by the long caused
the absorption of parts on which it rests & pleura
is deposited & bone also -

Force must be steady - if applied by jerks the
muscles are stimulated - in most cases
avoid compression of the muscles of the
limb

*c*. Unnatural rigidity of the limb.

*d* The disappearance of preternatural enlargement of the natural prominences of the joint.

*e*. The appearance of unnatural cavities about the joints.

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

*Diagnosis*.—Dislocations 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 of bones.

*e*. The constitution of the patient.

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

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

*Treatment*.—General indications.

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

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

The mechanical means are—

*a*. Extension.

*b*. Counter extension.

*c*. Change in the position of the different bones.—To accomplish these objects we employ *the hands of assistants*, *bands*, *rollers*, *the pullies*, 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 Potassæ.
*d*. Fumes of tobacco, or injections of its infusion.
*f*. Intoxication.

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. Predisposing. 2. Proximate.
(1.) Age, sex, and preternatural elongation of the processus vaginalis.
*Variety.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

as if not an may tear the ligts ~~off~~ in reducing the luxation—
In all cases set the fracture first & then attend to luxation— ~~Then~~ take off the rough dressing off the fracture & apply the proper ones when the luxation is reduced—

Inferior Maxillary— Not frequent in young children in ~~men~~ women more subject than men owing to laxity of the ligaments— Muscular contraction may produce this luxation— Symptoms— Mouth open ~~flood~~ flood of saliva— depression in front of the ear— if not reduced nature will sometimes make a new joint— Reduce luxation by putting thumbs wrapped in cotton or a cloth— one on each side of the bone & press downwards & then backwards— place a bandage around the jaw of the patient for a week or so— this is the only bone of the head & face that can be luxated, as it is the only moveable bone— in young persons bone is almost straight & the same thing happens in old people when the molar cavities are taken away—

may be cured by nature than the fan plaiting - In reducing these luxations the only muscle to counteract is the temporal - I generally have to employ constitutional remedies to relax this muscle - when dont wish to employ the thumbs, put small pieces of cork between the teeth & press up the chin -

Os Hyoides - Luxations of this bone rare - Dislocated by direct force as when an individual is grasped by the throat, just as in fracture of this bone - Symptoms almost the same as in fracture of this bone - Of Apnoea be great dont reduce the luxation immediately - but in order to give the patient present suffering (if necessary) perform tracheotomy - then institute the antiphlogistic treatment - to diagnostic trace the natural line of the bone - must not learn it displaced - the swelling will keep it in situ

Ribs - Often at the sternal or vertebral extremity, produced by a blow or a fall, sometimes in consequence of disease by muscular contraction - Symptoms, pain referred to seat of luxation - increased by motion, it is a dull aching pain - cant be reduced - keep the thorax at rest - institute the antiphlogistic treatment - put a roller around the chest - Sternal extremity - This or costilage driven in pain increased by motion - easily detected - sometimes comes in so far as to interfere with the heart - take a tenaculum or some sharp pointed instrument - carrying it in on the upper edge of the rib, bring the rib back to its place - Surround the thorax with a broad bandage - A rib is generally driven in -

Sternum - Luxated by direct force - rare - Bone separated from its cartilaginous connexions - pain &c - To reduce it, make the patient make a strong expiration, if that succeeds surround the thorax with a roller, if not reduce it with a tenaculum or some other sharp pointed instrument - But if the bone dont interfere with some internal organ let it alone -

Clavicle - May be displaced in three directions - Luxations of sternal extremity rare - Sternal extremity forwards, Tumor in front of the sternum, loss of voluntary motion - produced by a force that will carry the shoulder directly backwards, prognosis unfavorable - To reduce this fracture place a strong chest around the thorax & pull in the line of displacement and at the same time make compression on the tumor, use same apparatus as in fracture of the clavicle - prognosis unfav. a lump in all probability owing to the difficulty of keeping the part in situ - the most frequent luxation is one of luxations - difficult sometimes to reduce owing to action of pectoralis major & latissimus dorsi drawing the arm close to the side - in addition to apparatus for fracture take a long

## II. SUB-LUXATION OF THE LOWER JAW.

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

## III. OS HYOIDES.

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

## IV. RIBS.

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

## V. STERNUM.

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

## VI. CLAVICLE.

*Anatomy of its articulations.*

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

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

I. STERNAL EXTREMITY FORWARDS.

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

II. STERNAL EXTREMITY BACKWARDS.

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

III. STERNAL EXTREMITY UPWARDS.

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

IV. SCAPULAR EXTREMITY UPWARDS.

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

V. SCAPULAR EXTREMITY DOWNWARDS.

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

VII. LUXATION OF THE INFERIOR ANGLE OF THE SCAPULA.

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

strip of adhesive plaster & place it over the back across the shoulders & the thorax -

Sternal Extremity backwards - depression in front of sternum when tumor was in last luxation - shortenings of shoulder loss of voluntary motion - produced by direct force and easily recognized - hard to reduce - mostly same plan as in the last luxation - Extension from shoulder in line of displacement - carry the shoulder backwards - If you cant reduce it is recommended to cut out the displaced bone only attempt this as the last resort - a union often follows - Arm is carried forward - apply the same apparatus as above - when a part is cut, will have ligamentous union & will have a useful limb

Sternal Extremity upwards - Shortening - tumor on top of the sternum - loss of voluntary motion - arm coming downwards - put extending band around the neck & make extension in the line of displacement - when reduced use the same apparatus as in cases above, by force applied on top of shoulder — use same piece of adhesive plaster -

Scapular Extremity upward - By force applied to clavicle, usually to acromion which is driven downwards - easily reduced - shoulder drawn inwards close to the ribs - extension outwards - pad in the axilla - forearm in a sling - a broad strip of adhesive plaster over the shoulder scapula is tilted a little by the trapezius & drawn down by arm - the very worst luxation in the body - if cut alone & no man will be a cripple for life - must push the scapula up -

Scapular Extremity downwards - By force applied to the clavicle - clavicle downwards - use same apparatus in extension as above - put your fingers under the clavicle & push it up - put a ball or pad of cotton wound in adhesive plaster - keep arm out & in a short sling

Superior Angle of Scapulae - The muscles sometimes loose their tonicity & if in such a case force be applied to the shoulder this luxation will occur - Carry top of the shoulder forwards - great pain beneath the angle of this bone - rigidity of the arm - leaning forwards, these symptoms will lead to a suspicion of this luxation - Can in a relaxed state of the muscles reduce it by placing a finger on each side scapula & pushing upwards - if you cant succeed in this way, make a subcutaneous incision with a small knife & divide some of the fibres of the trapezius dorsi - bring down the shoulder by a roller & put arm in sling -

Head of Humerus - Liability very great because of its small bony articulation - ligaments very lax - certain muscles prone to luxation - more frequently luxated than any other joint in the body - Sallys Subscapular luxation - head of bone becomes wedged in between two ribs - Always thoracic luxation - head of bone not only wedged in between two ribs, but pushed into the thorax -

Downward Luxation - To produce this luxation the arm must be perpendicular to the body - often produced when an individual puts out his arm to support himself - easy to distinguish if you only recollect what it is liable to be confounded with - Symptoms - Flattening of the shoulder - arm rigid - can pass the finger under the acromion process - a large tumor in the axilla, not easily made to disappear - arm extended from the body - In case of comminuted standing, when there is no inflamation, no sores or abscess of any kind you may attempt reduction provided the patient be in good health - May not attempt it when more than two months old, even at two months it may be reduced, but be very careful about manipulating it - If it crackles under the finger you may puncture the swelling & let the air out - Positive inflamation complicates it greatly - you must in this case get rid of the inflamation before you do anything else - you can without any inconvenience wait for a few days - Treatment - Prepare your case for reduction in a recent case - put your doubled fist in the axilla & pulling the muscles relaxed, suddenly bring the elbow down to the side - if this don't do, make extension straight from the body then suddenly bring the arm down to the side - put your knee in the axilla extension made by assistants, at the same time compression on top of the scapula - Put your patient flat on the floor & sitting down inside him put your heel in the axilla & pull - in this manner you may reduce the most difficult luxation of this bone - besides these different ways you may use bands, pulleys &c. &c. relaxing in all cases much fix the scapula, the muscles upon scapula - put one hand upon elbow the other upon end of humerus

would not attempt to reduce this bone after the lapse of six or seven weeks

Forward Luxation - Arm carried backward & upwards - tumor directly under the clavicle - arm shortened and carried back & immovably fixed - To reduce it - place the patient [illegible] & steady the scapula & make extension in line of displacement - then bring head of bone down into axilla - then inwards - then use the means for downward luxation - after reduction of the humerus in all its various ways, apply the same apparatus as in fracture of the clavicle - depression with acromion - tumor in front of [illegible] the clavicle

## VIII. LUXATION OF THE HEAD OF THE HUMERUS.

*Anatomy of articulation.*

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

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

### I. DOWNWARD LUXATION.

*Causes.*

*Symptoms.*

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

*Prognosis.*

*Dissection.*

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

*Treatment.*—General indications.

*a.* Fix the scapula.

*b.* Relax the muscles.

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

General methods.

*a.* Simple elevation of the arm.

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

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

*d.* Extension, with heel in the axilla.

*e.* Pullies and bands.

*f.* Reducing apparatus of different kinds.

*g.* Myodiatomy.

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

### II. FORWARD LUXATION.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Complications.*

*Treatment.*—Reduce to the first, 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.

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

### V. DISLOCATION OF THE BICEPS TENDONS.

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

## IX. LUXATION AT THE ELBOW-JOINT.

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

### I. BACKWARDS AND UPWARDS OF BOTH BONES.

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

### II. LATERAL DISPLACEMENT.

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

Backward Luxation - Produced by force acting from the front backwards - Reduction - Grasp the shoulder with one hand & the elbow with the other - Flexing the arm forwards - Should the head of the bone not come into the socket by this movement - place the patient on his side - fix the scapula make extension in line of displacement - counter extension being made at the same time - bring it into the axilla and employ the means already indicated -

Sub-Luxations may be confounded with sprains or bad bruises - the axilla will appear very full - the shoulder round and flat behind - no mobility - Grasp the scapula and make extension in line of displacement - when you find the bone slipping carry the arm forwards - If these means dont succeed try the measures already details above -

Dislocation of Biceps tendons produced by a twist of the limb is by a washerwoman ringing clothes, pain excruciating - hand supine - arm everted - you can move the limb in any direction but the patient has no command over it - Put a towel around the thorax & make extension in the line of displacement, then rotate the limb - If this will not reduce it, in an extremity you may divide the tendon of the biceps - when it is reduced commence with a roller at the hand & carry it up to the shoulder, put the arm in a sling from which it must not be removed for a couple of weeks -

Luxation at the elbow joint - The ligaments of this joint are very strong - Notwithstanding this we have seven different luxations of this joint - Backwards & upwards is the most common - produced by falling on the back of the hand - lateral & posterior capsular ligament torn, greater sigmois cavity occupied by the ulna - tumor on back of the arm - also on front of elbow joint - bones crushed & locked - brachialis internus & biceps will be stimulated by pulling in the line of displacement - bend fore arm against the upper and making extension bring the bone to its place - if you are not able to reduce in this manner, substitute a bed post for the limb - have to contend with the contraction of brachialis externus & triceps extension & locking of the bones - if the must use bed post - make extension from the wrist & counter extending hand across the shoulder - bed post wrapped - antiphlogistic action antiphlogistics -

Lateral displacement - on ulnar side a depression - fore arm flexed partially - whole arm ripe - produced by a twist of the arm - entire loss of voluntary motion, this is a partial rather than complete luxation - reduce by pulling in line of displacement - sometimes by flexing the arm - Luxation with fracture - treat such a case precisely as if simple fracture - place limb on angular splint for two or three weeks -
Separate bones & stimulate biceps by a sudden jerk -

Forward - forearm over edge - condyles of humerus ~~on back of~~ marks tumor behind

Forwards of the Head of the Radius - Hand carried to a state of supination - radius twisted forwards and lodging on coracoid process of the ulna - Seize the hand supine & place your thumb on tumor & bring the arm around to its place - To have displacement here the ligaments must be ruptured - Backwards - produced by excessive pronation of the hand - head of bone lodged on the ulna - radius twisted on ulna - make extension from the hand - grasp the hand, place your finger on tumor & bring hand from pronation to supination - If adhesions have formed in consequence of the long standing of the luxation there will be some difficulty in reducing it - but we may try and possibly after much may succeed -

Imperfect luxation of the Head of the Radius usually occurs in early life - produced by such a force as a nurse helping a child over a gutter by the hand - hooking of the tubercle of the radius on the sharp edge of the ulna - radius immovably fixed - make moderate extension, for you will cause great pain - rotate to the one side or the other - If not reduced there will be anchylosis & consequently deformity & want of the necessary motion in the arm -

Superior extremity of the Ulna - This luxation is rare - produced by falls & striking ~~on~~ side of the wrist - ulna lodged in sigmoid cavity of humerus - radius retains its place - inclination of the hand inwards - tumor on condyle of humerus - shortening of limb - immobility - Extend the arm & use the knee as the fulcrum -

Wrist - ligaments strong - lumage of the muscles short - luxation consequently rare - easily known by external appearances - produced by falling & as the result of disease by muscular contraction -

Backwards - Hand twisted - Depression on front & prominence on back of the hand - same treatment as such - that is apply a roller & splint & keep it so for some time -

Luxation backwards - by extending & twisting the arm

### III. FORWARD DISPLACEMENT.

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

### IV. FORWARDS OF THE HEAD OF THE RADIUS.

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

### V. BACKWARDS OF THE HEAD OF THE RADIUS.

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

### VI. IMPERFECT LUXATION OF THE HEAD OF THE RADIUS.

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

### VII. LUXATION OF THE SUPERIOR EXTREMITY OF THE ULNA.

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

## X. LUXATION OF THE WRIST.

*Anatomy of 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.*

Forwards - Tumor on inside - on ulnar side a depression hand immovable - great pain - fulness anteriorly - it may be readily pushed back with the finger but it will not stay - when thus it is reduced apply a firm roller & splint & keep it so for weeks -

Lower ⅓ of Ulna - force applied in front depression in front - tumor on back - Voluntary motion suspended - supinon can move, also pain - line of ulna displaced - great difficulty in ~~doing~~ maintaining the bone when it is placed - on account of laxity of ligaments want of locking of bones - place a firm roller around it - will have opportunity in 9 out of 10 cases.

extend forearm & hand - place one roller under wrist and another under anterior ⅓ of meta carpal bones - bring outwards with

Carpal bones - Only two of these bones can be luxated viz the os magnum & os pisiforme - the os magnum more frequently than the other - it cannot be luxated unless the ligaments are slack, hence it usually happens in delicate females - prominence on back of wrist - the bone may be thrown anteriorly or dorsally under the skin - great pain - hard to reduce - if quite recent we may succeed in reducing it as it makes a very ugly prominence we are advised to do so - if reduction cannot be accomplished - & you cut it out look out for inflamation - use in such case the most active antiphlogistic treatment - Must not confound this luxation with inflamation of the ligaments of the wrist - the treatment for this latter affection is rest - cooling, compression &c -

Os Pisiforme - very rarely luxated - produced by muscular contraction - loss of voluntary motion - bone dragged half an inch from its place - Reduce it by seizing tumor & pushing it to its place & fixing it thereby a strip of adhesive plaster, a roller & a splint - by muscular contraction

Sub luxation - in delicate females from laxity of ligaments - look at the general system & constitution from inflamation - swelling only when the hand is flexed or extended - if from inflamation mattress put on a metallic bracelet not a splint - cold bandages

Examination of luxation - carefully observe if can get motion - passive motion

Metacarpal bones - easily reduced except when that of thumb when it lodges upon the front of trapezium - very rigid, can't move it - attach to the first phalanx alone hitch - thumb previously wrapped with buckskin - assistant counter extending by finger & assistant between fore finger & thumb must not pinch muscles for they are not in fault - in 4 or 5 months a new socket will form & will be able to use limb - when luxated on dorsum of the

Phalanges - of the thumb on dorsum, hard to be reduced on account of locking of the ligaments binding of lateral ligaments & interposition of ligament & tendon of sesamoid bone - must not extend the thumb in the line of displacement strain across palm of hand & downwards - cut the lateral ligaments when cannot move - if one use to cut the tendon - Druitt says in a compound luxation to cut off the bone - must not do it when can reduce it any other way - but if can't reduce luxation in any other way may do it - sometimes by pulling the thumb backwards, an assistant pulling the end of bone by a tape -

Luxation of femur upon dorsum ilii - by force twisting as by one leg made to cross as in mashing a patient. When one leg is bent across the other a fulcrum is made by the lip of the acetabulum - and the muscles on back of the thigh pull the bone upwards & backwards - diagnosis is simple, but often the surgeon is foiled - Symptoms. limb bent - toe rests upon the dorsum of sound foot - rigid, but movable in line of displacement only - flattening over the great trochanter & tumour on dorsum ilii - In coxalgia we have the same deformity as in luxation - when called to a patient inquire into the history of the case as this is the only way of making a true diagnosis - It often complicated with fracture of the neck of the bone - to see from the other, take hold of the leg and make the thigh steady and pull leg down, if the leg is made long by this means we have fracture - Prognosis far more favorable - but if out of place for eight weeks it is

## XIII. LUXATION OF PHALANGES.

*Anatomy of these joints.*

*Liability.*—All may be luxated, but usually the first of the thumb is most liable.

*Direction of displacement.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*—Difficulties to be overcome are, 1. Shape of the bone. 2. Binding of ligaments. 3. Interposition of anterior ligaments. (Vidal and Pailleux.) 4. Interposition of sesamoid bones. (Lawrie.) 5. Want of leverage. Manner of overcoming these difficulties explained.

## XIV. LUXATION OF THE SACRUM.

*Anatomy of the joint.*

*Liability.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*

## XV. LUXATION OF THE OSSA INNOMINATA.

*Liability.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*

## XVI. RELAXATION OF THE PELVIC SYMPHYSES.

*Liability.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*

## XVII. LUXATION OF THE FEMUR.

*Importance.*

*Anatomy of the joint.*

*Liability.*

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

### I. UPWARDS AND BACKWARDS.

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

*a.* Fix the pelvis.
*b.* Draw the head of the bone towards its cavity.
*c.* Make use of the different muscles to assist in the reduction.
*d.* Employ constitutional remedies to relax the muscles.

General methods.

*a.* Bands and pullies.
*b.* Apparatus.

### II. UPWARDS AND FORWARDS ON THE OSSA PUBIS.

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

### III. DIRECTLY UPWARDS. (VERY RARE.)

*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*—The same indications to be observed as above, but vary the direction of the forces to suit the case.

### IV. BACKWARDS AND SLIGHTLY DOWNWARDS.

*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*—General indications the same as above, but the direction of the forces must be varied.

### V. FORWARDS AND DOWNWARDS.

*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*—General indications still the same, but the process must be varied.

good surgery to let it alone, except when the ligaments are on stretch & the luxation easily reduced - Treatment - Take a bandage sheet for counter-extension, which must be made from perineum of sound side, as on diseased side we have muscles (the adductor muscles) whose action would counteracted by making counter-extension on the diseased side - take a long jack towel & make a clove hitch which should be placed just above the knee - fix the pelvis by a band passing around it - to the other end of jack towel place the system of pulleys with which to make extension which is done by an assistant - After all things are ready bleed patient from both arms in a standing posture until he faints - while fainting reduce luxation as the muscles are then relaxed - work the limb backward & forth and when head of bone is brought down to the acetabulum, suddenly pull out the leg in order to bring the adductor muscles into spasmodic contraction, which will bring the bone into its proper place - If these muscles wont work place a band around the thigh & lift it at the same time you push it out -

On Ossa Pubis - limb shortened, rigid - toe turned out - tumor at Poupart's ligament - flattening of hip - fulness at upper edge of acetabulum - produced by thigh being kept steady & body falling backwards - Counter-extension on sound side - lifting band placed upon thigh - pull in line of displacement - when head of the bone is brought down turn leg upon sound limb -

Upwards - Bring foot applied to foot on the knee when leg is bent - leg bent a little - leg shortened 3/4 inches - toe turned at right angles to the body - limb hung up as it were upon the body - Make extension first downwards then across the other limb at the same time lifting head of the bone - partly to stimulate adductor muscles -

Backwards - toe against the other foot - limb shortened 1/2 an inch - fulness of the hip & flatness just above it - limb bent - lift bone out of the sciatic notch by a band while extension & counter-extension is kept up - turn thigh outwards - toe rest against the side of the other foot

Forwards - limb lengthened - toe nearly in line of body - tumor at Poupart's ligament - extension & counter-extension made across the pelvis - pass limb across sound thigh lifting as little as possible - then push thigh downwards directly - limb longer than natural & rigid - place patient on sound side - make slight extension to disengage the head of the bone, then lift the leg & carry it slightly across opposite & push it upwards - Can rotate the thigh, in rotating limb generally falls into the sciatic notch -

Marsden perch over the upper margin while an assistant presses against the lower - if this does not do, forcibly flex the leg upon the thigh to stimulate the quadriceps - if these fail divide the tendon of quadriceps subcutaneously -

In all cases after any luxation, patient liable to spontaneous luxation

Luxation of knee - Found by partial reception of condyle of femur -

Patella outwards by quadriceps thrown into irregular action - bone thrown on external condyle - flatness of joint - tumor on outer condyle - stiffness of limb pain - inwards - by force required on outer condyle - tumor on inner condyle - upwards luxation of patella proper - excessive inflammation - by powerful flexion of limb - flatness of joint - tumor at bone joint - movable, can move the limb in any direction - Downwards - by tendon of quadriceps remains torn slight displacement of patella pinch - bundle of muscular matter lodged on the thigh - flatness just above the knee -

Patella on axis by twisting tendon into sort of rope produced by forcible contractions - to reduce it you untwist the tendon - Outwards & inwards - to overcome resistance flex the leg on thigh - Surgeon put leg on his own shoulder, put fingers under patella and push it up - upwards pull down and it will come back, in such case use the long roller & splint - Downwards, flex the limb elevate & bleed the muscles - compress the muscles by the roller - On axis - tendon twisted - patella on edge - leg over the shoulder - fingers on side of patella push and with heel of hand above patella, to place - dry hard to reduce - put a bandage on knee -

Head of Tibia - Backwards or forwards - easily known - extension & counter-extension in line of displacement - Outwards & inwards produced by machinery mostly & generally partial luxations - dress with a bandage & splint - keep limb elevated - active antiphlogistic treatment - Sub-luxation or twist - extension and counter-extension in line of displacement of limb be turned out, push in, if in push out - easily known generally

Internal derangement of knee joint - slipping forwards of cartilage and shutting up the joint - it produces stiffness - knee looks natural joint rigid - but the leg may be bent - extension gives pain - set patient on margin of table & flex leg on thigh - throw the leg suddenly forwards - Persons subject to this should wear a knee cap continually - Must not confound this with disease of the cartilages - characteristic sign a fulness when there ought to be a depression between the bones -

VI. DIRECTLY DOWNWARDS. (VERY RARE.)

*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*—General indications still the same, but we must modify our forces to suit the case.

