

Tables used in the course of lectures on the theory and practice of surgery : delivered at Guy's Hospital, during the session 1853-1854 / by Alfred Poland.

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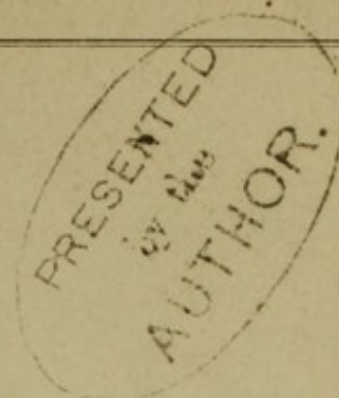
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27.10.1854



TABLES
USED
IN THE COURSE OF LECTURES
ON THE
THEORY AND PRACTICE OF SURGERY,
DELIVERED AT
GUY'S HOSPITAL,
DURING THE SESSION 1853-1854,
BY
ALFRED POLAND.

PUBLISHED BY REQUEST.

LONDON,
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1854.

Preface.

In accordance with wish expressed, I have collected & arranged the Tables used by me, in the elucidation of the several subjects on the Theory and Practice of Surgery entrusted to my charge to deliver, during the Session 1853-1854, at Guy's Hospital.

These are divided into three Fasciculi:—

Fasc. I. The phenomena and treatment of Inflammation and its results.

Fasc. II. Part of the Surgical diseases of the Integuments, Syphilis, Wounds, &c.

Fasc. III. Ligature of Vessels, and Amputation.

It need scarcely be mentioned that these Tables must be considered as mere outlines of the subjects treated on, & of course, requiring much further explanation & detail, as propounded in the Theatre.

The Tables are compilations from known works of repute, those of Miller, Malgaigne, Paget, Cooper's and Copland's Dictionaries, &c., &c., but chiefly, however, based upon the excellent treatise of the first named author.

Alfred Poland.

5, St. Helen's Place,

London, 1st July, 1854.

FASCICULUS I.

Inflammation and its Results.

General Principles.

Healthy Capillary Circulation:

Frog's foot and Bat's wing, under the Microscope.

TABLE I.

Phenomena of Inflammation in the Capillaries

as induced by artificial means: Frog's foot.

Three distinct acts:— 1. Excitement; 2. Congestion; 3. Inflammation.

	<i>Blood.</i>	<i>Capillaries.</i>	<i>Collateral Circulation.</i>	<i>Exudation.</i>	<i>Textures involved.</i>	<i>Function & Nutrition.</i>
<i>1. Vascular excitement:</i>	<i>Increased quantity.</i>	<i>Spasm, relaxation, unusual activity, enlarge.</i>	<i>Excited.</i>	<i>Tendency to. Liquor sanguinis.</i>	<i>Slight increase in fulness.</i>	<i>Exalted. Increased secretion.</i>
<i>2. Active congestion:</i>	<i>Increase of quantity, Plasticity of Fibrine, Crowded blood-globules.</i>	<i>Paralysis, Sluggish, Over distension.</i>	<i>Increased.</i>	<i>Copious. Liquor sanguinis.</i>	<i>Congested.</i>	<i>Perverted. Increased and changed secretion.</i>
<i>3. True inflammation:</i>	<i>Stagnant. altered.</i>	<i>Crowded. obstructed. coats lacerable.</i>	<i>Unusual activity.</i>	<i>Ditto. with extravasated blood.</i>	<i>Changed. Enlarged. Softened. Destroyed.</i>	<i>Wholly perverted. Deposit buoy. Absorption in abeyance.</i>

TABLE II.

FASC. I.

Healthy Blood.

Living Blood —	{	Liquor Sanguinis	{	Water. —————	}	Serum —————	{	Coagulated Blood.
				Various Salts. ———				
				Fatty matter. ———				
				Extractive matter. ———				
				Albumen. ———				
	{	Fibrine. ———	{	Crassamentum. ———				
					Red Corpuscles —————			
					Colourless Corpuscles ———			
					Granules —————			

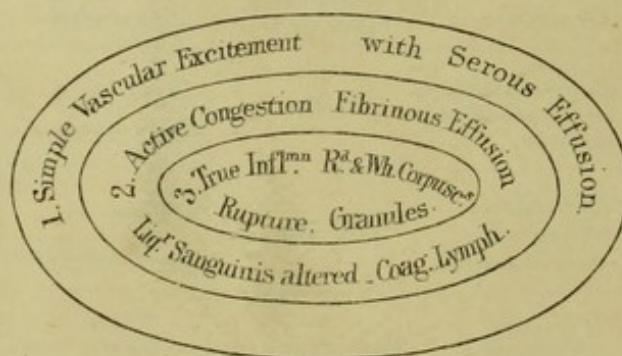
TABLE III.

Blood under Inflammation.

Blood —	Liquor Sanguinis —	Water. ——— diminished ———	} Serous ———	} Inflammatory exudation.
		Various Salts. ——— d ^c ———		
		Fatty matter ———		
		Extractive matter ———		
		Albumen ——— undetermined ——— (some say increased others diminished)		
		Fibrine ——— increased ———	} Fibrinous deposit.	} Coagulable lymph. Liquor Sanguinis
	Red Corpuscles ——— augmented aggregation.			
	Colourless Corpuscles ——— increased ——— corpuscular			
	Granules ——— granular			

TABLE IV.

Diagram of Inflammation.



Theories of the process of Inflammation adduced from the foregoing facts and applied to the Human Subject.

Phenomena of Inflammation manifested in the Human Body.

TABLE V.

I. Local Signs.

1. Redness:—	1. Increased flow of Blood, accession of red globules;— Conjunctivitis. 2. Dilated Capillaries, Injection of infl ^d tissues:— Hunter's experiments on Rabbit's ear.
2. Swelling:—	1. Cause — { 1 st Stage — Serum effused. 2 nd — Fibrine effused. 3 rd — Blood &c. effused. 2. Degree — according to locality:— Cellular tissue, Fibrous, Osseous tissues. 3. Effects — { 1. Beneficial — external parts, limiting inflamm ⁿ and relieving the distended vessels. 2. Mischievous — internal parts, near important organs, orbit — glottis.
3. Heat:—	1. Cause — { 1. Increased supply of Blood: (Blood, source of animal heat) 2. Increase of nervous energy;— rendering part more highly susceptible. 3. Cessation of secretion & excretion; (Perspiration carries off animal heat.) 2. Condition — { 1. Relative; as in deep seated inflammation. 2. Actual;— in superficial inflammation. J. Hunter's experiments.
4. Pain:—	1. Cause — { 1. Excited perverted function of nerves. 2. Pressure by distended vessels and effusion. 3. Stretching of the Nervi viderum. 2. Occurrence — { 1. More frequently in curable diseases 2. less in incurable. 3. Modified by — { 1. Nervous supply of part. 2. Vascularity of part. 3. Tissues affected — { 1. Skin and Mucous membrane. 2. Serous and fibrous tissues. 3. Bone. 4. Character — { 1. Commences in slight form. 2. Steadily increases. 3. Constant. 4. Aggravated by pressure.