## XVIII. LUXATION OF KNEE.

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

### PATELLA.

*Varieties.*—1. Outwards; 2. Inwards; 3. On its axis; 4. Upwards; 5. Downwards.
*Causes of each.*
*Symptoms of each.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

### II. LUXATION OF THE HEAD OF THE TIBIA.

*Varieties.*—1. Backwards; 2. Forwards; 3. Outwards; 4. Inwards; 5 Subluxation or twist.
*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.*

## XIX. LUXATIONS OF THE ANKLE JOINT.

*Importance.*
*Anatomy of the joint.*
*Liability.*
*Direction of displacement.*—Inwards; Outwards; Forwards; Backwards.

### I. INWARDS.

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

### II. OUTWARDS.

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

### III. FORWARDS.

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

### IV. BACKWARDS.

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

Head of Fibula - In the line of fibula there is a depression where an elevation should be - push bone back again, it is done easily - but hard to keep there - keep bone in its place by pressure - ankle joint - fracture of fibula (Tibia) (½") outwards - fracture of internal malleolus - reduction & both bones easy - place in a splint - cold water dressings for several weeks - Backwards & Outwards - foot shortened anteriorly - path in line of displacement - surgeon push it into its place - Forwards - same way - Tibia shortened - front part of foot lengthened - extension from the foot & counter ex. from lower end of femur. Have a bandage. & a carved splint or a Hatch bandage - when the last gives pain cut it in half -

Astragalus - Sodjd on either side - Separate bones of the foot as well as you can obtain as usual. If you cant reduce it which is generally the case cut out the bone - clean the wound - put foot in a splint - keep down inflamation - passive motion by fourth or fifth week -

Dislocation of the tendon of the peroneus muscle cut the tendon -

## XX. LUXATION OF THE TARSAL BONES.

### I. ASTRAGALUS.

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

### II. THE CUNEIFORM, ETC.

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

## XXI. LUXATION OF THE METATARSAL BONES.

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

# *Eighth Head.*

## XXII. LUXATION OF THE PHALANGES.

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

## CONGENITAL LUXATION.

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

## 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.* Scrofula.

*d.* Cold.

*Symptoms.*—1. Local. 2. Constitutional.

*Diagnosis.*—May be confounded with ostitis, caries, necrosis, rheumatism, or gout.

*Prognosis.*—Varies in different cases. Usually the cure is tedious; it may nevertheless be considered a very curable disease.

*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.
4. Mercurials.
5. Preparations of iodine, especially the iodide of potassium.
6. Decoctions of the woods.

Second, or local.

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

## II. PARONYCHIA, OR WHITLOW.

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

## III. TYROMA.

*Definition.*
*Varieties.*—Partial or general.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Terminations.*
*Treatment.*

## IV. CHONDROMA.

*Definition.*
*Varieties.*—Partial or general.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Terminations.*
*Treatment.*

## V. OSSIFICATION OF THE PERIOSTEUM.

*Varieties.*—Partial or general.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## VI. MALIGNANT DISEASES OF THE PERIOSTEUM.

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

## VII. WOUNDS OF FASCIA OR APONEUROSIS.

*Varieties of wounds.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Terminations.*—Inflammation, sloughing, suppuration, adhesions, contractions.
*Treatment.*

## VIII. CONTRACTION OF FASCIA.

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

### I. CONTRACTION OF THE FASCIA PALMARIS.

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

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

*Fingers usually involved.*

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

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

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

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

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

### II. CONTRACTION OF THE FASCIA CUBITI.

*Anatomy of the part.*

*Deformity produced by the contraction of the Fascia.*

*Causes.*—1. Congenital. 2. Acquired.

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

*Prognosis.*

*Effects on the other constituents of the articulation.*

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

### III. CONTRACTION OF THE FASCIA PLANTARIS.

*Anatomy of the sole of the foot.*

*Deformity produced by the contraction of the fascia.*

*Causes.*—1. Congenital. 2. Acquired.

*Diagnosis.*—May be mistaken for common talapes equinus.

*Prognosis.*

*Effects on the tarsal and metatarsal articulations.*

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

### IV. CONTRACTION OF THE FASCIA LATA AT THE KNEE.

*Anatomy of the joint.*
*Deformity produced by the contraction of the fascia.*
*Causes.*—1. Congenital. 2. Acquired.
*Diagnosis.*—May be confounded with contractions of the tendons and muscles, and also inflammation of the joint.
*Prognosis.*
*Effects on the articulation.*
*Treatment.*—The same general methods hold good here.

---

## IV. DISEASES OF THE BURSÆ MUCOSÆ.

### I. WOUNDS OF THE BURSÆ.

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

### II. INFLAMMATION OF THE BURSÆ.

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

### III. ABSCESS OF THE 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.*

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

## VII. BUNYON.

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

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

When the bursa becomes very troublesome it may be dissected out. (See Brodie.)

## VIII. HOUSEMAID'S KNEE.

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

Housemaids Knee - Development of large cyst directly over the knee - If called early blister scarify with mercurial ointment or iodine then compression - If long standing and to be small aisseet to out - If large puncture

# V. DISEASES OF THE TENDONS.

## I. WOUNDS OF THE TENDONS.

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

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

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

## II. INFLAMMATION OF TENDONS.

*Varieties.*—Simple, rheumatic, or gouty; acute, or chronic.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## III. OSSIFICATION OF TENDONS.

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

## IV. TUMOURS OF TENDONS.

See chapter on "Tumours."

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

## I. WOUNDS AND RUPTURE OF MUSCLES.

*Varieties.*
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Mode of reparation.*—This process is modified by the exposure or non-exposure of the injured muscle to the action of the air.
*Treatment.*—1. Rest, proper position, and apparatus. 2. Suture, or straps, and bandages. 3. Antiphlogistics.

## II. MYOSITIS OR INFLAMMATION.

*Vatieties.*—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.

Facial Palsy - Mouth drawn to one side - Everything depends on cause - If a blow is received & paralysis appears soon after prognosis is favorable - If from serous effusion at the base of brain it will be unfavorable - It is often the result of irritation of the stomach & the prognosis is favorable - If from a blow cups to back of the neck, blisters & mercurials & absolute rest - The best thing to restore tone to a muscle is veratria - nux is good - For an old case time is the best cure, in such cases you can do but little - In old cases you make a sub-cutaneous incision, but it will only remove the deformity -

## 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 colored than natural. The diseases produced by this variety are club-foot, some forms of wry neck, contracted limbs, stiff jaw, &c. It generally results from spasmodic affections, or from the muscles being confined for some time to one position.

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

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

### I. PARALYSIS OF ONE LEG OR BOTH.

*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—1. Constitutional remedies.
*a*. Strychnia.
*b*. Cold bath.
*c*. General frictions.
*d*. Nutritious diet.
*e*. Exercise in the fresh air. To accomplish this indication we are generally obliged to use a go-cart.
2. Local measures.
*a*. Frictions.
*b*. Galvanism.
*c*. Acupuncture.
*d*. Mechanical support.
*e*. Operation of Stromeyer.

### II. FASCIAL PALSY.

*Causes.*
*Muscles involved.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—1. Constitutional remedies—the same as those recommended in the other case.

2 Local treatment.

*a* Acupuncture.

*b*. Moxa over the mastoid process.

*c*. Galvanism.

*d*. Excision of a portion of the 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 be necessary to consider each one separately. And first of

### CLUB FOOT.

*Definition.*

*Varieties.*—1. Talapes varus, or inversion. 2. Talapes valgus, or eversion. 3. Talapes equinus. 4. Talapes calcaneous. 5. Talapes dorsalis or phalangeal.

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

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

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

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

*Foot most liable.*—The right.

*Sex most liable.*—The male.

*Variety most common.*—1st, or varus.

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

*Condition of legs and knees.*

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

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

### MYOTOMY, TENOTOMY, AND APONEUROTOMY.

*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.
   " " " " 2d or 4th year.
   " " " " 6th, or any subsequent age.
2. Congenital valgus, 1st, 2d, or 3d degree at birth.
   " " " " 2d or 4th year.
   " " " " 6th, or any subsequent age.
3. Talapes equinus, 1st, 2d, or 3d degree at birth.
   " " " " 2d or 4th year.
   " " " " 6th, or any subsequent age.
4. Talapes calcaneous, 1st, 2d, or 3d degree at birth.
   " " " " 2d or 4th year.
   " " " " 6th, or any subsequent age.
5. Talapes dorsalis, 1st, 2d, or 3d degree at birth.
   " " " " 2d or 4th year.
   " " " " 6th, or any subsequent age.

## CONTRACTED KNEE.

*Varieties.*

*Muscles and tendons involved in each.*

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

*Diagnosis.*—May be confounded with the different varieties of 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.*

## CONTRACTED THIGH.

*Varieties.*

*Muscles and tendons involved.*

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

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

*Prognosis.*

*Effects on the joint if neglected.*

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

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

*Dangers to be apprehended during the treatment of the case.*

## CONTRACTION OF THE FINGERS AND TOES.

*Varieties.*

*Muscles and tendons involved in each.*

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

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

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

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

## CONTRACTION OF THE WRIST.

*Varieties.*

*Muscles and tendons in fault in each.*

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

*Diagnosis.*

*Prognosis.*—Unfavorable generally.

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

## CONTRACTION OF THE ELBOW JOINT.

*Varieties.*

*Muscles and tendons in fault* in each.

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

*Diagnosis.*

*Prognosis.*

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

## CONTRACTION OF THE SHOULDER.

*Varieties.*

*Muscles and tendons in fault in each.*

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

*Diagnosis.*

*Prognosis.*

*Treatment.*—The same as above.

## CONTRACTION OF THE LOWER JAW.

*Varieties.*

*Muscles and tendons in fault.*

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

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

*Prognosis.*

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

## TORTICOLLIS.

*Synonymes.*—Caput opstipum; wry neck.

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

*Symptoms.*

*Causes.*—1. Congenital. 2. Acquired.

First, or congenital.

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

*b.* Paralysis of one set of muscles.

Second or acquired.

*a.* Hemiplegia.

*b.* Chronic rheumatism.

*c.* Fevers of long standing.

*d.* Chronic myositis.

*e.* Mechanical injuries.

*f.* Habit.

*g.* Palsy of extensors of the neck.

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

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

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

*Dissection.*

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

## STRABISMUS.

*Definition.*

*Muscles, tendons, and fascia in fault.*

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

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

*Symptoms.*

*Degree.*

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

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

*Mode of ascertaining which eye is diseased.*

*Effect on vision.*

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

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*—Several indications. 1. Remove the cause. 2. Use mechanical means to correct the deformity. 3. 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. Favorable. 2. Unfavorable.

First, or favorable.

*a.* Disappearance of deformity.

*b.* Improvement in vision.

Second, or unfavorable—

*a.* Operation fails to correct the deformity. Why?

*b.* The eye is everted.

*c.* The eye projects.

*d.* A relapse takes place.

*Methods proposed to overcome these difficulties.*

*Appreciation of the operation.*

LEUCITAS.

*Definition.*
*Muscles in fault.*
*Varieties.*
*Symptoms.*
*Causes.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

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

## IX. SPASM OF THE MUSCLES.

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

### I. STAMMERING.

*Definition.*

*Varieties.*—1. Functional. 2. Organic.

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

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

*Diagnosis.*

*Prognosis.*

*Treatment.*—Various methods have been introduced, but of course the character of the cause will modify the treatment. There are four plans chiefly in vogue:—1. Vocal gymnastics. 2. Speaking with some hard substance between the teeth. 3. Acupuncture. 4. An operation. not to be performed

*History of these operations.*

*Different modes of operating described.*

*Appreciations of these operations.*

### II. TWITCHING OF THE MUSCLES OF THE FACE.

*Varieties.*

*Causes.* Generally neuralgic irritation, increased by excitement

*Diagnosis.*

*Prognosis*

*Treatment.* Blisters & Strychnia endermically & internally - Liq. Arsenicalis 1 to 5 drops of each - if case is obstinate divide muscles by subcutaneous incision -

### 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 cellulosa*, and the *Trichina spiralis*, first described, I believe, by Mr. Owen, of London.

### XI. MALIGNANT DISEASES.

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

---

## VII. DISEASES OF THE ARTERIES.

### I. WOUNDS.

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

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

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

*Diagnosis.*—May be confounded with wounds of veins.

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

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

*Treatment.*—See incised wounds.

### II. ARTERITIS.

*Definition.*
*Comparatively rare.*
*Varieties.*—1. Subacute. 2. Acute. 3. Chronic.
*Causes.*
*Symptoms* of each Variety.
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Products.*
*Treatment.* Blisters the whole length of the vessel.

Scriveners Spasm, result of constant use in writing - Treatment Bathe in tincture of aconite, rest splints - if these means fail divide muscles -

Aneurism - a tumor containing blood and communicating either directly or indirectly with the cavity of an artery - commonly pulsating at its commencement - Divided into thirteen varieties -
1st Spontaneous - from some previous of the artery - prognosis unfavorable - 2d Traumatic - In which the artery is ruptured - prognosis favorable, 3d Internal one involving one of the internal arteries -
4th External - One involving one of the external arteries - 5th True - One in which the coats of the artery are involved in the tumor -
6th False - one in which all the coats of the artery are cut across - 7th Mixed - Blood escaping from a true aneurism, makes a false aneurism - the true aneurism inside of the one last formed -
8th One in which the tumor is small -
9th Diffused - when tumor is large - 10th Dissecting occurs generally in the aorta - blood escaping through a small orifice near or behind the valves, which gradually dissects up the external from the middle coat - 11th Varicose, Artery & vein wounded at the same time & in which the tumor or cyst is between t[illegible]

## 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 deposites between the lining membrane and the proper tissue of the vessel. 2. Thickening of the lining membrane. 3. Ætheromatous deposites in different portions of the vessel. 4. Steatomatous deposites. 5. Ulceration. 6. Softening.

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

### DILATATION.

*Parts of the vessel usually involved.*
*Vessels most liable to be affected.*
*Effect on the shape and size of the vessel.*
*Symptoms by which it may be recognized.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### HYPERTROPHY WITH DILATATION.

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

### CONTRACTION.

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

### RUPTURE.

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

### OBLITERATION.

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

## IV. ANEURISM.

*Definition.*

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

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

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

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

First, or predisposing:

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

*b*. Sex. Male most liable.

*c*. Age. Old persons most liable.

*d*. Location of vessel. Vessels of the lower limb most liable.

*e*. Vocation. Laboring classes most liable.

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

Second or accidental.

*a*. Some violent exertion.

*b*. Wounds.

*c*. Ulceration of the coats of vessel.

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

*Diagnosis*.—The diagnosis is not difficult in the early stages of the complaint. As the 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 "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 fibrine.

*b*. Obliteration of both sac and artery by fibrine.

*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 artery, causes its obliteration.

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

12th - Aneurismal varix - In which there is a direct communication between artery and vein no tumor or cyst intervening - 13th Aneurism by Anastamosis is a tumor by arteries & veins holding free communication with each other & held together by cellular tissue - Called erectile tumor -

Treatment - If in spontaneous aneurism a tumor is found, look out for others for the cause which gave rise to one still exists & in all probability will give rise to others - Males are more subject to them because more exposed to the exciting causes - The patient must just rest the uneasiness to any particular spot - pulse irregular - If aneurism be in the abdomen, the digestion is interfered with - if in the thorax the respiratory is interfered with - In a recent aneurism the tumor always pulsates - The blood can be squeezed out of tumor. It feels warm - In an old case feels hard, as the blood has become partially fluid & partially solid or entirely solid - When blood in tumor becomes solid a cure is accomplished - this is sometimes done by tumor pressing upon the artery, thereby diminishing the flow of blood to the tumor & the tumor being at rest (not agitated) the blood coagulates -

*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, Philips, &c. 6. The use of needles and galvanism at the same time—(Keate and Faraday.)

### COMPRESSION.

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

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

*Modus operandi of compression.*

*Objections to its employment.*

*Appreciation of the method.*

### LIGATURE.

Not properly employed until the time of Hunter. Before this period the operations for the cure of aneurism were rude and dangerous. By some, the sac was opened, the contents turned out, and compresses or the actual cautery applied to arrest the hemorrhage. By others, the sac was emptied, and then an attempt made to tie the bleeding vessels. By others, Aetius, Philogius, Guillemeau, &c., the artery was tied *above* and *behind* the tumour, the latter then opened, and the vessels tied. The dangers of these measures have induced surgeons to abandon them, and we now choose, when an operation is decided upon, between *three different methods* of *applying* a ligature. These are—

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

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

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

### HUNTER'S OPERATION.

*Mode of performing it.*

*Instruments required.*

*Cautions to be observed in the application of the ligature.*

*Immediate effect upon the tumor when the ligature is properly placed.*

*Subsequent effect on the tumour.*

*Immediate effect on the limb.*

*Subsequent effect on the limb.*

*Time required for the establishment of anastomosing circulation.*

*Effect on the general System, and especially the brain.*

*Dressing the wound.*

*After treatment of the case.*

BRASDOR'S OPERATION.

*Mode of performing it.*
*Instruments required.*
*Cautions to be observed in the application of the ligature.*
*Immediate effect upon the tumour.*
*Subsequent effect.*
*Immediate effect on the limb.*
*Subsequent effect.*
*Time required for the establishment of the anastomosing circulation.*
*Effect on the general system.*
*Dressing the wound.*
*After treatment.*

WARDROP'S OPERATION.

*Mode of performing it.*
*Instruments required.*
*Cautions to be observed in the application of the ligature.*
*Immediate effect on the tumour.*
*Subsequent effect.*
*Immediate effect on the limb.*
*Time required for the establishment of the anastomosing circulation here.*
*Effects on the general system.*
*Dressing the wound.*
*After treatment.*

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

*a.* Convulsions.
*b.* Fever.
*c.* Secondary hemorrhage.
*d.* Increase in the size of the 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 - one peculiar symptom is a sort of creaking sound as if a person with dry skin or new matting but Snow- or like a quill splitting - In this form apply compression - if this fail you must tie up the artery - sometimes two ligatures must be applied one above & the other below the tumor - If any difficulty arises from this aneurism (as in cases labor &c) let it alone - dont interfere -

### VARICOSE ANEURISM.

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

### ANEURISMAL VARIX.

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

### ANEURISM BY ANASTOMOSIS.

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

### OSSEOUS ANEURISM.

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

## V. PARTICULAR ANEURISMS.

The symptoms and treatment of each one described.

---

# VIII. DISEASES OF THE VEINS.

## I. WOUNDS.

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

## II. RUPTURE.

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

## III. INFLAMMATION, OR PHLEBITIS.

*Varieties.*—1. Acute. 2. Chronic.

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

*Symptoms.*—Vary with 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, œdema, ulceration of the vessel, calcareous deposites, &c.

*Treatment.*—1. Constitutional. 2. Local. Blood, counter-irritation. Pressure, compression

## IV. AIR IN VEINS.

*Effect produced by the introduction of air into the veins.*
*The manner in which it gains admission.*
*The causes of convulsion and death in these cases.*
*Means of preventing its introduction while an operation is going on.*
*Treatment in the event of its introduction.*

## V. VARICOSE VEIN.

*Nature.*

*Location.*

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

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

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Results.*

*Treatment.*—1. Palliative. 2. Radical.

In all cases of wounds of veins avoid if possible the application of a ligature for reasons that will at once suggest themselves - Compression will in most cases stop the bleeding - In lacerated wounds you sometimes apply a ligature - particularly when from the anatomy of a part compression cannot be applied -

Air in Veins - The result of the introduction of air into veins is death - It gets in through an orifice made by surgeon (or otherwise) & passes on along the tube & enters the right side of the heart & distends the heart so much that it is not able to contract - To prevent the entrance of air, before commencing an operation compression should be made on the vessel between the heart & the wound - But if air should get in, place the patient in a horizontal position apply compression to his chest so as to imitate breathing - throw water in his face - apply stimulators, galvanism &c -

Varicose Vein - Common - especially in women who have borne children - or in laboring persons - produced mostly by some mechanical cause - generally occurs in veins of the leg - prognosis unfavorable - Treatment - palliative - in case of a leg apply a roller from toe to thigh - or a lace stocking - dont think of an operation Radical - Ligatures - dont perform an operation for though it may cure for a while, it will surely return - most probably in some other part -

Phlebolithes - the development of a calcareous deposit in mucous coat of the rectum, at the place where Hemmoroids take place & for which the deposit must not be mistaken - Treatment - Cut it out or apply slightly astringent applications -

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

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

*Dangers of these measures.*

*Appreciation of the different methods.*

### VI. OSSIFICATION.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

### VII. PHLEBOLITES.

*Definition.*

*Veins in which they are usually found.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Chemical composition.*

*Treatment.*

### VIII. MALIGNANT DISEASES.

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

---

## IX. DISEASES OF THE LYMPHATICS.

### I. WOUNDS.

*Varieties.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Results.*

*Mode of healing.*

*Treatment.*

### II. RUPTURE.

This lesion is stated to have occurred in a patient of Guiffort's, but the symptoms are too obscure to merit our attention. It was supposed by Morton to be one cause of consumption; by 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 deposites 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 EXTIRPATION OF A LARGE NUMBER OF GLANDS.

---

## X. DISEASES OF THE NERVES.

### I. WOUNDS.

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

### II. STRETCHING AND RUPTURE.

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

### III. NEURITIS.

*Varieties.*—1. Acute. 2 Chronic.
*Causes.*—1. Constitutional. 2. Local.
*Symptoms.*—Depend upon the nature of the attack.
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Terminations.*—Resolution, effusion of lymph, ulceration, hypertrophy, atrophy, hardening, softening.
*Treatment.*

### IV. NEURALGIA.

*Definition.*
*Varieties.*
*Causes.*—1. Those which act upon the nerve itself. 2. Those which operate through the system at large.
*Symptoms.*
*Parts most liable to be attacked.*
*Diagnosis.*
*Prognosis.*
*Pathology.*
*Treatment.*—Indications—1. Remove the cause, whether *constitutional* or *local*. 2. Palliate the pain. 3. Divide the nerve. 4. Excise a portion of the nerve. 5. Acupuncturation. 6. Electro-magnetism, &c. 7. Moxa, &c.