TABLE VI.

II. Constitutional Symptoms: Inflammatory fever.

	1. Invasion. (Reaction)	2. Activity (Crisis)	3. Decline.
1. Surface —	Pale, cold, rigor.	Dry, hot.	Moist.
2. Pulse —	Frequent, small.	Frequent, full, hard.	Subside.
3. Digestive Organs —	Defective	{ Tongue — { 1. White, moist. 2. Red, dry. 3. Brown, dry. Mouth — parched, thirst Stomach — nausea, &c. Bowels — constipated	{ Cleans. Abates. Appetite returns. Act.
4. Secretions —		Checked, diminished.	Increased.
5. Respiration —		Quickened, oppressed.	Tranquil.
6. Nervous System —	{ Languid, weary, discomfort, anxiety.	{ Pains in limbs, head &c., Lassitude, prostration, Restless, anxious, Senses exalted, Intellect disturbed, Delirium, Sometimes Coma.	{ Gradually pass into a normal state.

TABLE VII.

FASC. I.

Varieties of inflammatory Fever.

1. Active inflammatory: (sthenic)	<ul style="list-style-type: none"> 1. Great acceleration and strength of circulation. 2. Marked increase of animal heat. 3. Symptoms detailed in foregoing Table.
2. Typhoid: (asthenic)	<ul style="list-style-type: none"> 1. Prominence of nervous phenomena, great depression & prostration, or delirium & coma. 2. Frequent weak pulse. 3. Very slight increased heat of surface. 4. Symptoms soon pass into pure depression.
3. Hectic:	<ul style="list-style-type: none"> 1. Periodical remissions and exacerbations. 2. Profuse sweating and diarrhæa. 3. Protracted duration and variety in its phenomena. 4. Exemption from cerebral disturbance.
4. Irritative:	An irregular form, possessing characters of all the other three; involves more especially the nervous system.

TABLE VIII.

Varieties of local and general Inflammation otherwise considered.

Inflammation,	1. Simple:	1. Acute: —	<ul style="list-style-type: none"> 1. Sthenic. } Ophthalmia, — Inflammation 2. Asthenic } of breast, — Phlegmon, &c.
		2. Chronic: —	Slow, mild, obscure, passive changes.
	2. Specific:	1. { Constitutional } 1. Natural: — Scrophula, Carcinoma, &c.	
		1. { Peculiarity: — } 2. Acquired: — Gout, Dram drinking.	
		2. { Direct application } Syphilis, Glanders, &c.	
		2. { of Poison: — }	

Treatment of Inflammation.

I. Local.

1. Acute Inflammation	1. Rest:—	Examples. Inflamed joints.
	2. Position:—	enable vessels more readily to empty; relax and raise limbs.
	3. Heat, 70°:—	<div> <div>1. Use:—</div> <div>2. Beneficial—</div> <div>3. Less suitable—</div> </div> <div> <div>1. Favours exudation & promotes secretion of surface.</div> <div>2. Relieves tension of { 1. Vessels. 2. Tissues.</div> <div>3. Allays local symptoms: Sedative.</div> <div>during inflammatory process.</div> <div>1. during incubation or invasion.</div> <div>2. during declination.</div> </div>
	4. Cold:—	<div> <div>1. Use:—</div> <div>2. Beneficial—</div> <div>3. Hurtful—</div> <div>4. Caution:—</div> </div> <div> <div>1. diminishes temperature, carrying off superfluous heat.</div> <div>2. deadens nervous sensibility, producing torpor. Illustⁿ.</div> <div>3. contracts Capillaries, diminishing calibre of vessels.</div> <div>1. during invasion.</div> <div>2. during declination.</div> <div>1. in acute stages. Exceptions</div> <div>2. in deep seated inflammation.</div> <div>3. where extreme irritability.</div> <div>4. where much exudation.</div> <div>Immoderate use may cause Gangrene.</div> </div>
	5. Local Depletion:—	<div> <div>1. Use:—</div> <div>2. Preference over general depletion:—</div> <div>3. Means:—</div> </div> <div> <div>1. Directly:— unloading vessels of part.</div> <div>2. Sedative:— effect on general circulation.</div> <div>3. Indirectly: the part being the laboratory of infl^y change in blood.</div> <div>1. where inflamⁿ trivial & in comparatively unimportant parts.</div> <div>2. where powers of system low: Asthenic.</div> <div>3. where inflammatory process fully established.</div> <div>4. in extreme ages, old or young</div> <div>1. Scarification:— { 1. Puncture. Erysipelas. 2. Incision, Phlegmon, Granular lids.</div> <div>2. Venesection. Testitis.</div> <div>3. Leeches, advantage, disadvantage, modes of use.</div> <div>4. Cupping: uses: mode of performance.</div> </div>
	6. Nitrate of Silver:—	<div> <div>1. Mode:—</div> <div>2. Beneficial:—</div> </div> <div> <div>lightly brushed over.</div> <div>1. where confined to true skin.</div> <div>2. as protection from air.</div> <div>3. Circumscribing spreading inflammation.</div> </div>
	7. Pressure:—	<div> <div>1. Mode:—</div> <div>2. Beneficial:—</div> </div> <div> <div>gentle, accurate, uniform, early, careful. Testitis &c.</div> <div>1. during incubation { 1. Revert determination of blood. 1st Stage. 2. Revert dilatation & distension of Capillaries.</div> <div>2. during declination { 1. Most efficient in stimulating absorption. 2. Removing deposit.</div> </div>
2. Chronic Inflammation	1. Rubefaciants:—	<div> <div>1. Action:—</div> <div>2. Agents:—</div> </div> <div> <div>determination of blood to part.</div> <div>1. Sinapisms.</div> <div>2. Dry Cupping.</div> </div>
	2. Vesicants:—	<div> <div>1. Action:—</div> <div>2. Agents:—</div> </div> <div> <div>counter-irritation: evacuation of Serum & Liquor sanguinis.</div> <div>1. Intense heat: minor caustery, &c.</div> <div>2. Ammonia.</div> <div>3. Cantharides.</div> </div>
	3. Suppurants:—	<div> <div>1. Action:—</div> <div>2. Agents:—</div> </div> <div> <div>induce artificial inflammation & suppuration: evacuation</div> <div>1. Medicinal— Croton Oil, Nitrate of Silver, Cantharides.</div> <div>2. Surgical— Seton, Issue, Moxa, Caustery.</div> </div>
	4. Stimulants:—	<div> <div>1. Action:—</div> <div>2. Agents:—</div> </div> <div> <div>excite action of absorbents.</div> <div>1. Friction.</div> <div>2. Pressure.</div> <div>3. Medicinal:— Iodine, Mercury, Nitrate of Silver &c.</div> </div>

Adhesive Inflammation.