### V. ANOMALOUS NERVOUS AFFECTIONS.

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

## VI. HYSTERICAL NEURALGIA.

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

## VII. TUMOURS.

*Varieties.*—Solid, or encysted.

*Location.*—In the neurilema; between the superficial fibres of a nerve, or they may implicate all the fasciculi at the part attacked; and again, they may be developed upon the extremity of a divided nerve in the shape of a little button. Lastly, they may occupy the large and deeply seated nerves, or the superficial and cutaneous; when developed in the latter situation, the tumour is called "*painful subcutaneous tubercle.*"

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

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

*Diagnosis.*
*Prognosis.*
*Pathology.*

*Treatment.*—1. Palliative. 2. Radical.

Palliative means—

*a.* Leeches.
*b.* Counter irritation.
*c.* Fomentations.
*d.* Anodynes.

Radical means—

*a.* Division of the nerve above the tumour.
*b.* Extirpation of the tumour.
*c.* When the tumour is a *cyst*, puncture followed by compression.

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

## VIII. TETANUS.

*Definition.*

*Varieties as to muscles affected.*—1. Opisthotonos. 2. Emprosthotones. 3. Pleurosthotonos. 4. Trismus, or locked jaw.

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

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

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

*Diagnosis.*
*Prognosis.*
*Pathology.*

*Treatment.*—1. General. 2. Local.

### IX. PARALYSIS.

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

### X. OTHER ORGANIC LESIONS.

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

---

## XI. DISEASES OF THE CELLULAR TISSUE.

### I. SIMPLE INFLAMMATION.

See "Inflammation."

### II. PHLEGMON, OR CIRCUMSCRIBED INFLAMMATION.

See "Phlegmon"

### III. ERYSIPELATOUS INFLAMMATION.

See "Erysipelas."

### IV. CARBUNCLE.

See "Charbon or Carbuncle."

### V. ABSCESS.

See "Abscess."

### VI. HEMORRHAGE.

*Causes.*—Mechanical injuries, and diseases of a peculiar character, as purpura, scorbutus, typhus, &c.
*Character of the blood.*
*Symptoms.*
*Prognosis.*
*Diagnosis.*
*Treatment.*

### VII. SEROUS EFFUSION.

*Synonym.*—Œdema, 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.*
*Dissection.*
*Treatment.*

## V. ATROPHY.

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

## VI. TUMOURS OF VARIOUS KINDS.

See "Tumours."

---

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

---

# THIRD DIVISION, OR DISEASES OF REGIONS AND ORGANS.

## I. INJURIES OF THE HEAD.

### I. WOUNDS.

*Importance of these injuries.*
*Classification.*
*a.* Wounds involving the scalp alone.
*b.* Wounds involving the scalp and bones.
*c.* Wounds involving the brain and its membranes, as well as the scalp and bones.

#### *a.* SUPERFICIAL WOUNDS.

##### I. INCISED WOUNDS.

*Causes.*
*Symptoms.*
*Prognosis.*
*Results.*
*Treatment.*

##### II. LACERATED WOUNDS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Results.*
*Treatment.*

##### III. CONTUSED WOUNDS.

*Causes.*
*Symptoms.*
*Prognosis.*
*Results.*
*Treatment.*

##### IV. PRODUCTS OF CONTUSED WOUNDS.

*a.* BLOODY TUMOUR.

*b.* SUPPURATION BETWEEN SCALP OR PERICRANIUM AND BONE.

*c.* SEPARATION OF DURA MATER.

Superficial Wounds - Treat same as in any other part of the body - Shave the hair from around the wound - bring the parts together by adhesive plaster

In Bloody tumors do not open the integuments to let out the fluid, but apply compression by means of adhesive plaster all over -

V. PUNCTURED WOUNDS.

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

VI. WOUNDS OF TEMPORAL ARTERY.

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

## *b.* WOUNDS INVOLVING THE SCALP AND BONES.

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

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

II. PENETRATING WOUNDS.

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

III. GUN-SHOT WOUNDS.

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

## *c.* WOUNDS INVOLVING THE BRAIN AND ITS MEMBRANES, ETC.

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

ENCEPHALOCELE AN OCCASIONAL PRODUCT OF THESE WOUNDS.

*Definition.*
*Symptoms.*
*Prognosis.*
*Diagnosis.*
*Results.*
*Treatment.*

## II. DISEASES OF THE SCALP, &c. &c.

### I. ERYSIPELAS.

See "Erysipelas."

### II. ANTHRAX.

See "Anthrax."

### III. TRAUMATIC NEURALGIA.

See "Neuralgia."

### IV. PERICRANITIS.

### V. THICKENING OF PERICRANIUM.

### VI. TUMOURS OF THE SCALP.

See "Tumours."

## III. FRACTURES OF THE BONES OF THE HEAD.

*Causes.*
*Varieties.*
*Parts of the cranium most liable to fracture.*
*Age most liable.*
*Symptoms.*—Depend on location of fracture, &c.
*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.*

Concussion - Is that condition of the organism in which the whole mass is thrown into a state oscillation - the extent amounts to first Stunning in which the effects pass off soon, dizziness, slight incoherence - Talk con of the air for several weeks - Second - Loss of all consciousness, stupidity - pupil of the eye sometimes contracted - feeble pulse - cold skin - nose and often involuntary discharge from the rectum - if patient be moved he is sometimes thrown into convulsions - When patient gets well he is generally changed, easily excited - Never bleed until reaction has taken place - give some wine & water. if he cannot swallow throw some down with up his nature - when reaction takes place bleed - if there be convulsions proceed to injections &c at once - generally however he will do

Compression - That condition of the organ in which some part of it is subject to compression - Symptoms of course they depend on the nature of the cause - Loss of consciousness stertorous respiration - Skin warm & moist - retention of urine - involuntary discharge of faeces - pulse slow, laboring & easily extinguished - pupil dilated - Shave the head & carefully examine the cranium - if patient be paleid on one side then the injury is on the other - if there be symptoms of compression, no matter whether the integuments be wounded or not cut down at once & raise the depressed bone - institute the most active antiphlogistic treatment - If a man has received an injury on the head, but has been walking about for several days, & then suddenly falls down - then is pus there - bleed, cupp - blister - purge - give calomel - If then fail trephine in five or six hours from the time -

If patient is partially deprived give mercury in small doses -

## V. COMPRESSION OF THE BRAIN.

*Definition.*
*Illustration of the influence of pressure upon the brain.*
*Causes* —Depressed bone, effused blood, collection of pus, &c.
*Symptoms.*—Depend on the nature of the cause.
*Prognosis.*—Depends on—1. Extent of surface involved. 2. Location of the compressing body. 3. Location with reference to *depth*. 4. Nature of compressing body. 5. Suddenness with which compression is applied.
*Diagnosis.*
*Manner of ascertaining the seat of the injury.*
*Manner of ascertaining the nature of the compressing body.*
*Dissection.*
*Results.*
*Treatment.*—Varies with cause.—
*a*. When the bone is depressed.
*b*. When effused blood is the cause.
*c*. When pus constitutes the compressing agent.

### TREPHINING.

*History of the operation.*
*Diseases of the head for which it is employed.*
*Dangers of the operation.*
*Parts to be avoided in applying the instrument.*
*The operation itself described.*
*Dressing.*
*After treatment.*
*Manner in which the opening is closed.*

---

## PARACENTISIS.

INFLAMMATION OF BRAIN.—(See "Effusion.")

---

## II. INJURIES AND DISEASES OF THE SPINE.

*Classification.*
*a*. Injuries and diseases of the spinal column.
*b*. Injuries and diseases of the spinal marrow and its nerves. 1. Concentric diseases of the true spinal marrow. 2. Eccentric diseases or those attacking the incident or excitor nerves. 3. Diseases of the reflex, or motor nerves. 4. Spinal irritation.

## *a.* INJURIES AND DISEASES OF THE SPINAL COLUMN ITSELF.

### I. FRACTURES.

*Liability.*

*Causes.*—External violence directly or indirectly applied.

*Usual seat of fracture.*—Spines, bony 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.

*Vertebræ 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 lardosis.

*Causes.*—Predisposing and immediate.

*Prophylaxis.*

*Symptoms.*—Depend on the variety of the defect.

*Prognosis.*—Depends on the age of the individual, the duration, cause, degree, and complication of the case.

*Diagnosis.*—May be confounded with *caries, partial paralysis, natural inequality in size* of the two halves of the body, &c.

*Pathology.*

*Effects on the spinal column, its contents, and the health of the individual.*

*Question of marriage.*

*Treatment.*

Fractures — The result of direct force — prognosis about the fourth cervical extremely unfavorable — Symptoms — great difficulty of respiration — the integuments become cold — often moist swelling of the abdomen — lower extremities entirely insensible possibly may recover — my case however — though the spine is cut though the patient may recover, he will however lose the use of his lower extremities — generally the prognosis is unfavorable — In fracture of the spinous processes alone — used off inflamation in a few weeks the patient will be well —

Luxation — liability not great — cervical most generally — mostly between first & second vertebrae — Symptoms for most part same as in fracture produced often by the twisting of the head — The patient cannot turn his head — difficult respiration — and difficult deglutition — prognosis often grave if the patient be willing better let it alone — if he insist ~~to~~ on your doing something, tell him he may die in the attempt at reduction To reduce stand behind the patient grasp him under the chin with both hands around so that it is moved lifting it up & suddenly bring it around — assistant holding the patient firm —

Spontaneous — Luxation of first cervical — Prognosis as unfavorable as can be — Place the patient in a horizontal position — Leech, cups & blister — if he be of a scrofulous disposition give iodine — From the injury, by a blow, the atlas may have inflamation excited in it & so on until it is nearly removed — The patient complains of his head being too heavy — pain shooting down the back — turns head to one side — afterwards if not relieved, there is great constitutional disturbance — rigors — & discharge pus —

Curvature — A deviation of the column from its natural position — The posterior curve is a regular curve — in a sharp curve there is caries of the spine — Predisposing causes are age young children most subject — sex — in every hundred cases ninety are girls & ten boys — immediate cause — poor physical education, such as high pillows, they are very injurious — The younger the patient the easier to cure — The duration of the disease also modifies the cure — It is no disease of the bones consists (the lateral) in excessive contraction of one set of muscles — after a certain time certain changes take place in the spine, nature throws out bony matter to protect the spine from further curvature — then is first anchylosis or second swelling of the vertebrae — Makes the patient feeble — The physician will often be called on to determine whether the person be marriagable — he must be guided by the condition of the pelvis, if it be not distorted but mature & large enough to admit the passage of a child's head, he must decide affirmatively & vice versa — Treatment — first thing in the morning is a cold bath — or gelatin diet careful as to the kind of bed — after the bath apply the apparatus of Dr O. H. Mitchell in order to make extension of the spine, which must be ~~for~~ hours — then take

ank of this Spencer cart & put in bed and an apparatus to stretch up extension and counter-extension shall be put on for an hour or two - then put on the Corsets - In this manner gradually using these contrivances the patient may be cured, if the case be not too old -

### V. SHORTENED SPINE.

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

### VI. CARIES OF SPINE.

*Liability.*—Children most liable; may occur in adults.

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

*Symptoms.*—Vary in the 1st, 2d, and 3d stages; and also depend on the age of the individual.

*Prognosis.*

*Diagnosis.*

*Effects upon the viscera of the thorax and abdomen, and general health of the patient.*

*Dissection.*

*Treatment.*

### VII. ABSCESS.

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

### VIII. EXOSTOSIS.

*Effects of these tumours on the functions of the spine, and those of the adjacent viscera.*

### IX. ANCHYLOSIS.

*Effects of this condition of the joints upon the functions of the column.*

### X. SPINA BIFIDA.

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

## *b.* INJURIES AND DISEASES OF THE SPINAL MARROW, ITS MEMBRANES AND NERVES.

### I. CONCENTRIC DISEASES.

#### 1. 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 products.*—Convulsions, epilepsy, paralysis agitans, either general or partial, tremor mercurialis.
*Treatment.*

VI. INFLAMMATION OF THE MEMBRANES, OR SPINAL MENINGITIS.

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

## II. ECCENTRIC DISEASES, OR THOSE OF THE EXCITOR NERVES.

These are certain forms of epilepsy, puerperal convulsions, tetanus, hydrophobia, hysteria, chorea, stammering, asthma, vomiting, tenesmus, strangury, and abortion. Most of these affections are treated of under other heads.

## III. DISEASES OF THE REFLEX OR MOTOR NERVES.

Spasmodic strabismus, spasmodic tic, spasmodic torticollis, spasm of the respiratory nerves—already referred to.

IV. SPINAL IRRITATION.

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

---

## III. INJURIES AND DISEASES OF THE EYE.

### I. INJURIES, &c. OF THE EYELIDS.

#### WOUNDS.

*Varieties.*
*Symptoms.*
*Prognosis.*
*Results.*
*Treatment.*

#### INFLAMMATION OF THE LIDS.

*Texture usually involved.*
*Causes.*
*Varieties.*
*Symptoms.*
*Prognosis.*
*Results.*
*Treatment.*

#### ŒDEMA

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

#### OPHTHALMIA TARSI.

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

#### PSOROPHTHALMIA.

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

HORDEOLUM.

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

TYLOSIS.

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

MADAROSIS.

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

TRICHIASIS.

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

DISTICHIASIS.

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

PTOSIS.

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

ECTROPIUM.

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

### ENTROPIUM.

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

### ANCYLOBLEPHARON AND SYMBLEPHARON.

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

### EPICANTHUS.

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

### TUMOURS.

*Varieties.*—Nævi materni, encysted, half-encysted, tarsal tumours, chalazion, or grando, milium, and verucæ.
*Causes of each.*
*Symptoms of each.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### MALIGNANT DISEASES.

The lids, like all other portions of the body, are sometimes involved in malignant diseases, by which they are partially or entirely destroyed. These cases are generally troublesome, and often require an extensive operation for their relief. (See Blepharoplastic operations.)

## II. INJURIES AND DISEASES OF THE CONJUNCTIVA.

### FOREIGN BODIES LODGED IN THE EYE.

*Various kinds.*
*Symptoms.*
*Mode of examining the lids.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### WOUNDS OF THE CONJUNCTIVA.

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

## SIMPLE INFLAMMATION OF CONJUNCTIVA.

*Causes.*—1. Constitutional. 2. Local.
*Symptoms.*
*Prognosis.*
*Diagnosis.*
*Effects of products.*
*Treatment.*—1. General. 2. Local.

## CATARRHAL OPHTHALMIA.

*Definition.*
*Synonymes.*—Conjunctivitis catarrhalis, conjunctivitis puromucosa catarrhalis, ophthalmia purulenta metior, cold blight, &c.
*Causes.*—Cold in some shape, often accompanying influenza, and is occasionally epidemic.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Seat of the affection.*—Seldom involves any other tissue than the conjunctiva.
*Terminations.*
*Treatment.*

## PURULENT OPHTHALMIA.

*Definition.*
*Varieties.*—That of newly-born children, and that attacking adults. Acute and chronic.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Terminations or products.*—1. Sloughing of cornea. 2. Ulceration. 3. Opacity of cornea. 4. Bursting of cornea. 5. Adhesion of iris. 6. Detachment of conjunctiva. 7. Staphyloma. 8. Ectropium, or Entropium.
*Treatment.*

## GONORRHŒAL 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.*

Conjunctivitis – When arises from cold – Shut the patient – purge & give Vin. Rad. Colchici. gtt X^m which is almost a specific in this disease. Shutter & apply soothing applications to the eye & that continually –

## PUSTULAR OPHTHALMIA.

*Definition.*
*Causes.*
*Age most liable.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## SCROFULOUS OR STRUMOUS OPHTHALMIA.

*Definition.*
*Causes.*—1. Predisposing. 2. Exciting.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Results.*
*Treatment.*

## VARIOLOUS OPHTHALMIA.

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

## MORBILLIOUS AND SCARLATINOUS OPHTHALMIA.

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

## ULCERS OF THE CONJUNCTIVA.

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

## GRANULATED CONJUNCTIVA.

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

### HYPERTROPHY OF CONJUNCTIVA.

*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Effect on lids.*
*Treatment.*

### PTERYGIUM.

*Definition.*
*Varieties.*—1. Tenue. 2. Crassum. 3. Malignant. 4. Single. 5. Pannus.
*Location.*—Usually the inner canthus.
*Age most liable.*—Adult.
*Causes.*—Often obscure.
*Symptoms and growth.*
*Diagnosis.*
*Prognosis.*
*Pathology.*
*Treatment.*

### XEROMA, OR DRY CONJUNCTIVA.

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

### POLYPI, WARTS, AND OTHER EXCRESCENCES OF THE CONJUNCTIVA.

*Characteristics of these tumours.*
*Causes.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## III. INJURIES AND DISEASES OF THE CORNEA.

### WOUNDS.

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

### FOREIGN BODIES IN THE CORNEA.

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

## INFLAMMATION OF THE CORNEA.

*Varieties.*—1. Acute. 2. Chronic. 3. Partial. 4. Complete. 5. Scrofulous.

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

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Effects.*

*Treatment.*

## SUPPURATION OF THE CORNEA.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Effects.*

*Treatment.*

## ULCERS OF THE CORNEA.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Effects.*

*Complications.*—Hernia corneæ, fistula corneæ, &c.

*Treatment.*

## OPACITY OF THE CORNEA.

*Varieties.*—1. Arcus senilis. 2. Nebula. 3. Albugo, or leucoma. 4. Macula. 5. Congenital.

*Causes.*

*Symptoms.*—In each variety.

*Diagnosis.*

*Prognosis.*

*Effect on vision.*

*Treatment.*—1. General remedies. 2. Local remedies. 3. Cunier's operation. 4. Bigger's operation.

## STAPHYLOMA.

*Definition.*

*Extent.*—1. Partial. 2. Complete.

*Shape.*—Varies. Hence we have the staphyloma hemisphericum, globosum, conicum, racemosum, &c.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Structure.*

*Treatment.*

### CONICAL CORNEA.

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

## IV. INJURIES AND DISEASES OF THE SCLEROTICA.

### WOUNDS.

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

### SCLEROTITIS, OR INFLAMMATION OF THE SCLEROTICA.

*Varieties.*
*Causes.*
*Diagnosis.*
*Prognosis.*
*Results.*
*Treatment.*

### STAPHYLOMA SCLEROTICÆ.

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

### CYSTS AND TUMOURS OF THE SCLEROTICA.

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

## V. INJURIES AND DISEASES OF THE AQUEOUS MEMBRANE AND CHAMBERS.

### FOREIGN BODIES LODGED IN THE ANTERIOR CHAMBER.

*Nature of these bodies.*
*Manner of introduction.*
*Symptoms produced by their presence.*
*Prognosis.*
*Treatment.*

HÆMOPHTHALMUS.

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

AQUO-CAPSULITIS.

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

HYPOPYON.

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

DROPSY OF THE ANTERIOR CHAMBER.

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

## VI. INJURIES AND DISEASES OF THE IRIS.

IRIDEREMIA.

*Definition.*
*Causes.*
*Appearance of the eye.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

COLOBOMA IRIDIS.

*Definition.*
*Causes.*
*Appearance of the eye.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

## CHANGE OF COLOUR IN THE IRIS.

*Causes.*
*Appearance of the eye.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

## PROCIDENTIA, OR STAPHYLOMA IRIDIS.

*Definition.*
*Causes.*
*Symptoms.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

## SYNECHIA.

*Definition.*
*Varieties.*—Anterior and posterior.
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## FUNGOUS EXCRESCENCES AND TUMOURS OF THE IRIS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## MYOSIS.

*Definition.*
*Causes.*
*Symptoms.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

## MYDRIASIS.

*Definition.*
*Causes.*
*Symptoms.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

## TREMULOUS IRIS.

*Definition.*
*Causes.*
*Symptoms.*
*Effect on vision.*
*Prognosis.*
*Treatment.*

## IRITIS.

*Definition.*

*Varieties.*—1. Acute. 2. Chronic. 3. Idiopathic. 4. Sympathetic, which includes the syphilitic, arthritic, &c.

*Causes.*—1st, or constitutional, as yphilis, gout, rheumatism, scrofula, cold, wet, &c.

2d, or local.—Direct injuries, over exertion of the eye, &c.

*Age most liable.*—Adult and old age. Rarely occurs before puberty.

*Symptoms.*—1 Constitutional. 2. Local. These are of course modified by the extent, duration, and intensity of the inflammation.

*Effects of this inflammation.*—1. Effusion of coagulable lymph. 2. Change in the color of the iris. 3. Displacement of the iris. 4. Hypopion. 5. Effusion of blood in the chambers. 6. Adhesions between the iris and cornea, or capsule of the lens. 7. Loss of motion in the iris. 8. Closure of the pupil. 9. Atrophy of the globe. 10. Opacity and thinning of the cornea. 11. Partial or entire loss of vision.

*Diagnosis.*

*Prognosis.*—Depends on circumstances; for the most part it is unfavorable.

*Treatment.*—Three indications—1. Arrest the inflammation. 2. Prevent the further effusion of lymph, and promote the absorption of that already secreted. 3. Prevent the contraction and obliteration of the pupil. Remedies to be employed for the accomplishment of these indications.

## OPERATIONS FOR ARTIFICIAL PUPIL.

*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* BOTH *when both eyes are diseased.*
*Preparation of the patient for an operation.*
*Various operations described.*—Three principal methods at present in vogue,
1 Incision. 2. Excision 3. Separation.
*Relative merits of each.*
*Formation of an artificial pupil in the sclerotica.*

## VII. DISEASES OF THE CHOROID COAT.

### CHOROIDITIS.

*Definition.*
*Varieties.*—Acute and chronic.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### DEFICIENCY OF PIGMENT.

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

## VIII. DISEASES OF THE RETINA.

### RETINITIS.

*Definition.*
*Varieties.*—Acute and chronic.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### AMAUROSIS.

*Definition.*

*Synonymes.*—Gutta serena, suffusion.

*Varieties.*—1. Idiopathic. 2. Sympathetic. 3. Symptomatic. 4. Incipient, or recent. 5. Inveterate, or confirmed. 6. Partial. 7. Complete. 8. Organic. 9. Functional. 10. Continued. 11. Intermittent. 12. Periodical. 13. Local, or nervous. 14. Complicated.

*Cause.*—Several classes—

1. Those operating immediately on the nervous apparatus of the eye.

2 Those operating indirectly through the medium of some other organ, or by sympathy.

3. Those operating through the medium of the sensorium.

4. Congenital causes.

*Symptoms.*—Depend on the stage at which we examine the case.

*Diagnosis.*—May be confounded with cataract, glaucoma, muscæ, &c. Refer to the catoptric examination.

*Prognosis.*—Depends on the *cause*, *duration*, and *degree* of the attack. Influence on sound eye when but one is affected.

*Pathology.*

*Treatment.*—Modified to suit the peculiarities of the case.

WEAKNESS OF SIGHT.

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

MUSCÆ VOLITANTES.

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

HEMERALOPIA.

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

NYCTALOPIA.

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

HEMIOPIA.

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

NEAR-SIGHT.

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

FAR-SIGHT.

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

PHOTOPSIA.

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

CHRUPSIA, OR COLORED VISION

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

## IX. DISEASES OF THE LENS AND CAPSULE.

### CATARACT.

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

*Varieties.*—Lenticular, capsular, capsulo-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, &c. &c.

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

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

*Progress of the defect.*

*Question of operating when but one eye is affected.*

*Treatment.*—Nothing short of an operation will cure the complaint. Several operations have been devised, viz: 1. Extraction. 2. Depression, or couching. 3. Reclination. 4. Solution or absorption. (Anterior and posterior operation.)

*Appreciation of these different operations.*

*Description of each, and the instruments required for its performance.*

*Preparation of the patient.*

*Season most favorable for operating.*

*After treatment.*

*Condition of the eye when the operation succeeds.*

*Cataract glasses.*

### GLAUCOMA.

Although this affection, strictly speaking, cannot be considered an affection of the lens in every case, yet as glaucoma is often confounded with cataract, and the lens is often involved, it may be as well to speak of it under this head.

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

## X. DISEASES OF THE GLOBE OF THE EYE.

### INFLAMMATION.

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

### HYDROPHTHALMIA.

*Definition.*
*Varieties.*—1. Dropsy of the anterior and posterior chambers. 2. Dropsy of the vitreous humour. 3. General dropsy of the eye-ball.
*Causes.*
*Symptoms in each form.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### ATROPHY OF THE BALL.

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

### COLLAPSE FROM SUPPURATION.

*Character of the defect.*
*Mode of relieving the deformity.*

### EXOPHTHALMIA.

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

## XI. AFFECTIONS OF THE LACHYRYMAL ORGANS.

### INFLAMMATION OF THE LACHRYMAL GLANDS.

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

### ENLARGEMENT AND INDURATION OF THE LACHRYMAL GLAND.

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

### EPIPHORA, OR EXCESSIVE SECRETION OF THE TEARS.

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

### STILLICIDIUM LACHRYMARUM.

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

## XII. DISEASES OF THE CARUNCULA LACHRYMALIS.

### ENCANTHIS.

*Definition.*
*Varieties.*—Innocent and malignant.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### TUMOURS OF VARIOUS KINDS.

## XIII. DISEASES OF THE LACHRYMAL SAC AND DUCT.

### INFLAMMATION.

*Causes.*
*Varieties.*—Acute and chronic.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

ABSCESS.

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

FISTULA LACHRYMALIS.

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

PERMANENT OBSTRUCTION OF THE NASAL DUCT.

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

CONGENITAL DEFICIENCY OF THE NASAL DUCT.

Operation for its relief—(see Berard.)

## XIV. MALIGNANT DISEASES OF THE EYE.

FUNGOUS EXCRESCENCES.

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

CARCINOMA OF THE EYE.

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

FUNGOUS HEMATODES OF THE EYE.

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

MELANOSIS OF THE EYE.

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

## XV. EXTIRPATION OF THE EYE.

Mode of performing the operation.

## XVI. INTRODUCTION OF AN ARTIFICIAL EYE.

*Preparation of the eye.*
*Mode of placing it.*

## XVII. ANALOGOUS DEGENERATIONS OF THE EYE.

### OSSIFICATIONS AND CALCULOUS CONCRETIONS.

## XVIII. ENTOZOOA IN THE EYES.

*Kinds usually met with.*
*Symptoms produced by their presence.*
*Effect upon the eyes.*
*Treatment.*

## XIX. DISEASES OF THE ORBIT.

### WOUNDS.

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

### FRACTURES OF THE BONES.

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

### FOREIGN BODIES LODGED IN THE ORBIT.

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

### INFLAMMATION OF THE CELLULAR TEXTURE OF THE ORBIT.

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

### TUMOURS IN THE ORBIT.

*Various kinds.*
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

# IV. DISEASES OF THE EAR.

*Anatomy of the Ear.*—Divided into external, middle, and internal ear. The external ear consists of the auricle, and the meatus auditorius externus. The middle ear consists of the tympanum and its appendages, namely, the membrana tympani; the four ossicula auditus with their ligaments and muscles; the eustachian tube; and the mastoid cells.

The internal ear, or labyrinth, as it is termed, from its complexity of organization, is divided into bony and membranous labyrinth—the bony is subdivided into vestibule, three semicircular canals, and the cochlea—the membranous labyrinth is found within the semicircular canals and the vestibule and contains the thin serous fluid called liquor cotunnii.

## MALFORMATIONS OF THE EAR.

### MALFORMATIONS OF THE AURICLE.

*Cases most frequently met with.*—1. Deficiency of helix, and sometimes its division from the lobus. 2. An entire absence of the lobus—its division by a slit into an anterior and posterior portion—or its attachment wholly or partially to the integuments of the side of the head. 3. The tragus and anti-tragus are sometimes united, or inverted so as to partially close the opening of the meatus. 4. The total absence of the auricle. 5. An enormous enlargement of the auricle.

*Causes.*—1. Congenital. 2. Acquired, from wounds, bites, ulceration, sloughing—an increase in size is often the result of manipulation, or of the dress stretching the part.

*Effect upon sense of hearing.*

*Treatment.*—By artificial ear, by removal of overlapping portion, by dilatation.

### MALFORMATIONS OF MEATUS AUDITORIUS EXTERNUS.

*Most frequent varieties.*—1. A very narrow canal. 2. An unusual shortness of canal. 3. A total absence of canal. 4. A closure of the canal at birth by a slimy caseous matter. 5. A closure of the orifice by the integument stretching across it and being attached to its margin; or by a membrane in any part of the canal; by a contraction in the cartilage, or by undue ossification of the bony part of the tube.

*Causes.*—Mostly congenital—sometimes acquired.

*Effect upon hearing*

*Examination of meatus externus.*

*Prognosis.*—Modified by cause.

*Treatment.*—Varies with the case.

### MALFORMATIONS OF THE MIDDLE EAR.

*Importance.*—Most of them are attended with deafness, and the cause is generally not to be removed.

*Most frequent variations.*—1. The cavity has been found much smaller than usual. 2. The cavity has been inordinately large. 3. The outer wall has been ossified—in fact a bony plate has occupied the place of the membrana tympani. 4. The ossicula auditus are often varied in their conformation, thus one or more of them may be too small or too large or deficient in ossification, or ossified together, or altogether wanting. Supernumerary bones have also been found. 5. The tympanum has been found filled with a soft white matter resembling inspissated albumen; also with a scrofulous deposite. 6. The eustachian tube may be wholly or partially obliterated.

*Causes.*—1. Constitutional. 2. Acquired.

*Diagnosis.*—An examination will teach the condition of the membrana tympani. Catheterizing and injection of air will teach the condition of the eustachian tube.

*Prognosis.*—Only favorable in partial obliteration of the eustachian tube.

*Treatment.*—Varies with the kind and cause.

### MALFORMATIONS OF THE INTERNAL EAR.

Various malformations of the labyrinth have been noticed—it has been entirely wanting—it has been deficient in ossification—change in quantity and consistence of the liquor cotunnii has also been observed.

Such deficiencies are of course beyond the reach of art.

### WOUNDS OF AURICLE.

*Usual varieties.*—Incised, lacerated, contused.

*Treatment.*—Differs in no respect from that for similar injuries in other parts; bearing in mind the deformity resulting from the loss of even a small portion, union is always to be attempted.

## PARTICULAR DISEASES.

### OTITIS.

*Definition.*—Generic term, implying general disease of the whole organ.

*Division of.*—Acute, chronic, external, internal.

External includes inflammation of the auricle, and of the meatus auditorius externus.

Internal includes inflammation of the tympanum and labyrinth.

*Causes.*—1. Exciting. 2. Predisposing.

*Symptoms and consequences.*—As acute inflammation seldom attacks the entire organ at the same time, or from the same cause, these vary according to the structure of the part inflamed, and will be described under the heads of diseases of particular parts.

### ACUTE EXTERNAL OTITIS.

*Seat.*—Sometimes commences simultaneously in the auricle and meatus—more frequently it extends from the auricle to the canal—it however is sometimes limited to the meatus.

*Most frequent forms.*—Erysipelas, erythema, in short, all the inflammatory actions, either common or peculiar, which affect the cutaneous system.

*Causes.*

*Symptoms.*—Vary with the form.

*Consequences.*

*Diagnosis.*

*Prognosis.*—Favorable.

*Treatment.*—1. Local. 2. General.

## ACUTE INTERNAL OTITIS.

### INFLAMMATION OF TYMPANUM AND LABYRINTH.

*Forms.*—Primary. Consecutive.

*Seat.*—Mucous lining membrane at first, then extending to cellular tissue, to eriosteum and to the bone itself.

*Causes.*—Exciting. Predisposing.

*Symptoms.*—Agree with those of external otitis, differing only in consequence of their much greater severity, and of the circumstances of the matter formed not finding a ready outlet.

*Consequences.*

*Diagnosis.*—May be confounded with external otitis, with meningitis or phrenitis.

*Prognosis.*—Grave—as troublesome otorrhœa may result—the ossicula may be lost—the membrana tympani or the mastoid cells may be perforated—permanent closure of the eustachian tube may result—or phrenitis, meningitis, and death may follow.

*Treatment.*

## CHRONIC OTITIS.

### DIVISION—INTO EXTERNAL AND INTERNAL.

External is divided into that of the auricle and that of the auditory meatus.

Chronic Inflammation of the auditory meatus includes—

1st. Erythema of meatus with diminished secretion.

2d. Inflammation of dermal membrane with inordinate secretion.

3d. Polypus, fungus, and vegetations of auditory canal.

4th. Sinus of meatus.

5th. Inordinate ceruminous secretion.

6th. Aphthæ or herpetic ulcerations of lining membrane of meatus.

### CHRONIC INFLAMMATION OF THE AURICLE.

*Definition.*
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—Local and constitutional, as the local affection is often maintained by general derangement of the health.

## CHRONIC INFLAMMATION OF MEATUS AUDITORIUS EXTERNUS.

### ERYTHEMATIC CHRONIC DISEASES OF THE MEATUS.

*Synonyme.*—l'Otite chronique seche. (Roche.)
*Causes.*—General derangements of health.
*Symptoms.*—Uneasiness, slight pain, itching, dry sensation, difficulty of hearing, tinnitus aurium.
*Diagnosis.*—Tube unusually dry—wax in small quantity—most frequently a vitiated secretion of a white or yellowish scaly matter.
*Prognosis.*—Favorable.
*Treatment.*—Attention to general health—tonics—counter irritants—astringents.

### II. CHRONIC INFLAMMATION OF DERMAL MEMBRANE WITH INORDINATE SECRETION.

*Synonymes.*—Humid chronic external otitis, (Roche,) mucous or catarrhal otorrhœa. (Itard and Andral.)
*Frequency of occurrence.*—Very frequent.
*Age most liable.*—Childhood—sometimes occurs in old age.
*Causes.*—Acute inflammation—irritation of dentition—metastasis of gout, gonorrhœa, and mucous ophthalmia—presence of a foreign body.
*Symptoms.*—Usually mild—uneasiness—audition slightly diminished—profuse discharge either serous, mucous, or puriform, or mixed.
*Diagnosis.*
*Prognosis.*
*Treatment.*—Removal of the cause—improvement of general health—cautious use of astringents.

### III. POLYPUS, FUNGUS, AND VEGETATIONS OF AUDITORY CANAL.

*Difference between them.*—Polypus is oval or round, attached by a single root, usually regular in its shape and firm in consistence. Fungus is a mass of exuberant granulations, soft and vascular, irregular in its shape and attachments, and always attended with free discharge. Vegetations consist of numerous small diseased growths, sometimes soft and fungoid, at others, firm and conical, and attended with slight discharge.

*Causes.*—Chronic inflammation—local irritation from foreign bodies—injury to lining membrane by the ear-picker.

*Symptoms.*

*Diagnosis.*

*Prognosis.*—Favorable in polypus—not so favorable in fungus and vegetations.

*Treatment.*—By excision and caustics—by ligature—by extraction with forceps—by caustics alone.

### IV. SINUS OF MEATUS.

*Definition.*

*Causes.*—An abscess external to the meatus—a diseased mastoid bone.

*Symptoms.*

*Diagnosis.*

*Prognosis.*—Unfavorable.

*Treatment.*—Modified by cause—palliative chiefly.

### V. INORDINATE CERUMINOUS SECRETION.

*Causes.*—Acute or chronic inflammation of the meatus.

*Symptoms.*

*Diagnosis.*—May be confounded with almost any of the other diseases of the ear; a careful examination must decide.

*Prognosis.*—Favorable.

*Treatment.*—Allay any existing inflammation; remove any inspissated cerumen; apply some gentle stimulant. Dangers arising from incautious syringing.

### VI. APHTHÆ OR HERPETIC ULCERATIONS OF LINING MEMBRANE OF MEATUS.

*Causes.*—Chiefly constitutional.

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*—Tonics, and alteratives for the general health; local alterative astringent injections.

### FOREIGN BODIES IN THE MEATUS AUDITORIUS EXTERNUS.

*Nature of these.*—Round and smooth substances, as beans, peas, glass beads; sometimes insects of various kinds.

*Origin of insects.*

*Symptoms.*—Those of chronic inflammation, occasioning an otorrhœa, where the cause continues to operate for any length of time.

*Treatment.*—Removal of the cause will sometimes alone be sufficient; solid substances may be removed by the forceps; insects may be removed by a few drops of oil, or of infusion of tobacco, &c. &c.

*Dangers arising from force applied for the extraction of foreign bodies.*

## INTERNAL CHRONIC OTITIS.

### CHRONIC INFLAMMATION OF MEMBRANA TYMPANI.

*Causes.*

*Effects.*—Ulceration; perforation; complete destruction.

*Mode of inspection and examination.*—By speculum; by forcible expiration; by sounding and by the otoscope.

*Symptoms.*

*Diagnosis.*—May be confounded with disease of meatus, or of tympanic cavity.

*Prognosis.*—Unfavorable to audition.

*Treatment.*

### CHRONIC INFLAMMATION OF TYMPANUM.

*Forms.*—Primary. Consecutive.

*Seat of disease.*—Mucous membrane; frequently extending to the cellular tissue, and onwards to periosteum and bone.

*Causes.*

*Effects.*—Perforation of membrana tympani; loss of ossicula; abscess of mastoid cells; caries of petrous bone; effusion of pus under dura mater or between the cerebral membranes.

*Symptoms.*

*Diagnosis.*—May be confounded with other inflammatory diseases of internal ear, with meningitis or phrenitis.

*Prognosis.*—Unfavorable.

*Treatment.*—Modified antiphlogistic; injections of mild fluids through the eustachian tube.

### RELAXATION OF MEMBRANA TYMPANI.

*Definition.*

*Varieties.*—1. From want of tone in the membrane. 2. Paralysis of the internal muscle of the malleus. 3. Rupture of the same muscle.

*Causes of each.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*—Of first two, favorable; of the last, unfavorable.

*Treatment.*—Dry warm tonic applications; tonic and astringent injections.

### CARTILAGINOUS AND OSSEOUS CONDITION OF MEMBRANA TYMPANI.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*—By perforation.

*History of operation.*—First proposed by Cheselden; proposed and performed by Sir Astley Cooper in cases of obliteration of eustachian tube.

*Dangers of operation.*—Wound of vascular lining of membrane giving rise to effusion of blood; injury to the chorda tympani, and to the malleus.

*Mode of operation.*—A simple puncture by trocar, Astley Cooper's operation; by caustic, Richerand's; by drilling with a quadrangular perforator, Buchanan's, Himle's, &c.

### OBSTRUCTION OF EUSTACHIAN TUBE.

*Forms.*—1. Partial. 2. Complete.

*Causes.*—Inflammation, acute and chronic; extension from the throat of such diseases, as scarlatina, variola, syphilis, cynanche tousillaris, enlarged tonsils, descent of nasal polypi.

*Symptoms.*

*Diagnosis.*—May be confounded with deafness from other causes.

*Prognosis.*—Favorable.

*Treatment.*—By reducing existing inflammation—by constitutional treatment, if the cause requires it—by dilatation, if stricture exists in the course of the tube.

### MODE OF CATHETERIZING EUSTACHIAN TUBE.

*Instruments used.*

*History of operation.*—First performed on himself by Guyot, a Post Master at Versailles, in the year 1700, revived by Itard, and materially improved.

*Indications for its use.*—1. An important means of diagnosis. 2. To remove mucous or blood from tympanic cavity or from eustachian tube. 3. To dilate a stricture. 4. To stimulate the nervous system of the ear.

*Dangers of the operation.*—1. Inflammation of throat, and catarrh of the tympanum. 2. Emphysema. 3. Rupture of membrana tympani. 4. Strangulation.

*Mode of passing instrument.*

*Air press.*

### NERVOUS DISEASES OF THE EAR.

Arranged under two heads. 1. Disordered function of the acoustic nerve. 2. Disordered functions of the nerves of common sensibility and motion, or the tympanic nerves.

1. Disordered function of the acoustic nerve.

*Division.*—1. The excited or acute state. 2. The torpid or chronic state.

### ACUTE STATE.

*Causes.*—From local affection—sometimes sympathetic with general health, or some disorder of brain, stomach, bowels, or uterus—from overuse of organ.

*Symptoms.*—Tinnitus aurium, deafness, an annoying pulsation synchronous with the heart.

*Diagnosis.*

*Prognosis.*

*Treatment.*—The removal of the cause, administration of tonics, alteratives, counter irritants.

### I. TORPID FUNCTIONAL DERANGEMENT.

*Age most liable.*—Old age.

*Causes.*—Over excitement of organ; severe constitutional disorder, &c.

*Symptoms.*

*Diagnosis.*—May be assisted by the absence of disease in the external and middle ear, by a want of perception of sounds when the cranial bones are thrown into vibration by a watch.

*Prognosis.*—Unfavorable.

*Treatment.*—Attention must first be paid to general health; various nervous excitants, as electricity and galvanism, may be tried. Application of ætherous vapour is recommended by Itard and Krahmer.

*Mode of introducing vapour.*

### II. FUNCTIONAL DERANGEMENT OF TYMPANIC NERVES.

*Synonym.*—Otalgia or ear ache.

*Causes.*—The common causes of neuralgia; enlarged tonsils; any local disease in the vicinity; direct injury in sounding the membrana tympani, or eustachian tube.

*Symptoms.*

*Diagnosis.*

*Prognosis.*—Favorable.

*Treatment.*

## FORMS OF DEAFNESS.

### DEAFNESS.

*Synonymes.*—Surditas, cophosis.

*Degrees.*—1. That marked by impossibility of hearing at all, usually congenital and a cause of dumbness. 2. By power of distinguishing certain sounds, as the pronunciation of the vowels, whistling, &c.

*Causes.*—Mostly congenital, sometimes acquired. The congenital cases most frequently depend on morbid changes in the soft parts, in a small proportion of cases upon an anomaly in the structure of the solid parts.

*Diagnosis.*

*Prognosis.*—Unfavorable in congenital cases; more favorable in acquired cases.

*Treatment.*

### HARDNESS OF HEARING.

*Synonyme.*—Dysœcia.

*Definition.*—Where the faculty of hearing is so diminished that articulate sounds cannot be heard without the assistance of some particular apparatus.

*Degrees.*—1. Where the individual cannot hear a distant noise, and especially *high tones*, but can perceive articulated sounds when the voice is a good deal raised 2. He hears and distinguishes both high and low tones, and also words, but only when the voice is somewhat raised.

*Causes.*—Either some alteration in that part of the organ which serves

as a conductor for the vibration of sound; or also an increased sensibility of the acoustic nerve.

Alterations of the conductive parts are of two kinds; 1. A total obliteration of the meatus auditorius externus; its imperforation, or complete absence. 2. A diseased condition of the tympanum, as inflammation of its lining membrane; caries of its parieties; and collections of blood, pus, or other fluid in its cavity.

*Diagnosis.*—Of some alteration of conducting parts, may be assisted by the patient only hearing when solid bodies are placed between his teeth, while his dull perception of sound does not appear to be less when the ear is covered. Of some disease of tympanum, by the history, or by marks of previous inflammation.

*Prognosis.*—Unfavourable.

*Treatment.*

### ALTERATION OR DIMINUTION OF HEARING.

*Synonym.*—Paracusis.

*Definition.*—Where the faculty of hearing articulated sounds in the natural way is imperfect for want of precision.

*Causes.*—1. Alterations of the membrana tympani from congenital malformation, or from thickening, ossification, perforation, or laceration. 2. The lodgment of fluid in the tympanic cavity, as in some cases of obstruction of the eustachian tube, as in some new born infants. 3. Alterations in the membrane of the fenestra rotunda, such as its imperfect form, its erroneous situation, its thickened state, &c. 4. Depression, or excitement of nervous influence, the natural consequence of the patient's sensibility.

*Diagnosis.*

*Prognosis.*

*Treatment.*

---

## V. INJURIES AND DISEASES OF THE NOSE.

### WOUNDS.

*Varieties.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

### FRACTURES OF THE OSSA NASI.

See "Fractures."

EPISTAXIS.

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

ACUTE INFLAMMATION OF THE SCHNEIDERIAN MEMBRANE.

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

CHRONIC INFLAMMATION WITH THICKENING OF THE SCHNEIDERIAN MEMBRANE.

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

ABSCESS.

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

ŒDEMA OF THE SCHNEIDERIAN MEMBRANE

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

OZŒNA.

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

Ozoena - Known by the exceedingly offensive odor which is given off from the nose - Treatment:- Gin Donovans solution three drops to a ounce of water - Rub the lining membrane upon the outside of the nose and inflictions of Corrosive Sublimate one half grain - Sub-Carbonate of Ammonia six or eight grs. to the ounce of water -

ULCERATION OF THE NASAL CARTILAGES.

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

CARIES AND NECROSIS OF THE NASAL BONES.

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

ENLARGEMENT OF THE INFERIOR TURBINATED BONE.

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

DEVIATION OF THE SEPTUM NARIUM.

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

LODGEMENT OF FOREIGN BODIES IN THE NOSTRILS.