1. Phenomena.	1. Condition: — Effusion of plastic fibrine	<ul style="list-style-type: none"> 1. by itself, called Fibrinous deposit. 2. with Serum, called Coaguable lymph.
	2. Occurrence: —	<ul style="list-style-type: none"> 1. On surface. ———— Ec. Serous membrane: false membrane. 2. In interior. ———— Induration: Tumour.
	3. Microscopic characters: —	<ul style="list-style-type: none"> 1. Filamentous basis 2. Cells and corpuscles — <ul style="list-style-type: none"> 1. nucleated. 2. non-nucleated. 3. Granules and molecules.
	4. Vital changes: —	<ul style="list-style-type: none"> 1. May be re-absorbed. 2. May be organized: — <ul style="list-style-type: none"> 1. Form fibre tissue. 2. become vascularized <ul style="list-style-type: none"> 1. self formation. 2. by channelling. 3. by outgrowth. 3. May have compound granule cells. 4. May degenerate, forming pus.
2. Parts prone —	<ul style="list-style-type: none"> 1. Cellular tissue. 2. Serous membrane 3. Vessels. 	
3. Parts little prone	<ul style="list-style-type: none"> 1. Mucous membrane <ul style="list-style-type: none"> Eye: conjunctivitis. — Mouth: stomatitis. — Urethra: urethritis. — &c. &c. &c. 2. Synovial membrane. — 3. Thecæ. — 	<ul style="list-style-type: none"> Ill effects if prone.
4. Uses. —	<ul style="list-style-type: none"> 1. Cure of Hydrocele by injection. 2. Ligature of vessels. 3. Formation of cysts around foreign bodies. 4. Barrier to suppurative process. &c. &c. &c. 	

Suppurative Inflammation.

The formation of Pus, or purulent matter, where the Fibrine of the Liquor sanguinis has assumed molecular and corpuscular form.

Pus.	{ Effused and altered Liquor sanguinis Sp. gr. 1030 to 1040.	1. Serum	nearly similar to serum of blood.
		2. Pus cell, or Corpuscle.	{ 1. spherical; serrated. 2. size - varies $1/2500$. 3. nuclei small and many. 4. no further development.

Varieties.	1. Healthy laudable: protective &c.
	2. Serous: Excess of serum: thin, transparent &c.
	3. Curdy: Excess of pus cells: concrete, lardaceous.
	4. Sanious: Mixed with blood corpuscles: Ichorous.
	5. Grumous: Mixed with Coagulum.
	6. Fœtid: from decomposition of Albumen: offensive.
	7. Specific: Syphilis, Small pox.
	8. Mixed with Serum or Mucus - { 1. Sero-purulent.
	9. Mixed with debris of tissues, with which connected. { 2. Mucopurulent.

Conditions favorable	1. Heat and moisture: as evidenced by fomentation.
	2. Access of air, on exposed mucous surfaces & granulation.
	3. Peculiar state of constitution.

Parts prone.	1. Mucous membrane: Bronchitis, Gonorrhœa.
	2. Synovial membrane.
	3. Theca.

Parts not prone.	1. Serous membranes	} All effects if prone.
	2. Vessels.	
	3. Bone.	

Beneficial.	1. Protective: Sayer on exposed surface.
	2. Expulsive: Foreign body or morbid product.

Mischievous	1. Size: Large extent: sub-fascial, pelvic, psoas.
	2. Number: Numerous: Glanders, Phlebitis.
	3. Seat: Lungs, Liver, Brain, Kidney.
	4. Pressure on vital parts: Trachea, Oesophagus &c.
	5. Effusion into cavities: Empyema; Suppurating globe.
	6. When in circulation: Pyæmia.

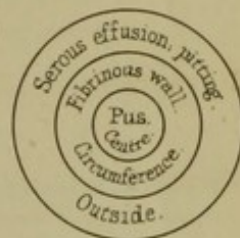
Forms of Suppuration.

1. On free surface, called *Purulent discharge*.
2. In *Parenchyma*, called *Abscess*
 - 1. *Acute*: circumscribed: barrier of *Fibrine*.
 - 2. *Diffused*: no fibrinous limitation.
 - 3. *Chronic*: slow: cold.

TABLE XV.

Acute Abscess.

1. *Local Signs*:
 - 1. *Pain* — { dull, throbbing, aggravated by pressure;
varies according to situation: Bone, Theca, Rectum.
 - 2. *Heat* — burning.
 - 3. *Redness* — peculiar blush.
 - 4. *Swelling* —
 - 1. *Outside* — Serum: pitting on pressure.
 - 2. *Circumference* — Fibrine: hard: wall.
 - 3. *Centre* — pus:
 - 1. *Fluctuation*: Tact. cruditus.
 - 2. *Pinking*:
 - 1. *Vesicle*.
 - 2. *Ulceration*.
 - 3. *Discharge*.



2. *Constitutional Symptoms*:
 - Rigors &c.*
 - Inflammatory Fever*, generally of *Typhoid* type.
 - In protracted suppuration, &c.* — *Rectic Fever*.
 - In circulation* — *Pyæmia*.

3. *Progress*:
 - May be rapid or slow.
 - 1. *Towards exterior Integument*:
 - 1. Continuance of pus formation.
 - 2. Over accumulation.
 - 3. Pressure towards surfaces:
 - 1. *Integument*.
 - 2. *Mucous canals*.
 - 2. *Towards interior Mucous canals*:
 - 4. Absorption of intervening parts.
 - 5. Inflammation.
 - 6. Ulceration and discharge.
 - * Resistance of Serous, vascular, and nerve tissues.

4. *Treatment*:
 - 1. Arrest inflammatory action, } as in common inflammation.
 - 2. Alleviate local symptoms, }
 - 3. Expedite pus to surface, — { 1. Heat and Moisture.
 - 4. Promote absorption: expediency, variety of opinions thereon. } 2. Counter-irritation &c.
 - 5. *Incision*:
 - 1. *Early* —
 - 1. Where much suffering
 - 2. Where deep seated { 1. Saves time.
 - 3. prevents local mischief.
 - 3. prevents constitutional disturbance.
 - 2. *Delay* — { 1. In glandular Abscesses.
 - 3. *Means*. — Instrument: size & direction of incision.
 - 6. Promote filling up and healing thereof.

Fistula: Sinuses: &c.

Diffused Abscess.

No barrier wall. ——— Examples.
 Early incision. ——— Prevent burrowing by bandages.
 Attend to powers.

TABLE XVI.

Chronic Abscess.