*Nature of these bodies.*
*Mode of introduction.*
*Symptoms produced by their presence.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

FIBROUS TUMORS AND CYSTS OF THE NOSTRILS.

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

POLYPUS OF THE NOSE.

*Definition.*
*Location.*
*Form.*
*Number.*
*Size.*
*Consistence.*

*Color.*
*Termination.*
*Division.*—1. Nonmalignant. 2. Malignant.
1. Or nonmalignant.
*a.* The vesicular.
*b.* The gelatinous.
*c.* The fleshy.
*d.* The fibrous.
*e.* The hard.
2. Or malignant.
*a.* The cancerous.
*b.* The medullary or hœmatoid.
*c.* The schirrous.
*Causes.*—Of simple polypus.
*General Symptoms.*
*Special Symptoms.*—Each form is characterised by peculiar symptoms. State what these are.
*Causes of malignant polypus.*
*Special symptoms in each variety.*
*Diagnosis of polypus tumour.*—Has been confounded with a great variety of diseases, viz. enlarged turbinated bone; inclination of the septum; disease of the nasal bones; œdema of the mucous membrane; chronic inflammation; abscesses; ozœna; fibrous tumours of the nostrils; polypus of the antrum; hernia cerebri; foreign bodies in the nostril.
*Prognosis.*—Depends on the form of polypus.
*Treatment.*—Varies in the different species of polypus.

## EXTERNAL POLYPUS.

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

## LIPOMA.

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

## LOSS OF NOSTRIL OR THE ENTIRE NOSE.

See "Rhinoplastic operations."

# VI. INJURIES AND DISEASES OF THE CHEEKS.

### WOUNDS.

*Varieties.*
*Parts liable to be involved.*
*Symptoms.*
*Prognosis.*
*Treatment.*

### TIC DOLEREUX.

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

### SPASMODIC ACTION OF THE MUSCLES.

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

### PARALYSIS OF THE CHEEK.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*—1. Constitutional. 2. Local.

1. Only required when the defect depends on a constitutional cause, and must be modified by the nature of this cause.

2 Or local.

*a.* Blisters.
*b* Application of strychnia or veratria.
*c.* Electricity.
*d.* Acupuncture.
*e.* Excision of a portion of the cheek.
*f.* Section of the antagonising muscles. (Dieffenbach.)

### TUMOURS OF THE CHEEK.

*Varieties.*
*Mode of operating in each.*

### ULCERS OF THE CHEEK.

*Division.*—External and internal.
*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

MACULÆ.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

LOSS OF CHEEK.

See "Chieloplastic operations."

---

## VII. INJURIES AND DISEASES OF THE JAWS.

FRACTURES.

See "Fractures."

LUXATIONS.

See "Luxations."

WOUNDS.

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

INFLAMMATION OF THE LINING MEMBRANE OF THE ANTRUM.

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

ABSCESS OF THE ANTRUM.

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

ULCERATION OF LINING MEMBRANE.

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

SERO-CYSTIC TUMOUR OF ANTRUM.

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

FIBROUS TUMOUR OF ANTRUM.

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

FUNGUS TUMOUR OF ANTRUM.

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

POLYPUS OF ANTRUM.

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

BONY TUMOUR OF ANTRUM.

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

FOREIGN BODIES LODGED IN THE CAVITY OF THE ANTRUM.

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

OSTEO-SARCOMA OF UPPER JAW.

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

OSTEO-SARCOMA OF LOWER JAW.

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

SPINA-VENTOSA OF LOWER JAW.

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

EXOSTOSIS OF LOWER JAW.

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

ANCHYLOSIS OF LOWER JAW.

*Varieties.*—True and false.
*Causes of each.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

REMOVAL OF UPPER JAW.

*Mode of operating.*

REMOVAL OF LOWER JAW.

*Mode of operating.*

REMOVAL OF SYMPHISIS OF LOWER JAW.

*Mode of operating.*

RESECTION OF DIFFERENT PORTIONS OF THESE BONES.

*Mode of operating.*

EPULIS.

*Definition.*
*Varieties.*
*Causes.*
*Symptoms in each variety.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

PARULIS.

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

---

# VIII. DISEASES OF THE SALIVARY APPARATUS.

## I. DISEASES OF THE PAROTID GLAND AND ITS DUCT.

### WOUNDS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

### INFLAMMATION OF THE GLAND.

*Varieties.*—Acute and chronic.
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

### ABSCESS OF THE GLAND.

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

### TUMOUR OF THE GLAND.

*Varieties.*
*a.* Fatty.
*b.* Melanotic.
*c.* Encysted.
*d.* Fibrous.
*e.* Simple hypertrophy.
*f.* Erectile.
*g.* Aneurismal.
*h.* Swelling from salivary concretion.
*i.* Schirrous.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—In each variety.

## TUMOURS OCCUPYING THE PAROTID SPACE.

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

## WOUNDS OF PAROTID DUCT.

*Varieties.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## FISTULA OF PAROTID DUCT.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*—Four methods. 1. Cicatrization of the Fistulous orifice. 2. Dilatation of the inner portion of the duct. 3. The establishment of a new opening in the mouth, or forming a new portion of the canal, where the original has been destroyed. 4. Destruction of parotid gland.

Agents employed under the 1st head—
*a.* Suture.
*b.* Cauterization.
*c.* Compression.
*d.* Plastic operation.

Agents employed under the 2d head—
*a.* Seton.
*b.* Probing.

Agents employed under the 3d head—
*a.* Operation of Deroy.
*b.* " " Duphenix.
*c.* " " Monro.
*d.* " " Tessard and Flajani.
*e.* " " Atti.
*f.* " " Deguise.
*g.* " " Bannafons.
*h.* " " J. Rhea Barton.
*i.* " " Horner.

Agents employed under the 4th head—
*a.* Pressure on the duct.
*b.* Ligature of duct.
*c.* Pressure on the gland itself.

### FISTULÆ OF PAROTID GLAND.

*Varieties.*—Two.
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*—*a.* Cauterization.
*b.* Suture.
*c.* Excision.
*d.* Blisters.
*e.* Gold leaf plaster of Malgaigne.

## II. DISEASES OF THE SUB-MAXILLARY GLAND.

### WOUNDS.

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

### FISTULA.

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

### ENLARGEMENT OF THE GLAND.

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

## III. DISEASES OF THE SUBLINGUAL GLAND.

### WOUNDS.

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

### FISTULA.

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

### RANULA.

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

### ENLARGEMENTS OF THE GLAND.

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

### SALIVARY CALCULI.

*Location.*
*Varieties.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

---

## IX. DISEASES AND INJURIES OF THE MOUTH.

### I. AFFECTIONS OF THE LIPS.

### WOUNDS OF THE LIPS.

*Varieties.*
*Causes.*
*Symptoms.*
*Treatment.*

### SIMPLE TUMOURS OF THE LIPS.

*Varieties.*—Encysted, fatty, transparent cyst, enlarged follicles, verruca, moles, &c. &c.

*Causes.*—Vary in each form.

*Symptoms.*—Depend on the variety.

*Prognosis.*—Depends on the kind of tumour.

*Treatment.*—Varies with the form of tumour.

## CANCER OF THE LIP.

*Points usually attacked.*—Margin, and especially that of the lower lip.
*Varieties.*—Superficial and deep seated.
*Causes.*
*Symptoms.*—Vary with the stage and form of cancer.
*Diagnosis.*
*Prognosis.*—More favorable than in any other form of cancer.
*Treatment.*

## CANCRUM ORIS.

*Definition.*
*Persons most liable to be attacked.*
*Causes.*—Constitutional and local.
*Symptoms.*—Vary with stage.
*Prognosis.*—Unfavorable.
*Treatment.*—Depends on the stage of the disease, the part attacked, and the situation of the patient.

## EVERSION OR DOUBLE LIP.

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

## HYPERTROPHY OF THE LIPS.

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

## ADHESIONS OF THE LIPS.

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

## HARE-LIP.

*Definition.*
*Varieties.*
*Lip most frequently affected.*
*Complications.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*—Depends on the age of the patient and the nature of the defect.
*a.* The usual operation.
*b.* Barton's curvilinear operation.
*c.* Malgaigne's operation.
*d* Operation without needles.

### ATRESIA ORIS.

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

### MOUTH TOO LARGE.

See Report by Velpeau of a case where the mouth was open nearly to each ear.

### LOSS OF LIP.

See "Chieloplastic operations."

## II. AFFECTIONS OF THE TONGUE.

### WOUNDS OF THE TONGUE.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Results.*
*Treatment.*

### GLOSSITIS.

*Definition.*
*Varieties.*—Acute and chronic.
*Causes.*
*Symptoms.*
*Prognosis.*
*Result.*
*Treatment.*

### HYPERTROPHY OF TONGUE.

*Varieties.*—Congenital or acquired.
*Causes.*
*Symptoms.*
*Prognosis.*
*Effects on the bones of the mouth.*
*Treatment.*
*a.* Remedies calculated to promote absorption.
*b.* Pressure.
*c.* Ligature.
*d.* Scarifications.
*e.* Excision.

## TUMOURS OF THE TONGUE.

*Varieties.*—Simple and malignant.
*Causes.*
*Symptoms.*
*Prognosis.*
*Diagnosis.*
*Treatment.*

## FISSURE OF THE TONGUE.

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

## GLAZED TONGUE.

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

## ULCERS OF THE TONGUE.

*Varieties.*—Simple and malignant.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## CANCER OF THE TONGUE.

*Parts most frequently attacked.*
*Various forms presented in its origin.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## ADHESION OF THE TONGUE.

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

### TONGUE TYE.

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

### STAMMERING.

*Definition.*
*Causes.*—1. Congenital. 2. Acquired. 3. Functional. 4. Organic.
*Symptoms.*—Vary in different cases.
*Prognosis.*—As regards relief.
*Treatment.*
*a.* Vocal gymnastics; (so called.)
*b.* Different surgical operations.
*c.* Acupuncture as proposed by Detmold.
*Examination of the results of these measures.*

### DEFORMED TONGUE.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

### PARALYSIS OF TONGUE.

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

## III. DISEASES OF THE TONSILS AND ROOF OF THE MOUTH.

### WOUNDS OF THE VELUM.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## TUMOURS OF THE VELUM.

See "Warren and others."

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## INFLAMMATION.

*Varieties.*—Acute and chronic.
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## ABSCESS.

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

## ULCERS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## CLEFT VELUM.

*Varieties.*—Vary in extent.
*Causes.*—Congenital.
*Symptoms.*
*Effect on the voice.*
*Prognosis.*—As regards a cure by operation.
*Treatment.*—Operation of staphyloraphia.

## FISSURE AND OPENINGS OF THE HARD PALATE.

*Varieties.*
*Causes.*
*Symptoms.*
*Effect on the voice.*
*Prognosis.*
*Treatment.*—Operations of staphyloraphia and staphyloplasty.

### AFFECTIONS OF THE UVULA.

*a.* Cleft uvula.
*b.* Hypertrophy of uvula.
*c.* Enlarged uvula.
*d.* Œdema of the uvula.
*e.* Relaxation of the mucous membrane of the uvula.

*Causes in each of these defects.*
*Symptoms in each.*
*Prognosis in each.*
*Treatment in each.*

### LODGEMENT OF FOREIGN BODIES IN THE FAUCES.

*Different kinds.*—Fish bones, bits of bread, pins and needles, a thimble, (see Parish,) &c.
*Symptoms developed by the lodgement of such matters.*
*Treatment.*

### ENLARGEMENT OF THE TONSILS.

*Location of the gland.*
*Structure of the gland.*
*Different kinds of enlargement.*
*a.* From acute inflammation.
*b.* From chronic inflammation.
*c.* From contagious inflammation, as is seen in anginosa putrida.
*d.* From closure of the orifices of the follicles.
*e.* From inspissation of its secretion.
*f.* From calcareous deposites.

*Persons most liable.*—Children of a scrofulous diathesis.
*Causes.*—Vary with the kind of enlargement.
*Symptoms.*
*Effects on the thorax*—(see Warren.)
*Prognosis.*
*Treatment.*—Depends on the kind of enlargement.

---

## X. INJURIES AND DISEASES OF THE NECK.

### I. SUPERFICIAL AFFECTIONS.

### WOUNDS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## ABSCESS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## ULCERS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## TUMOURS OF THE NECK.

*Varieties.*—Simple and malignant.
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## HYDROCELE OF THE NECK.

See "Maunoir."

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

## BRONCHOCELE.

*Definition.*—Tumour of thyroid gland; from Βρονχος the windpipe.
*Synonymes.*—Gotre or goitre, tracheocele, Derbyshire neck, thyrophrasia, &c.
*Varieties.*—Simple, complicated, and malignant—(see N. R. Smith.)
*Age most liable.*
*Countries in which it is usually found.*
*Causes.*
*Symptoms.*
*Diagnosis.*—May be confounded with other tumours.
*Prognosis.*
*Complications.*—Often with disease of the heart.
*Treatment.*
*a.* Iodine.
*b.* Mercury.
*c.* Frictions with various liniments.
*d.* Operations of various kinds.
1. Electricity. 2. Caustics. 3. Seton. 4. Tapping when it contains a cyst. 5. Ligation of the thyroid arteries. 6. Extirpation.
*Examination of these different operations.*

### HERNIA BRONCHALIS.

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

### DEFORMITY FROM BURNS.

See "Chapter on cicatrices."

### TORTICOLLIS OR WRY NECK.

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

## II. AFFECTIONS OF THE LARYNX AND TRACHEA.

### WOUNDS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

### INFLAMMATION.

*Varieties.*—Acute and chronic.
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

### ABSCESS.

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

### ULCERS.

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

ŒDEMA.

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

SCALDS.

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

CARIES OF THE CARTILAGES.

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

FOREIGN BODIES IN THE LARYNX OR TRACHEA.

*Nature of these bodies.*
*How introduced.*
*Symptoms developed by their presence.*
*Prognosis.*
*Effects when the case is not promptly relieved.*
*Treatment.*—Various operations.

*a.* Tracheotomy.
*b.* Laryngotomy.
*c.* Laryngo Tracheotomy.
*d.* Operation of Malgaigne.

ARTIFICIAL RESPIRATION.

*Manner of employing this measure.*

## III. AFFECTIONS OF THE PHARYNX AND ŒSOPHAGUS.

WOUNDS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

INFLAMMATION.

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

### ABSCESS.

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

### EXOSTOSIS OF CERVICAL VERTEBRÆ.

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

### TUMOURS.

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

### ULCERS.

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

### LODGEMENT OF FOREIGN BODIES.

*Nature of these bodies.*
*How introduced.*
*Symptoms developed by their presence.*
*Prognosis.*
*Treatment.*—Various means, and as a last resort pharyngotomy or œsophayotomy.

### DILATATION OR POUCH OF THE ŒSOPHAGUS.

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

### STRICTURES OF THE ŒSOPHAGUS.

*Varieties.*—1. Spasmodic. 2. Permanent. 3. Simple. 4. Malignant or cancerous.

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

### SPASM OR NEURALGIA OF ŒSOPHAGUS.

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

### PARALYSIS OF ŒSOPHAGUS.

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

---

## XI. INJURIES AND DISEASES OF THE THORAX.

### WOUNDS.

*Varieties.*—Superficial and penetrating.
*Causes.*
*Symptoms.*—In each form.
*Prognosis.*—Depends on nature of the wound, &c.
*Effects produced by a simple wound of the chest.*
*Treatment.*—In each variety.

### WOUNDS OF THE LUNGS.

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

### HERNIA PULMONALIS.

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

WOUNDS OF THE HEART.

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

WOUNDS OF THE INTERCOSTAL ARTERY.

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

EMPHYSEMA.

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

EMPHYSEMA—HYDROTHORAX—HYDROPS PERICARDII.

See "Chapter on effusions."

CARIES OF THE RIBS.

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

TUMOURS OF THE RIBS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

FRACTURES OF THE RIBS.

See "Fractures."

PARACENTESIS THORACIS.

See "Effusions."

DISEASES OF THE MAMMARY GLAND.

See "Amputation and diseases of females."

Wounds of the Abdomen – Produced by any thing that will cause a solution of continuity – penetrating – no important viscera wounded – great prostration – dont probe – use the finger as a probe – when the viscera protrude wash them with milk warm water & then return them, if you cant return it dilate the orifice with a knife & return the intestine returning that part first which came out last – must return the omentum if it protrude – having done so close the wound carefully by sutures avoiding the peritoneum – if the intestine be slightly wounded return it immediately for it will heal by effusion of plasma – if the wound be large take a fine silk ligature & pinching up the gut tie it with the double knot – sometimes if very large employ the suture – then return it – If the gut be entirely cut across make an artificial anus – look out for inflamation of the peritoneum & resort to active antiphlogistic treatment – If any other viscus protrudes return it wounded or not wounded –

Wounds of the Stomach – Symptoms – vomiting of blood – fainting – prostration – dont probe even with the finger – clean the wound & employ counter irritation dont give stimulant injections as brandy & water – If it be necessary to give food, give it in the form of broth by the rectum – prognosis unfavorable –

Intestines – ascertain from the discharge if there be any fæcal matter present or smell of sulphuretted Hydrogen – then probe – clean the wound & resort to active antiphlogistics, carefully avoiding all purgation until all danger of inflamation is past – give opiates judging not by quantity but by effect – opium allays pain & also keeps the parts at rest –

Liver – almost as dangerous as wounds of the heart – will die from hemorrhage – then is peritoneal inflamation – becomes as yellow as saffron – fixed pain in the region of the liver – employ active antiphlogistics both local & general –

Spleen – Hemorrhage, blood profusely from both orifices – patient almost always dies – sometimes he will escape from hemorrhage, then look out for peritoneal inflamation – employ active antiphlogistics –

Large Vessels – Internal hemorrhage – bleed & employ constitutional treatment – stimulate – mustard plasters, &c &c. Patient's home wounds – if not superficial, impossible to diagnosticate.

# XII. INJURIES AND DISEASES OF THE ABDOMEN.

## WOUNDS.

*Varieties.*—Superficial and Penetrating.

*Causes.*

*Symptoms in the first or superficial.*

*Prognosis in superficial wounds.*—Generally favorable, but may give rise to *peritoneal inflammation*, *abscess*, which may dissect up the integuments to a considerable extent in consequence of the resistance of the fascia, and finally to *hernia* from the weakness of the cicatrix.

*Symptoms in penetrating wounds when no important viscera are injured.*

*Prognosis in such cases.*

*Mode of examining such wounds.*

*Treatment in each form of wounds.*

*Treatment of penetrating wounds complicated with protrusions of the viscera.*

## WOUNDS OF THE STOMACH.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## WOUNDS OF THE INTESTINES.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## WOUNDS OF THE LIVER.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## WOUNDS OF THE SPLEEN.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## WOUNDS OF LARGE VESSELS.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## BLOWS ON THE ABDOMEN.

*Symptoms to which they give rise.*
*Prognosis.*
*Manner in which death is produced.*
*Treatment.*

## ABSCESS IN THE WALLS OF THE ABDOMEN.

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

## TUMOURS.

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

## FISTULÆ—(BEAUMONT'S CASE, ETC.)

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## ARTIFICIAL ANUS.

*Varieties.*
*Causes.*
*Symptoms.*
*Prognosis.*
*Treatment.*

## POISONS IN THE STOMACH.

*Introduction of the stomach pump.*

## PARACENTISIS ABDOMENIS.

See "Effusions."

## EXTRAVASATIONS IN THE CAVITY OF THE ABDOMEN.

*Fluids extravasated.*

*a.* Blood.
*b.* Chyle and lymph.
*c.* Bile.
*d.* Urine.
*e.* Fœces.

*Symptoms produced by these extravasations.*
*Prognosis.*
*Treatment.*

Blows on the Abdomen - Patient falls down as if shot - caused by concussion of the abdominal plexus of nerves - nausea - contracted pupil - cold skin - Institute active stimulating treatment to bring on reaction - mustard plaster - brandy & water - then too much for inflamation & institute the active antiphlogistic treatment -

Abscess - often early attract an femoral principles -

Tumors - If superficial remove it - if large and spreading into the abdomen let it alone - If in such case it be movable cut it out - if it be fast close up the wound & trust to nature to heal it -

Fistula - An opening into the intestine, the intestine adhesionated to the walls of the abdomen - pushen the edges of the orifice with a knife & close the opening with two or three sutures - in some cases it is taught better to make an artificial anus -

If flat upon his back & upon a mild diet and softly compression the opening will contract to a very small one -

If when small, a probe dipped in nit. acid and cauterize the edges - When large employ the operation of Dieffenbach, by bring a flap of skin over the opening -

Shut patient at rest & employ clysters making the fecal matters just back the open - Shut give him liquid diet. - Physick's operation is the introduction of a ligature through the septum to irritate the parts - just in cases -

## HERNIA.

*Definition.*—Derived from the Greek ἑρνος a protrusion.

*Location.*—Groin, Umbilicus, Labia, Foramen ovale, Vagina, Perineum, Ischiatic notch and Diaphragm. Through the broad ligament, (Casteron and Saussier) Pilcher reports a case where the protrusion rested in a hollow of the bone of the pelvis. Mesenteric and Mesocolic hernia, and through the abdominal parietes.

*Contents.*—Vary in different cases.

*Size.*—Depends on the size of the viscus involved.

*Sac.*—Definition, mode of formation, and division. Cases in which the sac is wanting.

*Division.*—*a.* With reference to the contents of the hernia.—Enterocele, Epiplocele, entero-epiplocele, Gastrocele, Hepatocele, Cystocele, &c. &c.

*b.* With reference to the situation it occupies.—Inguinal or Bubonocele—Oscheocele or Scrotal—Merocele or Femoral—Exomphalos or Umbilical—Ventral—Ventro-inguinal—Phrenic, &c. &c.

*c.* With reference to the period of its appearance. Congenital and Acquired.

*d.* With reference to the condition of the contents. Reducible—Irreducible without Strangulation—Strangulated without adhesion—Strangulated with Adhesion.

*Causes.*—1. Predisposing. 2. Exciting.

*Symptoms.*—Depend on the variety and location of the hernia; there are certain general symptoms characteristic of the *Reducible*, *Irreducible*, and *Strangulated*.

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*—Depends on the variety.

1. For reducible hernia.
   - *a.* The truss.
   - *b.* Injection of the sac.
   - *c.* Caustics.
   - *d.* Acupuncture.
   - *e.* Scarification. (Velpeau.)
   - *f.* Introduction of gelatine strips. (Belmas.)
   - *g.* Ligature of Schmucher.
   - *h.* Ligature of sac.
   - *i.* Seton or royal stitch.
   - *j.* Plastic operation. (Jamieson.)
   - *k.* Pins. (Bonnet.)
   - *l.* Invagination of integument. (Gerdy.)
   - *m.* Do. do. (Velpeau.)
   - *n.* Rest in the horizontal position (Ravin.)
   - *o.* Hernotomy. (Detmold.)

2. For irreducible hernia.
   *a*. Suspensary truss.
   *b*. Rest.
   *c*. Low diet for a length of time.
3. For strangulated hernia.
   *a*. The taxis.
   *b*. Blood letting. (Pott.)
   *c*. Warm bath
   *d*. Tobacco injection. (Heister.)
   *e*. Purgatives. (Monro and Sharpe.)
   *f*. Purgative injections.
   *g*. Opium.
   *h*. Introduction of a stomach tube into the rectum. (O'Beirne.)
   *i*. Distension of lower portion of the intestine. (Arnott.)
   *j*. Pressure and cold to the tumour. (Arnott.)
   *k*. Ice to the tumour.
   *l*. Application of ether to the tumour. (Vela.)
   *m*. Application of Belladona to tumour and urethra by means of a bougie.
   *n*. Application of a large cupping glass over the tumour.
   *o*. Reduction en masse. (Luke.)
   *p*. Operations.
      1. The usual operation.
      2. Subcutaneous operation. (Guerin.)
      3. Division of stricture without opening the sac.
      4. Dilatation without cu'ting the stricture. (Arnott and Le Blanc.)

*Question as to how long the operation may be deferred.*
*Treatment of the case after the stricture is divided.*

## PARTICULAR FORMS OF HERNIA.

### I. INGUINAL AND SCROTAL.

*Definition.*
*Varieties*—1. Oblique. 2. Direct. 3. Concealed. 4. Congenital.
*Most common variety.*—The oblique.
*Sex most liable.*
*Anatomy of the parts concerned in inguinal hernia.*
*Mode of formation.*
*Seat of Stricture.*
*Symptoms.*
*Diagnosis.*—May be confounded with—1. Hydrocele of both the tunica vaginalis and cord. 2. Circocele. 3. Retained testis. 4. Diseased testis. 5. Hematocele. 6. Crural hernia. 7. Tumours of the scrotum.
*Diagnosis between oblique and direct hernia.*
*Prognosis.*
*Dissection of the tumour.*
*Treatment.*—Depends on the form.

Femoral - Coats in 10 parts viz - 1 Skin
2 superficial fascia, 3 fascia lata, divides into the outer
or Sartorial, & inner or pectineal portion - the Sartorial
portion is called Hey's lig - Superior horn, crescentic
edge - is doubled upon itself - limated edge
4th sheath of vessels anterior which a prolongation of
transversalis fascia - 5th the vessels & epigastric
artery passing up between transversalis fascia and
peritoneum -
Any hernia must come down in the funnel shaped
cavity formed by the fascia trans. in front & iliac fascia be-
hind & which forms the sheath of the vessels —
In a hernia there is 1st peritoneum 2 the fascia
propria 3. enters the sheath of vessels -

Seat of Stricture - if large hernia will be Hey's lig. at the
sheath of femoral vessels - adhesions at the mouth or
in the sack, & Gimbernat's lig. -
Diag. If Poupart's lig. between it & femoral - 3 place patient
on back if possible can return it & place thumb upon
ring & cause him to cough, if hernia will not return -

Umbilical - Weak point of protrusion not
exactly determined & is a matter of no con-
sequence - Symptoms - Tumor oval generally
covered by the cellular tissue which forms the
cord, then peritoneum & skin -
Don't tie up the sack - but return the pro-
trusion & put over this a small block &
fasten it by adhesive plaster - This for congenital -
2d case - in this case we have skin, cellular tissue
& peritoneum - don't think of compressing
ligating the tumor - but return it and the
pad on the block
Because - the only treatment is the pad & block
The danger in all these cases is peritoneal in-
flammation - In irreducible use the
taxis - if strangulated operate under the
same conditions - open the stricture upon
the outside of the sack & divide the linea alba
directly upwards -

## II. FEMORAL OR CRURAL HERNIA.

*Definition.*
*Sex most liable.*
*Varieties.*
*Anatomy of the parts concerned in femoral hernia.*
*Mode of formation.*
*Seat of stricture.*
*Symptoms.*
*Diagnosis.*—May be confounded with—1. Inguinal hernia. 2. Bubo. 3. Varicose femoral vein. 4. Psoas Abscess. 5. Fatty tumour. 6. Aneurism.
*Prognosis.*
*Dissection of the tumour.*
*Treatment.*

### CONCEALED FEMORAL HERNIA.

*Definition.*
*Mode of formation.*
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

## III. UMBILICAL HERNIA.

*Definition.*
*Synonymes.*
*Varieties.*—1. Congenital. 2. That of young persons. 3. That of adults.
*Exact point of protrusion.*—Depends somewhat on the age of the individual.
*Contents of the hernia.*
*Form.*
*Size.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection of the tumour.*
*Treatment*—Modified to suit the age of the individual.

## IV. VENTRAL HERNIA.

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

## V. PUDENDAL HERNIA.

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

## VI. VAGINAL HERNIA.

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

## VII. PERINEAL HERNIA.

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

## VIII. THYROIDEAL HERNIA.

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

## IX. VESICAL HERNIA.

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

## X. ISCHIATIC HERNIA.

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

## XI. PHRENIC HERNIA.

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

## XII. MESENTERIC AND MESOCOLIC HERNIA.

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

## XIII. STRANGULATION OF INTESTINES WITHIN THE ABDOMEN.

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

# XIII. INJURIES AND DISEASES OF THE ANUS AND RECTUM.

## IMPERFORATE ANUS.

*Definition.*—Congenital occlusion of the natural orifice of the rectum.

*Varieties.*—*a*. Simple contraction.

*b*. Closure by a thin membrane.

*c*. Termination of the rectum in a *cul-de-sac*, no vestige of the anus being present.

*d*. Termination of the rectum in other organs.

*e*. Formation of a septum above, while the anus itself is open.

*Causes.*

*Symptoms.*—Depend on the nature of the defect.

*Diagnosis.*—Has been confounded with colic, &c.

*Prognosis.*—Depends on the form.

*Treatment.*

*Treatment when the usual operations cannot be performed.*—Various operations for artificial anus.

## WOUNDS AND LACERATIONS OF THE ANUS.

*Varieties.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## INFLAMMATION OF THE ANUS.

*Varieties.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## ABSCESS OF THE ANUS.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## PRURITUS.

*Definition.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

Imperforate anus. Simple - use sponge tent & must be kept up for several weeks - Membrane - break down with finger, if can't make a crucial incision - & then introduce dilator for several days until it heals up -

Cul de Sac - must act with a scalpel, making a cut in the raphe - cutting towards the sacrum if find ½ inch up open & put in dilator - if ½ inch up draw down mucous membrane with forceps to the orifice & stitch to the external wound - if more than an inch child will mostly die - If can't find cul-de-sac make an artificial anus in the lumbar region - Operation for artificial anus generally fails -

(d) - If child passes feces without difficulty don't operate until child is 5 or 6 years until can bear operation -

(E) Can find the fluctuating meconium, & use Trocar - & introduce & dilate with bougie taking weeks & months to cure -

## NEURALGIA OF THE ANUS.

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

## SPASM OF THE ANUS.

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

## ATONY OF THE ANUS.

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

## BLENORRHAGIA OF THE ANUS.

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

## HÆMORRHAGE FROM THE ANUS.

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

## ORGANIC STRICTURE OF THE ANUS.

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

## TUMOURS OF THE ANUS.

*Varieties.*—Verrucæ, condylomata, &c.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## SCHIRROUS OF THE ANUS.

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

## ULCERS OF THE ANUS.

*Varieties.*—*a.* Common ulcer. *b.* Aphthous ulcer. *c.* Venereal ulcer.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## FISSURE OF THE ANUS.

*Definition.*
*Causes.*—Constipation, piles, hard fœces, mechanical injuries, spasm of the sphincter, &c. &c.
*Symptoms.*
*Diagnosis.*—Often confounded with neuralgia, sacs, &c.
*Prognosis.*
*Persons most liable.*—Women from their sedentary habits.
*Progress.*—Generally slow; may be rapid.
*Extent.*
*Treatment.*—Various methods employed:

*a.* Washes and ointments of various kinds.
*b.* Dilatation.
*c.* Incision of sphincter.
*d.* Excision of fissure. (Mothe, Guerin, Velpeau, &c.)

## POUCH OF THE ANUS.

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

## PROLAPSUS ANI.

*Definition.*

*Varieties.*—1. External. 2. Internal. 3. Prolapsus of the mucous membrane alone. 4. Prolapsus of all the coats of the intestine, (doubted by some.) 5. Reducible. 6. Irreducible.

*Causes.*—1. Predisposing. 2. Exciting.

1.—*a.* Childhood and old age. *b.* Constitutional relaxation. *c.* Want of tone in the muscular apparatus of the anus. *d.* Debility of the whole intestine. *e.* Peculiar arrangement of longitudinal fibres of the rectum.

2.—*a.* Constipation. *b.* Lodgment of foreign bodies in the rectum. *c.* Piles. *d.* Ascarides. *e.* Drastic purgatives. *f.* Prolapsus uteri. *g.* Stricture. *h.* Stone in the bladder. *i.* Violent coughs, &c.

*Extent.*—Varies in different cases.

*Symptoms.*—Depend on the form of displacement.

*Diagnosis.*—Piles, &c.

*Prognosis.*

*Treatment.*—Indications. 1. Return the protruded part. 2. Maintain it reduced. 3. Remove the cause of prolapsus.

*Mode of returning the prolapsus.*

*Measures employed under the second indication.*—*a.* Laxative diet. *b.* Voiding fœces in the erect posture. *c.* Astringent washes and ointments. *d.* Pressure. *e.* Pessaries. *f.* Cold douche. *g.* Ligature of small folds of the mucous membrane, (Heavyside and Howship.) *h.* Excision of radiated folds, (Hey and Dupuytren.) *i.* Excision of a circular portion of mucous membrane, (Sabatier and Ricord.) *j.* Excision of a portion of the external sphincter, (Robert.) *k.* Radiated incisions and the nitrate of silver, (Coates.) *l.* Cautery, (Chesselden.)

*Measures employed under the third indication.*

*Treatment of irreducible prolapsus.*

## PROLAPSUS OF THE RECTUM.

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

## FISTULA IN ANO.

*Definition.*—A suppurating cavity of greater or less extent, situated in the neighbourhood of the anus and rectum, discharging by one or more orifices, either externally or into the gut, the walls of which it is very difficult to cause to adhere.

*Causes.*—Any cause, constitutional or local, calculated to produce inflammation in the cellular tissue surrounding the anus or rectum, may give rise to Fistula.

*Varieties.*—1. Incomplete or external blind Fistula. 2. Incomplete or internal blind, or occult Fistula. 3. Complete Fistula.

*Course or direction.*—Varies.

*Number.*—Varies.

*Depth or extent.*—Varies.

*Seat of the internal orifice in Fistula.*

*Symptoms.*—Vary with the variety.

*Mode of examining the anus, for the detection of internal Fistula.*

*Diagnosis.*—May be confounded with urinary fistula, when external. Occult fistula may be confounded with *sacs of the rectum, internal piles, ulcers, blenorrhagia*, &c.

*Prognosis.*—Varies in different cases.

*Causes which prevent closure of the Sinus, and which must be overcome.*—1. The action of the sphincter and levator ani muscles. 2. The surfaces becoming callous. 3. Lodgment of pus. 4. The passage of fœcal matter through the fistula.

*Treatment.*—Various plans of treatment have been employed, and frequently constitutional as well as local remedies are required.

1st. or Constitutional.—Modified to suit the case.

2d. or Local—

*a.* Baths, mineral waters, &c.

*b.* Caustics and cautery.

*c.* Compression—excentric and external.

*d.* Ligature.

*e.* Incision.

*f.* Excision.

*After treatment when operations are performed.*

*Method to be preferred.*—Depends on circumstances.

## PILES.

*Definition.*

*Varieties.*—1. Blind. 2. Open. 3. External 4. Internal.

*Causes.*

*Sex most liable.*

*Class of Society most liable.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Dissection.*

*Treatment.*—1. Palliative. 2. Radical.

## WOUNDS OF THE RECTUM.

*Varieties.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## RECTITIS.

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

## ABSCESS OF THE RECTUM.

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

## ULCERS OF THE RECTUM.

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

## FOREIGN BODIES LODGED IN THE RECTUM.

*Nature of these bodies.*
*Mode of introduction.*
*Symptoms developed by their presence.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## STRICTURE OF THE RECTUM.

*Definition.*
*Varieties.*—1. Spasmodic. 2. Permanent.
*Causes.*
*Symptoms*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## SCIRROUS OF THE RECTUM.

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

## ESTABLISHMENT OF AN ARTIFICIAL ANUS IN CERTAIN CASES OF COMPLETE OBSTRUCTION OF THE RECTUM.

Feb 8th 1849.



# XIV. INJURIES AND DISEASES OF THE URINARY APPARATUS.

Under this head is included all the affections of the Kidney, Ureter, Bladder, Perineum, Prostrate, and Urethra.

## I. AFFECTIONS OF THE KIDNEY.

### WOUNDS.

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

### NEPHRITIS.

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

### ABSCESS IN KIDNEY.

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

### PYELITIS.

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

### HÆMATURIA.

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

## ALBUMINURIA.

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

## DIURESIS SIMPLEX.

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

## DIURESIS UREOSA.

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

## DIURESIS SACCHARINA.

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

## DIURESIS CHYLOSA.

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

## DIURESIS SEROSA.

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

## SUPPRESSION OF URINE.

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

## URINARY CALCULI.

*Definition.*

*Forms assumed by Calculus Matter.*—*a.* Amorphous sediments. *b.* Crystallized sediments or gravel. *c.* Solid concretions or Stones.

### 1. *Amorphous Sediments and Gravel.*

Lithic Sediments—
- *a.* Yellowish sediment.
- *b.* Red or lateritious sediment.
- *c.* Pink sediment.

Crystallized Lithic Deposites.
- *a.* Red gravel.

Oxalic Acid Deposites.

Phosphatic Deposites—
- *a.* Triple Phosphate, or Phosphate of Ammonia and Magnesia.
- *b.* Phosphate of Lime.
- *c.* Mixed or fusible Phosphates.

### 2. *Stone or Calculus.*

*Varieties.*
- *a.* Lithic acid.
- *b.* Lithate of ammonia.
- *c.* Phosphate of Lime or bone-earth.
- *d.* Phosphate of Ammonia and Magnesia, or Triple.
- *e.* Phosphate of Lime and Ammonia, and Phosphate of Magnesia, or mixed Phosphate, or Fusible.

*f*. Oxalate of lime or mulberry.
*g*. Carbonate of lime.
*h*. Alternating.
*i*. Mixed.
*j*. Cystic oxide.
*k*. Xanthic oxide.
*l*. Fibrinous.
*m*. Silicious.
*n*. Prostratic.

*Origin and ingrement of calculi.*
*Forms of calculi.*
*Size.*
*Specific gravity.*
*Surface.*
*Colour.*
*Odour.*
*Nucleus.*
*Consistence.*
*Chemical composition of the individual calculi.*

### CALCULUS IN THE KIDNEY.

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

## II. AFFECTIONS OF THE URETER.

### WOUNDS.

*Varieties.*
*Sympioms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### INFLAMMATION.

*Causes.*
*Sympioms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### PASSAGE OF CALCULUS MATTER ALONG THE URETER.

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

STONE IN THE URETER.

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

DILATATION.

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

## III. AFFECTIONS OF THE BLADDER.

WOUNDS.

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

RUPTURE.

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

ACUTE INFLAMMATION OF THE MUCOUS COAT.

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

CHRONIC INFLAMMATION OF THE MUCOUS COAT.

*Synonyme.*—Catarrhus vesicæ.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

Bladder - Wound - by gunshot - by a dagger or sword
in any case there is a risk of dangerous inflam-
ation of them - Pain is extravasation - highly sensitive
in the hypogastrium, there burning pain - dysuria there
is great disturbance of constitution, no passage
of the urine through the urethra
Prognosis is grave - but may recover - great danger
is urinary infiltration, a catheter must be in-
troduced at first & kept there constantly ex-
cept for cleanliness - Put down rest - watching
for abscess & opening early -

Inflam. of Mucous Coat - produced by almost any
cause - Symptoms constant desire to urinate -
pain of micturition great - spasmodic ac-
tion of abdominal muscles - urine healthy at
first then mucous mixed with it and
blood - fever -
Treatment depends upon cause as from stone -
Treat - remove the cause if possible - The first remedy
is placing patient in a warm bed. Keeping the
skin warm & moist - then general bleeding -
then anodyne, injection - Acumulents to di-
minish the quantity of urine - if these fail to
remove the pain of the bowel - give an in-
halation of Ether -
Chronic - Symptoms - constant pain above the
pubis - constant dragging pain weight - no
positive acute pain - urine has to be passed
frequently - often mixed with mucous and
bloody - urine fetid - alkaline or acid - aspect of
patient, loses his flesh & looks hectic -
Treat - first thing is to examine the bladder - if
nothing but simple irritation - examine the urine -
if test paper - acid - take soda bicarb
and cubebs - if these fail use injection of
a little muriate ammonia water - when the
cubebs, etc. will begin to lose their effect, use
the balsamic or the Harlem oil -

Irritable Bladder - no acute pain - no dragging sensation - frequent calls to pass urine - by
Put him on his Knees & examine the rectum, then examine the bladder - if neglected will become diff - get rid of the cause. Then use opium use chronically 1/2 gr night & morn -

### INFLAMMATION OF THE MUSCULAR COAT.

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

### INFLAMMATION OF THE PERITONEAL COAT.

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

### IRRITABLE BLADDER.

*Definition.*
*Causes.*—Teething, &c.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

### SPASM OF THE BLADDER.

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

### PARALYSIS OF THE BLADDER.

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

### RETENTION OF URINE.

*Definition.*
*Causes.*—Paralysis of bladder. Inflammation of bladder. Spasm of the neck of the bladder, from cold, excess in wine, cantharides, &c. Irritation produced by dentition, hysteria, &c. Enlarged prostrate, displacements of the womb, pregnancy, stricture of the urethra, calculus, laceration of urethra, abscess and tumours of the bladder.
*Age most liable.*
*Sex most-liable.*

*Symptoms.*—Depend very much on the cause.

*Diagnosis.*—Incontinence, tumour of the bladder, &c.

*Prognosis.*—Depends on the cause.

*Treatment.*—*a.* Warm bath. *b.* Opiate injection. *c.* Evacuant injection. *d.* Loss of blood, general and topical. *e.* The catheter. *f.* Forcing the stricture or dividing it, where it exists as the cause of retention. *g.* Puncturing the bladder, which may be done in three places by the *rectum* above the *pubes*, or by the *perineum*. *h.* The inhalation of ether.

*Remedies useful in certain rare cases.*

*a.* Quinine in intermittent or periodic attacks.

*b.* Caustic bougie in irritable neck of bladder or spasmodic stricture.

*c* Affusion of cold water in relaxed patients.

*d.* Strychnia in paralysis of bladder.

*e.* Alkalies, when the urine is too acid.

*f.* Large doses of opium, and perfect quiet when the usual modes of relief fail.

## INCONTINENCE OF URINE.

*Definition.*

*Age most liable.*—Early life and advanced age.

*Causes.*—Diseased urine: habit; irritable bladder, hereditary predisposition, paralysis of the sphincter vesicæ, from any cause, &c.

*Symptoms.*

*Diagnosis.*—Retention of urine, contracted bladder, &c.

*Prognosis.*

*Treatment.*—Depends on the cause.

## HYPERTROPHY OF THE BLADDER.

*Definition.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## CONTRACTION OF THE BLADDER.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## SACCULATED BLADDER.

*Definition.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

Symptoms - great pain - but no pain when dependent upon paralysis - distention of bladder &
Prognosis in all cases grave - if not relieved will have a fever with the smell of urine & delirium, in 12 or 14 hours -

Tapping the bladder preferable to breaking down or forcing the stricture or resistance - but cutting the stricture with no disease of prostate is preferable to tapping - If a stone in neck of bladder attempt to push the stone back - If from infiltration by laceration, pass a catheter into the bladder & make free incision to evacuate it - If from abscess

If bladder be partially healthy and an enlarged prostate - tap above the pubes - if patient be fat make an accurate dissection until you come down to the bladder & then puncture in the bladder -
If from spasm, through the rectum, between the sphincters just above the prostate -
In lacerated perineum & impervious above use the last - In most cases above the pubes as the best & safest according to Prof Mütter -

Incontinence - Test the urine - if on habit put a blister on child stuck on its back -
- a common elastic bottle for an old man -
in young subject of chloral, Lessi. Tinc Cantharides too strong for children -

## ULCERS OF THE BLADDER.

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

## TUMOURS OF THE BLADDER.

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

## SCHIRROUS AND FUNGUS OF THE BLADDER.

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

## HERNIA VESICÆ AND PROTRUSION OF THE BLADDER.

(See "Hernia.")

## RECTO-VESICAL FISTULA.

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

## VESICO-VAGINAL FISTULA.

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

## STONE IN THE BLADDER.

*Mode of formation in the bladder.*

*Causes.*—1. Predisposing. 2. Local.

1. *Or predisposing.*—*a.* Sex. *b.* Race. *c.* Age. *d.* Constitution. *e.* Climate. *f.* Mode of life. *g.* Water. *h.* Dyspepsia.

2. *Or local.*—*a.* Stricture of the urethra. *b.* Enlarged prostate. *c.* Sacs of the bladder. *d.* Paralysis of the bladder. *e.* Chronic inflammation of the bladder. *f.* Lodgement of foreign bodies of different kinds in the bladder, which serve as nuclei.

*Varieties.*

*Size.*

*Form.*

*Number.*

*Mode of growth.*

*Condition in the bladder.*—Encysted, or loose, or encrusted.

*Symptoms.*—Depend on a variety of circumstances.

*Diagnosis.*—Manner of sounding and use of the stethoscope, &c.

*Prognosis.*—Depends on the age and sex of the person, the condition of the organs concerned, and the size, composition, and condition of the stone in the bladder.

*Dissection of the bladder when the stone has existed for some time.*

*Effects upon the ureter and kidneys.*

*Treatment.*—Several indications.

*a.* Remove the diseased state of the urine upon which the secretion of the stone depends.

*b.* Palliate the sufferings of the patient.

*c.* Remove the stone.

1. This indication may be fulfilled by a number of agents, most of which have already been alluded to under the head of "Calculus."