- | | |
|-------------------------|---|
| 1. Local peculiarities. | <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> {
1. Progress remarkably slow.
2. Generally unattended with pain. (Cold abscess)
3. Barrier wall: pyo-genic membr.
4. Enlarges equally in all directions. </div> <div> {
1. Fibrinous effusion around.
2. Vascularization.
3. Organization.
4. Granulation. </div> </div> |
| 2. Causes: ——— | <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> {
1. Stumous, impoverished constitution: tubercular deposits.
2. often from diseased bone: Caries of Vertebra. </div> </div> |
| 3. Diagnosis: ——— | Encysted Tumours: — Hydatid: &c. |
| 4. Treatment: ——— | <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> {
1. Local: ———
2. Constitutional. ——— </div> <div> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> {
1. When small — Promote absorption. Iodine, &c.
2. When large — </div> <div> {
1. Incision dangerous: Inflam.ⁿ of Cyst.
2. Valvular opening: Abernethy.
3. Subcutaneous tapping. </div> </div> </div> </div> |

Hectic Fever.

Description of symptoms, progress and result.
 Treatment &c.

Pyæmia.

Theories thereon. Mode of admission of pus into circulation.
 Symptoms: accurately described by Sedillot.
 Progress and result. Prognosis doubtful.
 Post-mortem appearances.
 Treatment.

Ulceration.

*Old doctrines taught as to its being an act of absorption, - totally wrong.
Sir A. Cooper's illustrations of pressure from Aneurism being Ulceration, false.*

Explanation and exposition of Absorption & Ulceration.

Two distinct and separate acts.

Absorption.	1. Absorption proper.	<ol style="list-style-type: none"> 1. Healthy action in body, reference to physiology. 2. Met with in disease and treatment. <ol style="list-style-type: none"> 1. Absorption of Mercury by Skin. 2. Absorption of Poisons. 3. Removal of Tumours under pressure or stimulants.
	2. Interstitial.	The removal of intervening non exposed parts: no discharge: no inflammation necessary. Ex. Pressure of Aneurism on bone &c.
	3. Progressive.	The extending act itself.
Ulceration.	1. Ulceration proper.	<ol style="list-style-type: none"> 1. True inflammation. 2. Disintegration: molecular ejection. 3. Accompanied with softening and suppuration. 4. The detached debris mixed with pus and removal thereof.
	2. Abrasion or excoriation.	Detachment of epithelium or epidermis.
	3. Ulcerative absorption.	Both acts going on at same time: rarely met with: may be seen in the extension of an Ulcer by the absorption of its boundaries.

Ulceration.

Parts prone.	1. Skin:	Ulcers on extremities
	2. Mucous membrane:	fauces, bowels &c.
	3. Areolar tissue.	
	4. Cartilage:	Diseases of joints.
	5. Bone	Caries.
	6. Cornea	Ulcers.
	7. Newly formed parts.	Cicatrices: Scurvy.
Parts not prone.	1. Serous membranes:	burst instead of Ulcerate. Example.
	2. Fibrous tissues:	thecal and fascial Abscesses.
	3. Vessels:	formation of clot: adhesive.
	4. Nerves:	seen in spreading Ulcerations untouched.
Symptoms.	1. Local:	The varied forms of Ulcers, which see, Tab. XIX.
	2. Constitutional	<ol style="list-style-type: none"> 1. Inflammatory Fever, in acute inflammatory Ulceration 2. hectic, in chronic large Ulceration 3. Irritative, in Phagedenic Ulceration. 4. Typhoid, in Sloughing Ulceration.
	(often absent)	
Repair.	1. Subsidence of action.	
	2. Effusion of Liquor.	<ol style="list-style-type: none"> 1. Instead of passing off wholly as pus. 2. Part only degenerates and runs off.
	sanguinis modified.	<ol style="list-style-type: none"> 3. Part remains incorporated with tissues. 4. Cicatrization.
		<ol style="list-style-type: none"> 1. Cell development 2. Vascularization 3. Granulation. 4. Cicatrization.

The varied forms of Ulcers.

Importance of their study.—General characters to be attended to.—Classification, for most part imperfect, each separately considered.

	1. Surface.	2. Secretion.	3. Granulation.	4. Edges.	5. Form.	6. Pain.	7. Constitution.	TREATMENT.	
								Constitutional.	Local.
1. HEALTHY.	Even.	Thick, creamy, inodorous, laudable pus.	Small, florid, vascular, numerous.	Bevelled, cicatrizing.	Round, regular.	Scarcely any.	Good.	—	Mild dressing, support.
2. WEAK.	Raised.	Pale, thin, serous.	Large, flabby, pale.	Below level.	—	None.	Debility.	Tonics.	Stimulants, astringents, support.
3. INDOLENT.	Excavated.	Thin, serous.	Imperceptible, pale, glossy.	Raised, callous.	—	None.	Sluggish.	Alteratives, Opium, &c.	Do.
4. IRRITABLE.	Angry, superficial, unequal.	Thin, acrid, bloody.	Imperceptible, livid.	Ragged, thin, everted.	—	Constant, great.	Irritable.	Do. sedatives.	Mild, sedative, Argent. Nitrat.
5. INFLAMED.	Raw, soft, pulpy.	Profuse ill-formed pus.	None.	Swollen, hot, tense, surrounding inflamed.	—	Painful.	Overaction.	Purgatives, antiphlogistics.	Mild, depletion.
6. SLOUGHING.	Tawny, sloughy, ashy.	Thin, fetid, sanious.	None. Debris, hemorrhage.	Ulcerating.	—	Pain.	Overaction, low vitality.	Attention to health, sedatives, support.	Expectant.
7. PHAGEDENIC.	Uneven depth, brown hue.	Scanty, bloody.	None.	Red, ragged, swollen, gnawed.	Irregular, spreading.	Sharp, burning.	Irritable, peculiar.	—	Escharotics.
8. SCROFULOUS.	Boggy, extent of surface.	Serous, dirty grey.	None at first, afterwards tall pale.	Thin, inverted, undermined.	In clusters near joints.	None.	Disposition to tubercular deposit, weak.	Tonics Iodine.	Stimulants, astringents, escharotics.
9. CACHECTIC.	Do.	Thin, serous.	Do.	Swollen, dusky.	Plurality, Serpentine.	Considerable.	Broken up, Syphilis, Mercury.	Do.	Mild dressing, sedative, &c.
10. VARICOSE.	Superficial, involv ^d veins.	Dries into crust.	Varied, small yellow.	Irregular, spongy.	Oval, several.	Deep seated, itching.	Varicose veins.	Purgatives.	Bandage, mild stimuli, oblit ⁿ of vein.
11. VICARIOUS.	Large, irritable.	Thin, bloody.	Unhealthy, dark, congested.	Ragged.	Oval.	Often distress ^d .	Chlorosis, Plethora.	Emmenagogues, Purgatives, &c.	Water dressing.
12. CARCINOMATOUS.	Excavated, tawny.	Thin, sanious, fetid.	Futile attempts.	Hard, everted, irregular.	—	Burning.	Carcinomatous.	Support, sedatives, Iron, &c.	Excision, escharotics, sedatives.

The varied forms of Ulcers.