2. The second may be accomplished by demulcent drinks, acid or alkaline medicine, according to the composition of the stone, warm baths, leeches, anodyne injections and perfect rest.

3. The third is answered by a variety of methods.

*a.* Extraction of the urethra.

*b.* Solution by injections.

*c.* Lithotomy, which includes—1. Cutting upon the gripe. 2. The high operation. 3. The single lateral. 4. The bilateral. 5. The recto-vesical.

*d.* Lithotrity and Lithontripsy.

*Preparation of the patient for either of these operations.*

## EXTRACTION BY THE URETHRA.

*Cases to which it is applicable.*

*Condition of the bladder before the instrument is introduced.*

*Instruments employed.*

*Position of the patient during the operation and mode of performing it.*

Lateral - because one half of the prostate gland only was incised. Cut between the levator ani & erector penis and cutting the two transversales - cut the transversalis perinei artery in terminae pubic along the ischia not to be cut. danger of cutting the hemorrhoidal veins. Mostly is safe as we do not open the cavity of the pelvis - If a large stone, a narrow pelvis, disease urethra preventing the introduction of the staff the bilateral is preferred - Most danger from hemorrhage is from the vesical plexus, comes out in clots, don't come out in a jet. but fills the bladder and the This contracts & throws out the clot - stopped by a canula wrapped with lint and dipped in creasote & put into the bladder -

SOLUTION BY INJECTIONS.

*Cases to which it is applicable.*
*Agents employed as solvents.*
*Manner of using them.*
*Dangers.*
*Utility of the measure discussed.*

LITHOTOMY.

1. Cutting on the Gripe or Celsian operation.

*Cases to which it is applicable.*
*History of the operation.*
*Anatomy of the parts concerned.*
*Manner of performing it.*
*Dangers.*
*Utility of the operation discussed.*

2. The High or Hypogastric operation.

*History of the operation.*
*Anatomy of the parts concerned in the operation.*
*Cases to which it is deemed applicable.*
*Supposed advantages of the operation.*
*Dangers of the operation.*—1. Peritonitis. 2. Extravasation of Urine. 3. Wounds of the peritoneum. 4. Lodgements of fragments of the stone. 5. Hemorrhage. 6. Urinary fistula.
*Instruments employed.*
*Manner of performing the operation.*
*After treatment.*

3. The simple Lateral.

*History of the operation.*
*Anatomy of the parts concerned in the operation.*
*Cases to which it is deemed applicable.*
*Supposed advantages of the operation.*
*Dangers.*—1. Peritonitis. 2. Extravasation of Urine. 3. Cystitis. 4. Hemorrhage. 5. Inflammation with sloughing. 6. Incontinence of urine. 7. Fistula. 8. Wounds of the rectum.
*Instruments employed.*
*Manner of performing the operation.*
*After treatment.*

4. The Bilateral.

*History of the operation.*
*Anatomy of the parts concerned in the operation.*
*Cases to which it is deemed applicable.*
*Supposed advantages of the operation.*
*Dangers.*
*Instruments employed.*
*Manner of performing the operation.*
*After treatment.*

5. The Recto-vesical.

*History of the operation.*
*Anatomy of the parts concerned in the operation.*
*Cases to which it is deemed applicable.*
*Supposed advantages of the operation.*
*Dangers.*
*Instruments employed.*
*Manner of performing the operation.*
*After treatment.*

LITHOTRITY.

*History of the operation.*
*Cases to which it is deemed applicable.*
*Supposed advantages of the operation.*
*Dangers.*
*Instruments employed.*
*Manner of performing the operation.*
*Treatment during the course of operations.*

LITHONTRIPSY.

*History of the operation.*
*Cases to which it is deemed applicable.*
*Advantages of the operation.*
*Dangers.*
*Instruments employed.*
*Manner of performing the operation.*
*Treatment during the course of operations.*

STONE IN THE FEMALE.

*Symptoms.*
*Operation to be preferred when an operation becomes necessary.*
*Manner of performing the different operations.*

HYDATIDS AND ENTOZOOA OF DIFFERENT KINDS IN THE BLADDER.

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

## IV. AFFECTIONS OF THE PROSTATE GLAND.

WOUNDS OF THE PROSTATE.

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

Stone in female - when stone is very small dilate the urethra. Stake out the stone - but beware of over distending. As urethra as incontinence of urine is the result - in very young subjects may cut the urethra it towards the pubis - Not to employ any mode of removal of a stone from a female. by any operation except lithotrip-sy -

ACUTE INFLAMMATION OF THE PROSTATE.

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

ABSCESS OF THE PROSTATE.

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

ULCER OF THE PROSTATE.

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

CHRONIC INFLAMMATION, WITH ENLARGEMENT OF THE PROSTATE.

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

CHRONIC INFLAMMATION WITH ATROPHY OF THE PROSTATE.

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

POUCH OF THE PROSTATE.

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

### HÆMORRHAGE FROM THE PROSTATE.

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

### EXCESSIVE SECRETION OF THE PROSTATE.

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

### PROSTATIC CALCULI.

*Nature.*
*Causes.*
*Number.*
*Size.*
*Composition.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### MALIGNANT DISEASE OF THE PROSTATE.

---

## V. AFFECTIONS OF THE PERINEUM.

### WOUNDS.

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

### ACUTE INFLAMMATION.

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

### ABSCESS IN THE PERINEUM.

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

### URINARY INFILTRATION.

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

### DEPOSITES OF LYMPH.

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

### FISTULA.

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

### NEURALGIA.

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

## VI. AFFECTIONS OF THE URETHRA.

### WOUNDS.

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

## HÆMORRHAGE FROM THE URETHRA.

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

## RUPTURE OR LACERATION.

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

## FALSE PASSAGE.

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

## ACUTE INFLAMMATION.

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

## CHRONIC INFLAMMATION.

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

## GLEET.

*Definition.*

*Causes.*—An improperly treated gonorrhœa—disease of Cowper's gland. or the mucous lacunnæ of the urethra, disease of the prostate; strictures; sometimes constitutional causes, as scrofula, gout, rheumatism, &c.

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

*Treatment.*—Astringent and alterative injections; the argent nit; in substance; bougies, medicated or simple; constitutional remedies, &c.

In first stages use an injection of Argenti Nit. 1/4 gr to ℥j of water - Acetic acid drink & an occasional purge - wet a piece of lint & with water & wrap up the organ with it & over this put a covering of oiled silk, This serves as a poultice & is an excellent application - Give at the same time the following pills.

℞.

| | |
|---|---|
| Ol. Copaibæ | ℥ij |
| Ol. Cubeba | ℥ij |
| Ol. Terebinth. | ℥ij |
| Opii | grij or more according to the pain - |

To this add Magnesia q. s. to make sixty pills & give two or three -

## GONORRHŒA.

*Definition.*

*Causes.*

*Symptoms.*—1. Those affecting the part itself. 2. Those attacking other parts from sympathy.

*Period of incubation.*

*Diagnosis.*

*Prognosis.*

*Extent of the inflammation.*

*Products of the disease.*

*Connection between gonorrhœa and syphilis.*

*Treatment.*

## STRICTURE.

*Definition.*

*Varieties.*—1. Permanent. 2. Spasmodic. 3. Mixed.

*Most common Variety.*—The permanent.

*Seat of spasmodic stricture.*

*Causes.*—Vary with the form of stricture.

*Progress.*—Usually increases very slowly.

*Number.*—Varies.

*Extent.*—Varies.

*Location.*—1. At the orifice. 2. Near the middle. 3. Near the bulb. Surgeons do not agree, however, on this point.

*Symptoms.*—1. Local. 2. Constitutional.

*Diagnosis.*—May be confounded with gleet; diseased prostate; stone in the bladder; hernia humourhalis; neuralgia of the testis; neuralgia of the perineum; ague, &c.

*Prognosis.*—Depends on the variety of stricture, the age and health of the patient, &c.

*Termination.*—May occasionally terminate in ulceration and thus a cure be accomplished.

*Effects on adjacent organs.*

*Treatment.*—Mode of examining the urethra.

*Different methods of treatment.*

*Local remedies.*—
- *a.* Dilatation. By bougies, Arnott's dilators, &c.
- *b.* Caustic.
- *c.* Incision from within.
- *d.* Incision from without.
- *e.* Forcing the stricture.
- *f.* Excision.
- *g.* Catheterism.
- *h.* Cauterizing with argent nit; to allay irritability.
- *i.* Absorbent operation.

*Constitutional Remedies.*—
- *a.* Blood-letting.
- *b.* Hot bath.
- *c.* Opium.
- *d.* Inhalations of ether.

When the stricture is impervious and the patient cannot pass urine, the bladder must be tapped, but this should never be done until all our other remedies have been employed.

## FISTULA.

*Definition.*

*Varieties.*—1. In urethra anterior to perineum. 2. In urethra, and discharging through the perineum.

*Causes.*—Inflammation and abscess, wounds, &c.

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*—Remove the cause, if possible, then use according to circumstances the catheter, caustics, suture, incision, blisters, plastic operation.

## CONTRACTION OF THE ORIFICE OF THE URETHRA.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## ORIFICE TERMINATING TOO FAR BACK.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## TUMORS OF THE URETHRA.

*Varieties.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## PAINFUL TUMOR OF THE FEMALE URETHRA.

*Varieties.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## HARDENING OF THE FEMALE URETHRA.

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

### FOREIGN BODIES IN THE URETHRA.

*Varieties.*
*Mode of introduction.*
*Symptoms to which they give rise.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### CALCULI IN THE URETHRA.

*Mode of introduction.*
*Symptoms to which they give rise.*
*Manner of removing them.*

---

## XV. DISEASES OF THE PENIS.

### EPISPADIAS.

*Definition.*
*Varieties.*
*Causes.*—Mostly congenital—sometimes accidental.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### HYPOSPADIAS.

*Definition.*
*Varieties.*
*Causes.*—Mostly congenital.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### PECULIAR MALFORMATION OF METTEAUR.

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

## BENT OR DISTORTED PENIS.

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

## PRIAPISM.

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

## INFLAMMATION OF THE PENIS.

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

## ABSCESS.

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

## URINARY ABSCESS.

*Definition.*
*Causes.*
*Varieties.*—The urine may be collected in a single pouch or cavity, bounded by adhesive inflamination; it may be widely diffused in the cellular tissue; or it may be mixed with pus, forming a urinary abscess proper.
*Causes.*—Perforation of the urethra from wounds, ulceration, &c.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## WOUNDS OF THE PENIS.

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

## ŒDEMA.

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

## TUMORS.

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

## WARTS.

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

## SHORT FRENUM.

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

## CONTRACTION OF PREPUCE.

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

## PHYMOSIS.

*Definition.*
*Causes.*—1. Congenital. 2. Acquired.
*Degrees.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—Varies with the cause. In congenital cases an operation is usually required, when produced by accidental causes, we should never operate without a due regard to the condition of the parts.

*Operations.*—1. Slitting up the prepuce. 2. Circumcision. 3. Division of external portion, the mucous lining being left entire. 4. Lisfranc's operation. Removing a semicircular slice. 5. Velpeau's operation. Removing a triangular piece.

*Operation to be preferred.*

## PARAPHYMOSIS.

*Definition.*
*Causes.*
*Degrees.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*—1. Compression. 2. Cold. 3. Operation.

## BALANITIS.

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

## POSTHITIS.

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

## SIMPLE ULCER.

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

## ABRASIONS.

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

## HERPES PREPUTIALIS.

*Definition.*
*Causes.*
*Age most liable.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

Kinds – Treat – a wash of hot water
purge & bring down the system –

Syphilis - Origin - was known to the Ancients described by Celsus - No evidence that it originated in America - Originates in impure sexual intercourse between human sexes -
Period of Incubation varies from 10 hours up to ten days - sometimes several weeks - this latter an exception -
Tumosis takes place & may be local or general -
In all probability there is a specific poison - There is but one specific virus, for it will if inoculated, produce all the different symptoms & the differences are owing to the peculiarity of the systems -
Cannot take the matter of gonorrhea can induce Syphilis, but the matter of an old syphilitic ulcer will induce gonorrhea simply because it irritates the membrane -
Chancre is the first thing seen after the impure connexion - Simple, small with a red spot & in this a yellow spot seen by a glass - This is the simple follicular ulcer -
2d If in a constitution to infl- there is a red zone and around it a hard mass at at the base of the ulcer - This is the hunterian chancre which is phagedena -
3d Phagedenic, is a grayish or brownish ulcer, large and discharging a very fetid matter -

4 Furuncular - occur upon the body of the penis, just like a common boil to all appearance -
Chancre in a mucous membrane runs its course quickly -
To diagnostic Syphilis take the matter & inoculate the same man see if it runs through its stages -
Cracks on prepuce or fissures are nothing but abrasions of the membrane, wash with lead water, purge & apply cold -
White ulcers on prepuce or in orifice of urethra not necessarily syphilis, may be simply aphthae in such case apply argent. Nitr. & give an alterative to change the secretions.

If simple ulcer with elevated edges may cure in a few weeks - a hardened ulcer six or seven weeks or even months -
Treatment. Cut it short in a few days by Nitrate of Silver - dip lint in water & apply to the part, put patient in bed & make an healthy ulcer -

## ŒDEMA OF PREPUCE.

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

## ADHESION OF PREPUCE.

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

## LOSS OF PREPUCE.

*Causes.*
*Effects to which it gives rise.*
*Treatment.*

## SYPHILIS.

*Definition.*—συν φιλέω (mutual love.)

*Synonymes* —Lues veneria, venereal disease, morbus gallicus, pox, &c.

*History.*—1. Was syphilis known to the ancients? 2. Was it imported from America into Europe? 3. If not imported thus, when and where did it originate?

*Causes.*—Supposed by some to occur often *spontaneously*. Impure sexual intercourse. (See Skey.)

*Period of incubation.*

*Question of a special virus.*—Broussais and his schools, and others also, denied the existence of a specific virus. The experiments of Ricord, Parker, Carmichael, Mayo, Wallace, &c. prove the contrary.

*Does gonorrhœal matter ever produce the primary symptoms of syphilis?*

*Classification of Symptoms.*—

1. Primitive or direct.
2. Successive.
3. Secondary.
4. Tertiary.
5. Diseases unconnected with syphilis —

(Ricord.) or

1. Primary or local.
2. Consecutive, general, or constitutional.

(Hunter.)

## PRIMARY SYPHILIS.

### CHANCRE.

*Definition.*

*Mode of development.*—1. Pustule. 2. Ulceration or abrasion. 3. Abscess.

*Physical character.*—Varies with the location, number, degree of inflammation, duration, &c.

*Character of the pus.*—Varies, and is modified by the stage of the chancre.

*Stages of chancre.*—1. Ulceration, during which the matter secreted will produce the disease if we inoculate with it; it may last several years, but usually only one or two months. (Ricord.)

2. Granulation and Cicatrization. The matter secreted now ceases to possess inoculable properties.

*Division.*—1. External.
2. Internal, larvated or concealed.

1. Follicular.
2. Indurated.
3. Phagedenic.
4. Furunculus.

*Seat of chancre in the different sexes.*

*Causes.*—Sexual intercourse, touching a chancre; during labor the child may be inoculated.

*Diagnosis.*—Often difficult.

*Prognosis.*—Varies with the form of chancre. Chancre produced by artificial inoculation; characteristics of—(Ricord.)

*Prophylaxis.*

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

*Cases in which mercury should be employed.*

*Cases in which it should not be administered.*

*Extent to which it should be carried.*

## CONSECUTIVE SYPHILIS.

### I. BUBO.

*Definition.*

*Causes.*

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

### II. SYPHILITIC CUTANEOUS AFFECTIONS.

*Varieties.*

*Period at which they appear.*—Sometimes along with the primary symptoms, but generally after these are cured.

*Parts of the body most liable to be attacked.*

*Symptoms.*—1. Local. 2. Constitutional.

*Diagnosis.*

*Prognosis.*

*Treatment.*

Primary Syphilis - Consists of small round ulcers found on the glans penis, hard in the centre like shot sometimes they are fissures & the bottom of the fissures are then hard - this is characteristic of the disease. If there be any difficulty in the diagnosis take a little of the virus & insert it into the patients own arm, if it be true Syphilis the primary chancre will be produced in two or three days - Treatment - Give Hydrarg. protiod. gr ss twice a day & cauterize the part with Argent. Nit. freely & then apply stimulating washes - To effect a cure in six weeks is very fortunate - Anoint with the black wash (Solution of Calomel in lime water) or the yellow wash (Solution of corrosive sublimate in lime water) - give Mercury only until the ulcer gets better - If the hardened base continues for one week & until the sores are sore then discontinue until well again, stopping a week at a time - If Mercury dont agree use Pod. Potass: this latter however is better in secondary syphilis - Dont neglect the hot bath, it is very efficacious.

Phagedenic ulcer - Never use mercury in these cases it is a poison, but give Pod. Potass & iron, good diet, for the system is below par - give opium to allay pain. Keep part clean - apply Lint dipped in carrot water, paint part with Zinc Pod. Solution of gun cotton in ether a good application to protect parts from the air.

If the man be strong & hearty & part red, bleed generally & locally - purge - diet - rest - cold water dressing or warm according to the feelings of patient - Unless chancre has a hardened base must not use mercury - Mercury is now considered a specific almost in Secondary Syphilis - It is hard to decide to what group the bubo belongs, Bubo is an enlargement of a gland. May have bubo without chancre. A man may have bubo from cold or a nail growing in the flesh, in short it may be caused by any irritation - generally one gland is at first affected, presents an oval & flattened

appearance - if it be inflicted or ill-treated it will present a bluish gray appearance & extend to the other glands - at first it is a hard, then a fluctuating tumor now then is has in it - next we have an ulcerating bubo, eating away the integuments all around. The matter taken from a fresh syphilitic ulcer will produce the disease, but that from the old ulcer not - Treat. of bubo. During the inflammatory stage leech, put patient in bed, purge - if indicated bleed generally - if antiphlogistics fail & arrest it in three or four days, blister & dress with ung. Dod, or Cad - if these fail to remove it, put on a warm poultice & open early - if all these fail, take him out of bed at end of 3d week, & by excision may bring on ulceration - may use a truss as the pressure may agglutinate the sac - in all cases keep the part entirely at rest by a splint -

Constitutional Treat. If weak give Iodine & iron and a good diet - if vigorous & strong give mercury merely touching the gums, using it & then leaving off & use as before stated, in the meantime using the Iodine plaster to the part. If there any cachexia carefully abstain from the use of mercury.

Cutaneous affections - Condylomatous tumors in soft, flashy of an indolent character, which appear on the genital organs, & sometimes on fingers & toes - Can generally as consequence of syphilis - may be handed down from parent to child. For their cure use mercury to change the whole blood. If hard may cut them off, but they will always grow again & can only be cured by constitutional remedies.

Skin is often affected about two months after syphilis

### III. SYPHILITIC SORE THROAT.

*Period at which it appears.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### IV. GLANDULAR DISEASE FROM SYPHILIS.

*Glands most liable.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### V. IRITIS FROM SYPHILIS.

*Period at which it makes its appearance.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### VI. SYPHILITIC RHEUMATISM.

*Period at which it makes its appearance.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### VII. NODES.

*Definition.*
*Period at which they appear.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### VIII. DISEASE OF THE BONES FROM SYPHILIS.

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

### IX. ALOPŒCIA.

*Definition.*
*Treatment.*

### AMPUTATION OF PENIS.

*Cases requiring the operation.*
*Mode of performing the operation.*

### CANCER OF PENIS.

*Symptoms.*—Commencing with a wart, or a tubercle on the prepuce, frenum, or glans penis, and often remaining quiet for years. Being irritated, it becomes painful and enlarges, often rapidly and to a very great extent; ulceration then takes place, accompanied by a discharge of sanious fetid matter; pain, sometimes excessive; constitutional symptoms and inflammation of glands of groin.

*Diagnosis.*—May be confounded with venereal warts or simple tumors; in its ulcerated stage, with sloughing ulcers.

*Tissue affected.*

*Prognosis.*

*Treatment.*

---

## XVI. DISEASES OF THE TESTIS.

Under this head are included diseases of the testis itself; diseases of the spermatic cord; and diseases of the scrotum.

### I. DISEASES OF THE TESTIS.

#### SUPERNUMERARY TESTIS.

*Numerical increase.*—Generally one; three have been enumerated.

*Diagnosis.*—May be confounded with epiplocele, fatty or fibrous tumours in the scrotum, or an encysted hydrocele of the cord.

#### ABSENCE OF ONE OR BOTH TESTES.

*Diagnosis.*

*Consequences.*

#### IMPERFECT DESCENT OF THE TESTIS.

*Varieties.*—Where one or both testes have been detained in the abdomen near the internal ring, in the inguinal canal, or in the groin, just outside the external ring.

*Causes.*—Peritonitis before birth causing adhesions; congenital smallness of the external ring; want of power in the cremaster.

*Consequences.*—Depend on the situation of the testis; if it is retained within the abdomen, no uneasiness or inconvenience is experienced, nor are the generative functions likely to be interfered with; if, however, it should be retained within the canal, it is liable to compression by muscular action, it is exposed to injury from blows and various other causes, all of which may interfere with its development, may impede its nutrition, or excite disease.

*Diagnosis.*—May be confounded with bubonocele, &c.

*Importance of correct diagnosis.*

*Prognosis.*

*Treatment.*

has been cured - rosula the most common appears in copper called blotches - next the pustulan, next an ulcer - rupes - next pustules, very like variloid, attended with fever - next exfoliations, scaby - squamous - papulous tubercles - Serpiginous (or creeping) the hardest of cure - In all these cases use Sulphur vapor bath & free doses of Iod. Potas. which is almost a specific here - if Iodine disagrees use Bichloride of Mercury - when patient neither can use anodyne if all these fail give Zittmans decoction which Dr Mattie says seldom fails -

Sore Throat - Tonsils enlarged - fauces red - gray ulcer - Apply solid Argent. Nit - touch - blister - give internally Iod. Potas. - or Bichloride of Mercury - if not checked will eat away bones of face - In glandular enlargements mercury will kill patient but use Iod. Potas & arsenic - Iritis - pain in the eye - color of iris changed - if formerly blue it will be green - if brown will be browner &c - In these cases there is but one remedy that is mercury - it must be given no matter what be the patients condition - Rheumatism - use Sulphur bath - Iod Potas and water bath - This rheumatism often gives rise to nodes - but they cant be cured -

Warts - cut them off & touch base with Argent Nit. & give Arsenic & Iodine - If hair fall off use stimulating washes - but can seldom be cured -

### DESCENT OF TESTIS INTO THE PERINEUM.

*Causes.*
*Diagnosis.*
*Treatment.*

### ATROPHY OF THE TESTIS.

*Division.*—Into that which arises from arrest of development, and that the consequence of wasting.