Additional remarks.

1. *Healthy*. — General, uniform, red, fleshy looking surface, slightly raised, except at edges where skin and granulation should be even and anastomose.
Treatment. Position, rest, water dressings. Nitrate of Silver, dry applications, strapping and bandage.
2. *Weak*. —
Treatment. Stimulating and astringent applications, used weak at first and changed about Bandage, gentle, uniform. Exhibition of tonics, and improve health.
3. *Indolent*. — Looks like pale mucous membrane, set in a dense high ring of cartilage. "Mucous", "Callous", Ulcer.
Treatment. Continued pressure, with strapping and bandage, local stimulants and astringents, rest, position, application of blisters, scarification, and removal of callosity. Exhibition of Opium considered.
Should old Ulcers be healed?
4. *Irritable*. — Highly sensitive; secretion like Strawberry Cream; depraved system; nervous irritability.
* The Juniper Ulcer, or Gin-drinkers, peculiar, modification of above.
Treatment. Local. — Rest, position; water dressing; sedative applications; solid nitrate of silver.
Constitutional. — Alteratives, Opium, tonics; avoid stimulants, generous diet.
5. *Inflamed*. — Advancing ulceration and surrounding inflammation.
Treatment. Moderate antiphlogistics; purgatives; Antimony &c.; Rest, relaxation; position; fomentation; water dressing; local depletion; caution.
6. *Sloughing*. — Local and general debility, ill fed, ill clothed; intemperate. Chiefly observed on genitals. Succession of Sloughs. Rapid progress.
7. *Phagedænic*. — Rapidly spreading and advancing molecular disintegration.
Ex. — Phagedæna of penis. — Lupus of Face, &c.
- 7½. *Sloughing Phagedænic*. — Combination of both. Ex. Cancrum oris. — Hospital Gangrene.
Treatment of three last forms.

- | | |
|-------------------|--|
| 1. Local | <div style="display: inline-block; vertical-align: middle;"> <ol style="list-style-type: none"> 1. Active energetic, escharotics 2. Mild, rest, expectant, sedatives, &c. </div> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> $\left\{ \begin{array}{l} \text{Nitric Acid.} \\ \text{Argenti Nitrat.} \\ \text{Potassa fusa.} \\ \text{Chloride of Zinc.} \\ \text{Arsenic.} \end{array} \right.$ </div> |
| 2. Constitutional | <ol style="list-style-type: none"> 1. Attention to secretions and excretions. 2. Assuage pain. Opium; Camphor. 3. Avoid over stimulation. |

The varied forms of Ulcers.

Additional remarks continued.

8. *Scrofulous*. — Tubercular deposit; inflammation; imperfect suppuration; softening; pitting; fluctuation; attenuation of skin; Cuticle thin, blue, translucent; — ulceration; no attempt at reparation; unsound foundation.

Treatment. — Stimulating applications; astringents; strapping and pressure. Escharotics recommended; Potassa fusa boldly used; Cod Liver oil; Iodine &c.

9. *Cachectic*. — Cellular membranous.

10. *Varicose*. — Begins as a small vesicle, breaks, crusts over, yellowish granulating sore. Generally with varicose veins. May put on the character of any of the other ulcers.

Treatment.

Local —	{	1. Rest; simple or mild astringent applications.
		2. Well applied strapping and bandage.
		3. More active — {
		1. Tying veins. Caution.
		2. Division of vein.
		3. Intercepting vein: pass needle under.
		4. Potassa fusa.

11. *Vicarious*. — A constitutional ulcer, modified by Catamenia.

Forms — { 1. Florid, habit of body plethora. Purgatives, Alteratives.
2. Chlorotic, Emenagogues &c.

12. *Carcinomatous*.

* *Follicular Ulcer* — resembling, and sometimes mistaken for, Carcinomatous.

Mortification.

Definition.

1. The dying process — { 1. in soft parts — called — Gangrene
2. in Bone — " — Necrosis.

Terms used: — 2. The actual death — " — Sphacelus

3. The dead tissue — { 1. in soft parts — " — Slough.
2. in Bone — " — Sequestrum.

4. The separative process — { 1. in soft parts — " — Sloughing.
2. in Bone — " — Exfoliation.

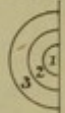
Forms: — { 1. Acute: humid, moist, fluids retained, generally traumatic.
2. Chronic: dry, senile, — fluids parted with, — idiopathic.

TABLE XXI.

Signs and symptoms of Gangrene.

I. Local Signs.

1. General signs: { 1. Redness: livid, dark, ceasing circulation, blood changing.
2. Swelling: serous effusion, brownish, stinking, no fibrinous exudat.
3. Pain ceases: sensation gradually leaves.
4. Heat: temperature decreases with rapidity, part cold.
2. Special signs: { 1. Vesication: appearance, diagnosis from that of scalds & injury.
2. Putrescence: softening, rotting, chemical change.
3. Crepitation: products of decomposition, liquid, gaseous.
3. Appearance at seat of dead part: { 1. Ashy color: cold, crepitant.
2. Dark livid hue: languid inflammation.
3. Bright red: active inflammation.
4. Process of separation: { 1. Inflammation — { abrupt livid line — } the Line of Demarcation.
2. Vesication — which bursts.
3. Ulceration: next to the gangrenous part, the Line of Separation.
4. Granulation: organization towards living tissue, the Barrier.
5. Order of separation of tissues: { 1. Skin, at line of demarcation, retracts, from elasticity, &c.
2. Cellular tissue, undermined, extensive.
3. Muscles.
4. Vessels: formation of plug to some extent.
5. Nerves.
6. Tendons — left long, hanging out.
7. Bone, the last; tardy.



II. Constitutional Symptoms.

Typhoid form of constitutional irritation.

Travers's graphic description.

Remarks on delirium, hiccup, pain, &c.

Diagnostic constitutional symptoms of Gangrene explained.

Causes of Mortification.

- | | | | |
|--------------------|---|---|--|
| 1. Local. | { | 1. Increased action. | { Inflammation; intense action and want of power to control that action. Ex. Gang. inflammation of fore-arm, &c. |
| | | 2. Decreased action. | { Interception of arterial supply; blood prevented arriving at part. |
| | | | { 1. Complete; immediate, painless. Ex. Ligature of Arteries. |
| | | | { 2. Incomplete; tedious, painful, inflammatory. Ex. Arteritis, &c. |
| | | 3. Passive congestion. | { Blood prevented from returning from part. Ex. Tight bandaging; Strangulated Hernia, &c. |
| | | 4. Deprivation of Nervous Agency. | { Injury to, or compression of nerves. Example? |
| | | 5. Mechanical injury. | { 1. Direct: Crushing, disorganization. Ex. Gun-shot. Railroad. |
| | | | { 2. Indirect: Lowering vitality & exciting inflam ⁿ . Ex. Blisters in Children. |
| | | 6. Pressure. | { Ex. Bed sores. Slough on heel in treatment of fractures. |
| | | 7. Heat & Chemicals. | { 1. Direct: Completely burnt & charred. |
| | { 2. Indirect: Inflammation and low vitality. | | |
| 8. Cold. | { 1. Direct: Froze to death. Remarks. | | |
| | { 2. Indirect: Excess of inflammatory reaction in part vitally depressed. Remarks. — Quotation from Larrey. | | |
| | | 9. Animal and other poisons. — Bites of Serpents, — Extravasation of Urine, &c. | |
| 2. Constitutional. | { | 1. General debility. | { Hemorrhage; Starvation; age; &c. &c. |
| | | 2. Improper food. | { 1. Ergot. Description. |
| | | | { 2. Food devoid of nitrogen. |
| | | 3. Atmosphere. | { Hospital Gangrene; — See special description, Tab. XXV. |
| | | 4. Arterial degeneration. Senile Gangrene; See special description, Tab. XXIV. | |

Treatment of Mortification.

- | | | | |
|--------------------|---|-------------------------------|---|
| 1. Local. | { | 1. During activity. | { 1. Sthenic inflammatory. Local depletion. |
| | | | { 2. Asthenic. Maintain temperature. Stimulating applicat ^{ns} . |
| | | 2. During arrest. | { 1. Stimulants, &c. |
| | | { 2. Incision | |
| | | 3. Removal of cause. | { Causes separately alluded & explained Tab. XXII. |
| 2. Constitutional. | { | 1. Allay inflammatory action. | { Caution. Depletion. Antiphlogistics. |
| | | 2. Assuage Pain. | { Calminatives, sedatives. |
| | | 3. Maintain power | { 1. During Invasion — |
| | | | { 2. — " — Progress — |
| | | { 3. — " — Arrest — | |
| | | { 4. — " — Cure — | |
| | | | { Support, tonics, Stimuli. |

Question of Amputation in Mortification.

- Variety of opinions. — Quotations from highest authorities.
1. Idiopathic: Cause internal or constitutional — Rule: Wait for line of demarcation.
 2. Traumatic: Cause external: local. — Question { 1. Immediate amputation.
 - { 2. Wait for line.
- These severally discussed.

Senile Gangrene.

1. Causes. — { 1. Old in structure rather than years.
2. Degeneration of arteries.
3. Feeble heart; defective blood.
2. Forms. — { 1. Inflammatory.
2. Non-inflammatory.

Description of appearance, progress and termination thereof.

Potts's account. — Dupuytren's remarks.

General review of subject. — Treatment.

Hospital Gangrene.

John Bell, Hennen, Begbie and others on the subject.

1. Causes. — { 1. Contagion: — direct contact.
2. Infection: — by medium of vapour or effluvia?
3. Sporadic: — over crowding; noxious atmosphere.
2. Symptoms. — { 1. Local: — { 1. On an unbroken surface, { 1. Pustule; small, dark, — bursts; — pain.
2. Rapid deep sloughing; scooped out; edges jagged.
3. Repeated processes of separating slough.
4. Refuse discharge, & spreading fearfully.
5. Involve glands; open; suppurating.
2. Attacking wound. — { 1. Inflamm; with severe pain & arrest of discharge.
2. Rapid change of granulation to dirty white.
3. Surrounding skin swollen, purple.
4. Edges hardened; everted; — discharge foetid.
Hennen's description of the termination.
2. Constitutional. { Formidable; constitutional irritation.
Typhoid fever; tendency to collapse.
Hennen's description.
3. Treatment. — { 1. Local: — Destroy surface; actual cautery; escharotics; Nitric Acid, &c.
2. Constitutional. { 1. Calminatives and anodynes.
2. Stimuli.
3. Tonics.
4. Fresh air; Hygienic & dietetic means.

FASCICULUS II.

*Surgical diseases of the Integuments,
Syphilis, Wounds, &c.*

TABLE XXVI.

Surgical Diseases of Integument.

- | | | | | | |
|---|-------|---|---|--------------------------------|---------------|
| 1. <i>Skin</i> . | _____ | <i>The varied forms of Eruption.</i> | | | |
| 2. <i>Cellular-tissue</i> . | _____ | <table border="0"><tr><td>1. Phlegmon.</td></tr><tr><td>2. Furuncle or Boil.</td></tr><tr><td>3. Carbuncle.</td></tr></table> | 1. Phlegmon. | 2. Furuncle or Boil. | 3. Carbuncle. |
| 1. Phlegmon. | | | | | |
| 2. Furuncle or Boil. | | | | | |
| 3. Carbuncle. | | | | | |
| 3. <i>Skin & Cellular-tissue</i> . | _____ | <table border="0"><tr><td>Diffused Phlegmonous Inflammation, improperly</td></tr><tr><td>called Phlegmonous Erysipelas.</td></tr></table> | Diffused Phlegmonous Inflammation, improperly | called Phlegmonous Erysipelas. | |
| Diffused Phlegmonous Inflammation, improperly | | | | | |
| called Phlegmonous Erysipelas. | | | | | |

Eruptions.

Those more immediately interesting to the Surgeon are detailed.

1. <i>Papulæ</i> :	1. Lichen.	<ol style="list-style-type: none"> 1. Papula minute, red. 2. Occur in clusters. 3. Terminate in scurf.
	2. Prurigo.	<ol style="list-style-type: none"> 1. Papula large. 2. Isolated, attended with severe itching. 3. Seated on extensor surfaces of body.
	3. Mrophulus.	<ol style="list-style-type: none"> 1. Papula in early infancy. 2. In clusters, surrounded by reddish halo. 3. Seated on face, neck, arms & loins.
2. <i>Squamæ</i> :	1. Lepra.	<ol style="list-style-type: none"> 1. Smooth laminated scales. 2. Surrounded by reddish prominent circle. 3. Assume a circular or annular form.
	2. Psoriasis.	<ol style="list-style-type: none"> 1. Whitish laminated scales. 2. Raised slightly above a reddened surface of skin. 3. Irregular, diffused, continuous. 4. Skin often chappy.
	3. Pityriasis.	<ol style="list-style-type: none"> 1. Very minute scales like those of bran; thin, scurfy. 2. Not raised; seated on a reddened surface. 3. In irregular patches.
3. <i>Exanthemata</i> :	1. Rubella.	
	2. Scarlatina.	
	3. Urticaria.	<ol style="list-style-type: none"> 1. Prominent, red patches, wheals, itching. 2. Form irregular, centre often paler than rest.
	4. Roseola.	<ol style="list-style-type: none"> 1. Circumscribed, rose-colored patches. 2. Form, circular, serrated or annular.
	5. Purpura.	
	6. Erythema.	Separately described in Tables XXVIII & XXIX.
	7. Erysipelas.	
4. <i>Bullæ</i> :	1. Pomphigus.	<ol style="list-style-type: none"> 1. Large vesicles or blebs, transparent. 2. Surrounded by an erythematous circle. 3. Fluid drying into a laminated crust.
	2. Pompholyx.	<ol style="list-style-type: none"> 1. Large vesicles or blebs, appearing in successive crops. Chronic. 2. No surrounding inflammation. 3. Break and heal without scale or crust.
5. <i>Pustulæ</i> :	1. Impetigo.	<ol style="list-style-type: none"> 1. Small pustules, yellow, itching. 2. Occur in groups. 3. Form an elevated crust, yellow, thin, scaly.
	2. Porrigo.	Similar characters to the foregoing.
	3. Ecthyma.	<ol style="list-style-type: none"> 1. Large pustules, terminating in thick, hard scabs, & leave a cicatrix. 2. Isolated, distinct. 3. Seated on hard base, depressed or umbilicated in centre.
	4. Variola.	
	5. Scabies.	<ol style="list-style-type: none"> 1. Minute vesicles or pustules, terminating in scabs, with intense itching. 2. Isolated and of an acuminate form. 3. Seated between fingers and in the flexures of the joints.