*Causes.*—Of first variety, imperfect descent, congenital inguinal hernia, congenital imperfection of the brain; of the second variety, inflammation, injuries of the head, impeded circulation, pressure, want of exercise, loss of nervous influence, excessive venery, and by some writers the long continued use of iodine.

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

### INJURIES OF THE TESTIS.

*Nature of these.*—Contusions and wounds.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## HYDROCELE.

*Division.*—Into Simple Hydrocele of the Testis; Congenital Hydrocele, and Encysted Hydrocele of the Testis; Diffused Hydrocele of the Spermatic Cord; Encysted Hydrocele of the Cord; Hydrocele of the Hernial Sac; Hydrocele of the Female.

### I. HYDROCELE OF THE TESTIS.

*Definition.*
*Varieties.*—Single and double.
*Characteristic of fluid.*—Its nature; its quantity.
*Predisposing causes.*—Age and climate.
*Exciting causes.*—Inflammation, obstruction of circulation, inguinal herniæ, strains, or great fatigue, blows, the presence of loose bodies in the tunica vaginalis testis, and disease of the testis itself.
*Symptoms.*—A pyriform swelling, elastic, and fluctuating, transparent, movable but remains constant under pressure, little or no pain.
*Time required for its formation.*
*Situation of testis.*
*Diagnosis.*—May be confounded with scrotal hernia, or malignant disease of the testis, or varicocele, &c.
*Mode of examination.*
*Prognosis.*

*Treatment.*—By external remedies and by operation; treatment by operation is either palliative or radical.

*Nature of external remedies.*—Cases to which they are suited.

*Palliative treatment by operation.*—By tapping; by acupuncture.

*Period required for its re-accumulation.*

*Radical treatment by operation.*—By incision; excision; caustic; tent; seton; electro-puncture; and by injection.

*Operation to be preferred.*

*Apparatus required.*

*Kinds of injection.*

*Dangers of operation.*

*Advantages of.*

*Complications.*—Encysted hydrocele of the testis; encysted hydrocele of the cord; diffused hydrocele of the cord; oscheo-hydrocele.

## II. CONGENITAL HYDROCELE OF THE TESTIS.

*Definition.*

*Symptoms.*

*Diagnosis.*—May be confounded with simple hydrocele, or reducible scrotal hernia.

*Prognosis.*

*Treatment.*—By truss and by injection.

*Dangers of latter.*

## III. ENCYSTED HYDROCELE OF THE TESTIS.

*Definition.*

*Structure of cyst.*

*Situation of cyst.*—Either beneath that part of tun vagin. testis covering the epidymis; between the tun. vaginal. testis and the tun. albuginea; or between the layers of the outer portion of the tunica vaginalis.

*Usual situation.*

*Nature of fluid.*

*Symptoms.*

*Diagnosis.*—May be confounded with simple hydrocele.

*Prognosis.*

*Treatment.*

*Operation to be preferred.*

## IV. DIFFUSED HYDROCELE OF THE SPERMATIC CORD.

*Nature and seat of disease.*

*Symptoms.*

*Diagnosis.*—May be confounded with an omental hernia, an encysted hydrocele, or varicocele, or retained testis.

*Prognosis.*—Favorable.

*Treatment.*

### V. ENCYSTED HYDROCELE OF THE SPERMATIC CORD.

*Definition.*
*Age most liable.*
*Nature and seat of cyst.*
*Causes.*
*Symptoms.*
*Diagnosis.*—May be confounded with simple hydrocele or with hernia.
*Prognosis.*
*Treatment.*—Palliative and radical by operation; operation of Mr. Hey and others.

### VI. HYDROCELE OF THE HERNIAL SAC.

*Definition.*
*Causes.*—Congenital and accidental.
*Diagnosis.*—May be confounded with simple hydrocele, or encysted hydrocele of the cord, or with hernia.
*Treatment.*

### VII. HYDROCELE IN THE FEMALE.

*Varieties.*—Diffused and encysted hydrocele of the round ligament; hydrocele of the canal of Nuck.
*Diagnosis.*
*Prognosis.*
*Treatment.*

## HÆMATOCELE.

*Definition.*
*Varieties.*—That of tunica vagin. testis, and that of the cord.

### I. HÆMATOCELE OF THE TESTIS.

*Varieties.*—Where the extravasation takes place in the healthy state of the parts, where it succeeds or is combined with a hydrocele.
*Causes.*—A blow or strain, or a wound of some vessel of tun. vagin. testis, testis itself, or of spermatic artery.
*Situation of testis.*
*Consequences.*
*Symptoms.*
*Diagnosis.*—May be confounded with hydrocele, chronic enlargement of the testis, extravasation of blood in the cellular tissue of scrotum.
*Prognosis.*
*Treatment.*

## II. HÆMATOCELE OF THE SPERMATIC CORD.

*Causes.*

*Liability of occurrence.*—Rare.

*Symptoms.*

*Diagnosis.*—May be confounded with diffused hydrocele of the cord.

*Prognosis.*—Favorable.

*Treatment.*

## ACUTE ORCHITIS.

*Varieties.*—Primary and consecutive.

*Exciting causes.*—Contusion, compression, great excitement of the sexual organs, metastasis from salivary glands, an inflammatory action of the urethra.

*Predisposing causes.*—Scrofula.

*Symptoms.*—Local and Constitutional, and vary with the form.

*Diagnosis.*—May be confounded with strangulated inguinal hernia, imperfect descent of testis, &c.

*Prognosis.*—Generally favorable, varies, however, with the cause.

*Consequences.*

*Terminations.*—Resolution, hardening, suppuration.

*Treatment.*—Leeching, venesæction, cold and warm lotions, purging, compression, &c.

## II. CHRONIC ORCHITIS.

*Anatomical characters.*

*Consequences.*

*Causes.*—Slight contusions, venereal excesses, masturbation, urethral disease, syphilis.

*Symptoms.*—Usually of an indolent character.

*Terminations.*—Resolution, suppuration, ulceration, sinusses and formation of spermatic fistulæ, hernia testis.

*Diagnosis.*—May be confounded with carcinoma of testis, hæmatocele.

*Prognosis.*—Generally favorable.

*Treatment.*—Chiefly constitutional, mercury.

## TUBERCULAR DISEASE OF THE TESTIS.

*Seat.*

*Causes.*

*Age liable.*—Rarely until after puberty.

*Symptoms.*—Insidious in their approach and indolent in their progress.

*Diagnosis.*—May be confounded with chronic orchitis, and malignant disease of the testis.

*Prognosis.*

*Treatment.*—Tonic.

## CARCINOMA OF THE TESTIS.

*Varieties.*—Scirrhus, Encephaloid, Colloid and Melanosis.

## I. SCIRRHUS OF THE TESTIS.

*Frequency of disease.*—Very rare.

*Seat.*—The tubuli seminiferi, the epididymis and sometimes the spermatic cord.

*Symptoms.*—An enlargement of body of the testis with great weight, and severe occasional pain, feeling tuberculated, irregular and excessively hard.

*Diagnosis.*—May be confounded with chronic enlargement and with encephaloid disease.

*Prognosis.*—Unfavorable.

*Treatment.*

## II. ENCEPHALOID CANCER OF THE TESTIS.

*Synonymes* —Pulpy testis, medullary sarcoma, soft cancer, fungoid disease, fungus hæmatodes.

*Age most liable.*—No age is exempt, but it is more common at the middle period of life.

*Symptoms.*—An enlargement, with induration of the body of the testis, which preserves its oval form and even surface; slight tenderness, dull pain, and occasionally a little effusion into the tun. vaginalis; as the gland enlarges it becomes uneven, irregular and tuberculated, also soft and elastic; pain increases; spermatic cord becomes thick and full, scrotum is swollen and varicose; glands of neighboring regions become enlarged and painful; general health suffers; ulceration ensues, and a morbid mass protrudes in the form of a bleeding fungus, and the disease makes rapid progress.

*Diagnosis.*—May be confounded with hydrocele, hæmatocele, cystic disease, and, in its early stage, with chronic orchitis.

*Prognosis.*

*Treatment.*

Carcinoma of the Tunica Vaginalis Testis has been observed.

*Diagnosis.*—May be confounded with hydrocele.

*Prognosis.*

*Treatment.*

Colloid or Gelatiniform Cancer and Melanosis of the Testis are very rarely met with.

## CYSTIC SARCOMA OF THE TESTIS.

*Synonymes* —Cystic Disease, Hydatid Disease, (Sir A. Cooper.)

*Anatomical seat.*—In the substance of the testis.

*Number.*—From two or three to a countless multitude.

*Size.*—Vary from a millet seed to that of a pigeon's egg.

*Nature of the contents.*

*Mode of origin.*—Difference of opinion. Sir A. Cooper's opinion.

*Age most liable.*—Middle age.

*Causes.*

*Symptoms.*

*Diagnosis.*—May be confounded with hydrocele and encephaloid cancer.

*Prognosis.*—Favorable.

*Treatment.*

## FIBROUS TRANSFORMATION OF THE TESTIS.

*Anatomical seat.*
*Consequences.*
*Diagnosis.*—May be confounded with malignant disease.
*Prognosis.*
*Treatment.*

## OSSIFIC DEPOSITS IN THE TESTIS.

*Anatomical seat.*—Between the tunicæ, or in the epidymis.
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## LOOSE CARTILAGES IN THE TUNICA VAGINALIS.

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

## NERVOUS DISEASES OF THE TESTIS.

*Varieties.*—An exaltation of the natural sensibility of the part, or the irritable testis of most writers, and neuralgia of the spermatic nerves.

### 1. IRRITABLE TESTIS.

*Symptoms.*—No perceptible alteration in the parts, but a morbid sensibility accompanied by pain, and generally referred to one particular spot.
*Causes.*—Constitutional, chiefly.
*Diagnosis.*
*Prognosis.*
*Treatment.*

### 2. NEURALGIA OF THE TESTIS.

*Causes.*—Disease of the kidney, the passage of a calculus along the ureter, varicocele, orchitis, but often the cause is hidden.
*Symptoms.*—Sudden, severe, remitting pain, either of a lancinating or of a dragging or pricking character, and is commonly attended with spasmodic action of the cremaster, and sometimes with nausea and vomiting.
*Diagnosis.*
*Prognosis.*
*Treatment.*

### HARDENING OF THE EPIDIDYMIS.

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

### ABSCESS OF THE TESTIS AND EPIDIDYMIS.

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

### FISTULA.

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

### FUNGUS OF THE TESTIS.

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

### CASTRATION.

*Definition.*
*History of operation.*
*Diseases rendering it necessary* —The different forms of carcinoma, tubercular disease, cystic disease, some of the terminations of inflammation, severe neuralgia combined with varicocele.
*Steps of the operation.*
*Dangers*
*Operations required in Imperfect Descent of Testis.*

## II. DISEASES OF THE SPERMATIC CORD.

### VARICOCELE.

*Definition.*—A morbid dilatation of the spermatic veins.
*Division into varicocele and circocele not employed.*
*Appearances on dissection.*
*Testis most liable.*
*Causes.*—Anatomical structure, and accidental causes.
*Effects.*
*Symptoms.*
*Time required in formation.*

*Diagnosis.*—May be confounded with scrotal hernia, or a congenital hydrocele, &c.

*Prognosis.*

*Treatment.*—Palliative and radical; Sir A. Cooper's operation; Ricord's operation; Sir B. Brodie's by division of the vessels; Celsus by ligature; modifications of operation by ligature; Breschet's by compression or excision; Pancoast's operation. The truss.

*Relative value of each.*

### ADIPOSE TUMOURS OF THE SPERMATIC CORD.

*Age most liable.*—Advanced age.

*Symptoms.*—Loose movable tumour, of a soft doughy feel and lobular character.

*Diagnosis.*—May be confounded with omental hernia, or varicocele, or hydrocele.

*Prognosis.*

*Treatment.*

### SPASM OF THE CREMASTER.

*Causes.*—Generally symptomatic.

*Symptoms.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

## III. DISEASES OF THE SCROTUM.

### WOUNDS OF THE SCROTUM.

*Nature.*

*Causes.*

*Characteristics of contusions.*

*Diagnosis.*

*Prognosis.*

*Treatment.*

### PRURIGO SCROTI.

*Definition.*

*Symptoms.*

*Age most liable.*—Adult.

*Causes.*

*Prognosis.*

*Treatment.*

### VARICOSE VEINS OF THE SCROTUM.

*Age most liable.*—Old age.

*Treatment.*

## PNEUMATOCELE.

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

## ŒDEMA SCROTI.

*Synonyme.*—Anasarcous hydrocele.
*Causes.*—Mostly symptomatic.
*Symptoms.*
*Diagnosis.*—May be confounded with hydrocele, and elephantiasis of the scrotum.
*Prognosis.*—Depends on cause.
*Treatment.*

## INFLAMMATION OF THE SCROTUM.

*Forms.*—Mild and severe.
*Symptoms of each.*
*Terminations of each.*—Of the mild, resolution. Of the severe, mortification, and rarely effusion of lymph or pus.
*Diagnosis.*—May be confounded with œdema.
*Treatment.*

## MORTIFICATION OF THE SCROTUM.

*Causes.*—Severe inflammation, excessive cold, extravasation of urine.
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

## ABSCESS OF THE SCROTUM.

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

## ELEPHANTIASIS OF THE SCROTUM.

*Definition.*
*Anatomical seat.*
*Pathology.*
*Causes.*
*Symptoms.*
*Size of tumour.*

*Complications.*—Scrotal hernia and hydrocele.
*Diagnosis.*—May be confounded with œdema, &c.
*Prognosis.*
*Treatment.*
*Dangers of operation.*

### HYPERTROPHY OF THE SCROTUM.

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

### CANCER OF THE SCROTUM.

*Synonyme.*—Chimney-sweeper's cancer.
*Symptoms.*
*Causes.*
*Diagnosis.*
*Prognosis.*—Unfavorable.
*Treatment.*

### MELANOSIS OF THE SCROTUM—RARELY MET WITH.

### TUMOURS OF THE SCROTUM.

*Varieties met with.*—Adipose, fibrous, &c. &c.
*Anatomical seat.*
*Causes.*
*Symptoms.*
*Diagnosis.*
*Prognosis.*
*Treatment.*

### RESTORATION OF THE SCROTUM.

*Causes demanding the operation.*
*Mode of performance.*

### IMPOTENCE.

*Definition.*
*Difference between impotence and sterility.*
*Sex most liable.*—The male to impotency, the female to sterility.
*Causes of impotency.*—1. Organic. 2. Functional. 3. Moral.
*Symptoms.*—Depend on the cause.
*Diagnosis.*
*Prognosis.*
*Treatment.*

## SPERMATORRHŒA.

*Definition.*
*Causes.*
*Symptoms.*—1st and 2d stage.
*Diagnosis.*
*Prognosis.*
*Dissection.*
*Treatment.*

# FOURTH DIVISION.

## AMPUTATION.

*Definition.*
*Importance.*
*History.*
*Classification.*

*Methods.*
1. Circular.
2. Flap, single and double.
3. Oval or oblique.

*Time.*
1. Primary.
2. Consecutive.

*Place.*
1. In Continuity of limb.
2. In Contiguity of limb.

*Circumstance.*
1. Operations of necessity.
2. Operations of choice or complaisance.

*Spot.*
1. Operation of necessity.
2. Operations of election.

*Causes demanding the operation.*

*Prognosis.*—Favorable circumstances.

1. Youth.
2. Habit somewhat reduced but not too weak.
3. Cheerful temperament.
4. Good general health.
5. Simple disease or accident.
6. Part at some distance from the trunk.
7. The upper extremity.
8. Circumstances of the patient.

*Statistics of amputation.*
*Preparation of patient.*
*Instruments required.*
*Dressings.*
*Accidents.*

*Accompanying.*
1. Hemorrhage.
2. Excessive pain.
3. Fainting.
4. Convulsion.

*Secondary.*
1. Hemorrhage.
2. Inflammation of stump.
3. Conical stump.
4. Abscess and sinus of stump.
5. Necrosis or caries of bone.
6. Cystitis.
7. Phlebitis.
8. Metastatic abscess.
9. Gangrene.
10. Hectic fever.

*Healing of the stump and changes which take place in the different tissues.*
*Modification of the constitution.*

Ligatures was first employed by Ambrose Paré -

The cardinal rule is to have a short bone, muscle to cover the bone and skin to cover the muscle -

When thigh is very large or very small use the ~~H~~ circular -

Continuity to be suspended except in very small joints - for in the joint the cartilage is large in amount & can get soft parts enough to cover up the joint -

Reparation - can have but little when used primary, bring on reaction - and give other when not contraindicated - But be careful in using other in consecutive, placed in airing room, regulate diet, if weak strengthen in every way - If have fever first bring fever down -

To check oozing tighten tourniquet and dip a sponge in ice water, & apply to the part, for four or five minutes, then relax tourniquet - and tighten so again If have hemorrhagic diathesis use the actual cautery -

## CONSIDERATION OF THE DIFFERENT GENERAL METHODS.

### 1. Circular Amputation.

*History.*
*Object had in view.*
*Manner of calculating the flap.*
*Manner of dividing the tissues.*
*Reversion of the flap.*
*Instruments employed.*
*Advantages of the operation.*
*Cases to which it is most applicable.*

### 2. Flap Operation.

*History.*
*Object had in view.*
*Manner of calculating the flap.*
*Manner of dividing the tissues.*
*Instruments employed.*
*Advantages of the operation.*
*Cases to which it is applicable.*

### 3. Oval Operation.

*History.*
*Object had in view.*
*Manner of calculating the flap.*
*Manner of dividing the tissues.*
*Instruments employed.*
*Advantages of the operation.*
*Cases to which it is considered applicable.*

### 4. Operation in Continuity of Limb.

*History.*
*Object had in view.*
*Manner of dividing the tissues.*
*Instruments required.*
*Advantages of the operation.*
*Disadvantages.*
*Cases to which it is applicable.*

### 5. Operation in Contiguity of Limb.

*History.*
*Object had in view.*
*Manner of dividing the tissues.*
*Instruments required.*
*Advantages of the operation.*
*Disadvantages.*
*Cases to which it is applicable.*

## SPECIAL AMPUTATIONS.

### 1. *Of the Upper Extremity.*

These consist of amputations of the Phalanges, metacarpo-phalangeal articulations, metacarpal bones, separately or collectively, metacarpo-carpal joints, radio-carpal articulations, of the fore-arm, elbow-joint, arm, shoulder-joint and shoulder-blade with the arm.

### 2. *Of the Lower Extremity.*

These consist of amputations of the Phalanges, metatarso-phalangeal articulations, metatarso-tarsal, ankle joint, leg, at the knee joint, thigh, and hip joint.

## RESECTION OF BONES.

*Definition.*
*History.*
*Classification.*—

1. Those practised in the continuity of a bone.
2. Those practiced in the contiguity.
3. Those in which the bone is extracted entire.

*Cases calling for resection.*—Caries, necrosis, osteo sarcoma, spina ventosa, compound and comminuted fractures, gunshot injuries, and compound luxations.
*Counter indications.*
*Prognosis.*
*Time of performance.*
*Instruments and apparatus.*
*Special application.*

Flame is gas so highly heated as to be

Decompositions —

Combining Vol. 1 — O ½ } To another Berzelius scale which is 100 for
Vol. 1 — H 1 } 8, [illegible] 8 : 100 :
H 1 O 1 = water-protox. N. H O } to ounces 100 : 8 ::

N. $O_2$ ouroxide N H = protoxide of nitrogen

water turned to steam, one pint of water will form 1700 pints of steam — dissolve sugar of lead in water — & pass both combining in two ways — 1st when it is gaseous & 2nd when solution solid & the bodies are called Hydrates — when lowest combined with a solid it is called "water of crystallization" — when strong is call "basic water"

compound fracture of Patella when it is
not easy - often finds matter
incision can easily divide adhesions up
& flap & turn up flaps & bring them
out together - Must not stitch
when can bring parts together

Boyers apparatus - two spirit with a movable foot board -

Waggadons &c - two long spirit & foot boards: ~~each~~ 6 spirit on outside of each wg -

Mr Brown on 5th of instant
for adhesive plaster—
Gum cloth by Mr Haslam &
Sons adhesive plaster, gum cotton
dissolved in ether, an excellent
but dirty & the hands tightly ought
to be smeared with wash hand ether—
Must be kept quite covered—

Knife spoon, flattening of blood by the
tumor in axilla, depression
in acromion process—limb
ends—Fatty degeneration will give pre-
cedence to one as a term—to ascertain
if aspiration take hold of tumours
& lift up to scale & find contents—if
can do this, there is fatty term—Pro-
motes [illegible] all—Treat with tumours as
& keep fragments together

Keep elbow out, in case of tetanus, press the
shoulder in—Dressings pad under elbow
short splint & bandage round shoulder—
Raw of the skin—pain very painful great
inflammation on motions passing up the
arm from the fragment—little or no
displacement—Keep part at rest by a
circular bandage across the portion
of [illegible] & motion of skin so may

Fracture of Neck — A disease of, made in upper
part or complicated or fine crepitus in front part
of bone — if on back, sometimes more distinct
Simple fracture — bring down with roller — bleed if
an overdose — if bone disease take strips of adhesive
plaster & bind around chest, if near shoulder
place a pair of cut pasteboard or wood to
part & let it dry — bring it to the back to
assist humerus into place & put down the
& [illegible] out arm across & compress it
pasting in a cloth so as to form a pocket
& push in cut & pull out the cloth & tuck in
corners,

[illegible] in displaced or put it
[illegible]
shoulder

Head of humerus — diagnosis may
take place on account of [illegible]
bone — put arm in splint, [illegible]
a splint had & shaped to fit in
old person arm rise in stiff for a
day — if Compound — take a drop
Circular & can specify. [illegible]
ability of [illegible] & [illegible] if [illegible]
any sound, patient [illegible] & rigidity [illegible]
bone if necessary in soft part, take away
all the bone fragments, may take away
whole head — bring up the arm, [illegible]
splint & keep down with — about 3 or 6
common [illegible] incision, in order
to [illegible] & get ligaments with
[illegible]

Preparation for [illegible] — [illegible]
in for an elbow & the same face cannot
[illegible] — if the arm is shorter, [illegible]
tion for the most part no loss of motion
can feel the irregularity & compare the
joints — no crepitus — [illegible] the
fragments the necessary length — if adult separate
the patient [illegible] take his arm
till the patient
will be shorter —