Eruptions continued.

6. <i>Vesiculæ</i> .	1. <i>Varicella</i> .	
	2. <i>Vaccinia</i> .	
	3. <i>Herpes</i> .	<ol style="list-style-type: none"> 1. Vesicles in clusters, varying in size from millet seed to a pea. 2. Skin, bright red areola. 3. Yields a fluid, drying into a thin incrustation or scab.
	4. <i>Rupia</i> .	<ol style="list-style-type: none"> 1. Large, flat, distinct vesicles. 2. Base slightly inflamed. 3. Fluid drying into thick, prominent crusts, assuming a conical form. 4. Leave ulcerations of various depths.
	5. <i>Miliaria</i> .	
	6. <i>Eczema</i> .	<ol style="list-style-type: none"> 1. Vesicles in patches, very minute, presenting shining appearance. 2. Skin of bright red colour. 3. Yields a fluid, drying into a laminated furfuraceous crust.
	7. <i>Aphthæ</i> .	
7. <i>Tubercula</i> .	1. <i>Rhyma</i> .	
	2. <i>Molluscum</i> .	
	3. <i>Vitilligo</i> .	
	4. <i>Acne</i> .	<ol style="list-style-type: none"> 1. Tubercular Tumours, slowly suppurating. 2. Isolated, situated on a hard base. 3. Occur on face and shoulders.
	5. <i>Lycosis</i> .	<ol style="list-style-type: none"> 1. Inflamed, darkish red, fleshy tubercles. 2. Gregarious and seated on bearded portion of face & scalp. 3. Discharge partial, viscid & sanious.
	6. <i>Lupus</i> .	Tubercles ending in spreading & difficultly checked ulcerations.
	7. <i>Elephantiasis</i> .	
	8. <i>Frambæsia</i> .	
	9. <i>Icthyosis</i> .	
8. <i>Maculæ</i> .	<ol style="list-style-type: none"> 1. <i>Ephulis</i> 2. <i>Nævus</i>, <i>Spilus</i> &c. 	
9. <i>Dermal excrescences</i> .	<ol style="list-style-type: none"> 1. <i>Verruca</i>. 2. <i>Clavus</i>. 3. <i>Callus</i> 	

TABLE XXVIII.

Erythema.

Placed among the Exanthemata by Willan.

1. <i>Characters</i> .	<ol style="list-style-type: none"> 1. A mere rash or efflorescence, a redness, — unattended by swelling, vesication or regular fever. 2. Erratic nature, lasting six or eight days.
	Six species, three only of which of special interest to Surgeon.
2. <i>Varieties</i> .	1. <i>Erythema leve</i> : Mild dissecting wounds, bright red flush, heat, pain and tingling, — very erratic.
	Treatment. — <ol style="list-style-type: none"> 1. Local: — Solution Nitrate of Silver, — Lead Lotion. 2. Constitutional: — Purgatives, Change of air, &c.
	2. <i>Erythema nodosum</i> : — Characters.
	Treatment. — Acids, Bark, Iron, Laxatives, &c.
	3. <i>Erythema intertrigo</i> : Characters and Treatment.

Erysipelas.

1. *An imperfect exanthema.*
 1. Runs a tolerably regular, definite course.
 2. Is attended by an eruption.
 3. Often prevails epidemically.
 4. Is capable of being communicated.
 2. *Stages.*
 1. *Premonitory; — (Incubation).*
 1. Febrile disturbance.
 2. Sore throat.
 2. *Eruptive.*
 1. Redness, dusky, rosy, shining, defined margin.
 2. Heat, burning.
 3. Pain, smarting, tingling.
 4. Swelling, serous effusion.
 5. Vesication on surface. — } Often absent.
 - * Attended generally with asthenic fever.
 3. *Decline.* — Desquamation, subsidence.
 3. *Termination.*
 1. Recovery
 2. *Fatal.*
 1. Cerebral effusion; — Coma.
 2. Laryngeal do. — Apnoea.
 3. Gradual asthenia.
 4. *Treatment.*
 1. *Local.*
 1. Fomentation.
 2. Protection from air, Flour.
 3. Puncture.
 4. Caustic.
 - * Caution: — cold application
 2. *Constitutional.*
 1. Purgatives.
 2. Stimulants and support, when.
 3. Tonics: Quinine, &c.
 4. Hygienic & dietetic means, fresh air, careful watching, &c.
- Varieties briefly alluded to.*

Phlegmon.

Character, symptoms, progress, termination and treatment.

Furunculus or Boil.

Numerous, gregarious, circumscribed inflammations of skin and cellular tissue, ending in death or slough. — Characters, progress, termination, treatment.

Carbuncle.

Circumscribed acute inflammation of cellular tissue ending in death.

Characters, progress, prognosis, Constitutional symptoms.

Treatment. —

1. Local: — Incision, Caution.
2. Constitutional: Stimulants, tonics, Opiates, dietetics.

Diffused Phlegmon.

Asthenic destructive inflammation of skin and cellular tissue.

Local and Constitutional symptoms described. Progress, result, &c.

Treatment: Short and long incisions considered.

Cases illustrative: Surgical authorities &c.

Syphilis.

1. *Is there such a disease?* — Arguments for and against; see Wallace, Ricord, &c.
2. *Its first appearance.* — { 1. Existence in ancient times: see Bacot.
2. Its first appearance in Europe in 1494, 5 { 1. At Siege of Naples.
2. Brought from West Indies.
3. *Its nature.* — { It is a specific animal poison capable of acting locally & constitutionally
and of being propagated by contact or inoculation.
4. *Are there more poisons than one?* { Carmichael maintains plurality: erroneous: Evidences entirely in favor
of only one poison.
5. *Identity of Syphilis & Gonorrhœa.* { See arguments of J. Hunter; Ricord, Article in Cooper's Surgical
Dictionary. — They are totally distinct affections.
6. *Its effects:* — { 1. Local, or Primary, — { 1. Chancre or Ulcer. — TABLE XXXI. Kerchiefs & Treat. TABLES XXXII to XXXVIII.
2. Bubo. — XXXIX.
2. Constitutional, or Secondary, — { 1. Affections of the Skin. — TABLE XLI.
2. " " Mucous membrane. — XLII.
3. " " Fibrous tissues, &c.

TABLE XXXI.

I. Local or Primary Syphilis.

1. Chancre or Ulcer.

1. *Stages.* — { 1. Stage of incubation; — 3 to 10 days.
2. Vesicle, may be inflammatory, pustular: attended with heat, redness & itching.
3. Scab, may be absent; — generally present when sore on exterior.
4. Ulcer or Chancre: { 1. Situation, on the varied structures of the Genitals. Unnatural situat^{ns} adverted to.
2. Form & size, usually circular or oval; &c.
3. Edges raised, undermined, indurated, &c.
4. Surface excavated, raised, level, &c.
5. Secretion: { 1. Vesicular stage, lymph; where pustular, pus.
2. Ulcerative stage, reddish brown, tenacious, gluey, semi-transparent.
3. Granulating stage, light brown, adhesive; like Chamois leather.
4. When healthy & mild poison, secretion more yellow and more like
pus, and less tenacious.
5. Granulation or reparation: may be rapid or tardy.
6. Cicatrization.
2. *Causes of varieties.* — { 1. Intensity or dose of the Poison — { 1. May be dilute, hence mild in every respect.
2. May be active & energetic, hence disastrous results if unchecked.
2. Condition of Constitution — { 1. Healthy, — more capable of withstanding and eliminating poison.
2. Weak.
3. Irritable; — late hours, spirits, study; — bad subjects for Syphilis.
4. Strumous; — long hold of poison; difficult to eradicate.
5. Cachectic; severe sloughing; Rupia, &c.
3. Structure whereon situated — { 1. Body & outer Prepuce: — External labia: cuticular: resistance of mild poison.
2. Preputial fold: fringing sores, producing Phymosis.
3. Inner Prepuce: — Labia minora: — Epithelial. Aphtha &c.
4. Corona & frænum: — Fourchette: — deep excavated sore; collects.
5. Glans & meatus: — Clitoris and meatus.
6. Urethra: — Vagina & os uteri.
3. *Classification of varieties.* — { 1. Non-indurated — { I. SIMPLE APHTHOUS.
II. SUPERFICIAL RAISED.
III. IRRITABLE.
IV. PHAGEDÆNIC.
V. SLOUGHING.
2. Indurated — { VI. TRUE EXCAVATED CHANCRE.
VII. HARDENED TUMOUR.

Varieties of Chancre.

I. Simple Aphthous Sore.

Is like a patchy excoriation:— generally produced by mild diluted poison.

1. *Situation*. — *on parts most susceptible. Epithelium.*
2. *Characters*, — *(negative)*
 1. No induration. *Remarks.*
 2. No elevation of edges. *no deep excavation.*
 3. No Phagedæna.
 4. No pain.
3. *Diagnosis from*
 1. Abrasion or excoriation, the effects of Balanitis.
 2. Minute Aphthæ.
 3. Herpes preputialis.
 4. Psoriasis: fissures or cracks.
 - * No character to be relied upon. *Inoculation the only test: its propriety discussed.*
4. *Treatment*: —
 1. In vesicular stage:— Open; escharotics; caustic; Nitric acid, Potassa fusa.
 2. " ulcerative " Astringent solutions. Water dressings; Nitrate of Silver.
 3. " granulating " Stimulating applications if required; Black wash, &c.

Remarks on the constitutional effects likely to result. Carmichael, Ricord and others on the subject.

TABLE XXXIII.

II. Superficial Raised Sore.

1. *Situation*. — *generally on exterior and fringe of prepuce.*
2. *Characters*. —
 1. No induration.
 2. Edges elevated & surface raised; well defined.
 3. No Phagedæna.
 4. Often painful.
3. *Treatment*. — *Same as in Aphthous variety. Where chronic, alteratives required.*
4. *Remarks*. — *Generally observed in advanced stage, when in size of a large sore, with a thick brown crust. It commences as a vesicle, then scabs, Succession of scabs; on taking off crust, surface covered with dirty colored, unhealthy, gummy, gluey, sloughy fibrine. Generally runs a chronic course. Reparative stage late. Parts around may be infiltrated with fibrine, giving rise to hardening & thus simulating an indurated chancre. Generally followed by Secondary symptoms, and often by suppurating, Abscess. Flennix, Carmichael and others referred to.*

TABLE XXXIV.

III. Irritable Sore.

1. *Situation*. — *Frenum, corona, meatus, — fourchette.*
2. *Causes*. —
 1. Local. — *its situation*
 2. Constitutional.
 1. Natural irritability.
 2. Acquired " *by habits: night air, debauch, spirits.*
 3. Use of Mercury.
3. *Characters*. —
 1. The Aphthous sore set astray.
 2. Edges thin, serrated.
 3. Discharge thin acrid, aplastic fibrine.
 4. Pain constant, excessive.
 5. Constitutional irritation, restless, loss of sleep & appetite.
4. *Treatment*. —
 1. Local: —
 1. Mild applications; water dressings.
 2. Weak sedative solutions.
 3. Weak astringents.
 4. Coating of nitrate of Silver, &c.
 2. Constitutional.
 1. Rest and attention to secretions.
 2. Opials &c.
 3. Tonics.
 4. Avoid stimulants and fatigue.
 5. Withdraw and abstain from Mercury.

III. Phagedænic Sore.

1. *Situation*. — *on Glans, Corona, inner Prepuce, — Labia.*
2. *Causes*. — { 1. *Local*. — Excess of action over local power of resistance.
2. *Constitutional* { 1. Great Debility: — { 1. Natural.
2. Acquired: impure air, hard labour, late hours, &c.
2. Excessive irritability: — Spirits, debauch, intemperance, &c.
3. *Characters*. — { 1. *Local*: — { 1. As a modified, mismanaged Aphthous Sore.
2. Acute, spreading, molecular disintegration; often with hæmorrhage.
3. No defined edge; — irregular, ragged.
4. Surface uneven, gnawed; — brownish hue, with sanious discharge.
5. No attempt at repair.
6. Pain sharp and burning.
2. *Constitutional*. { 1. Febrile disturbance.
2. Great constitutional irritation.
4. *Treatment*. — { 1. *Local*: — { 1. Mild, lenient: — Water dressings, Solutions of Opium, Morphia, &c.
2. Stimulating: — R. Benzoin: C. — Balsam Peru: — Ol. Tereb.: — &c.
3. Active: escharotics, Nitric Acid, Potassa Fusæ, Arg. Nitrat., &c.
* Remarks: — preference to the latter.
2. *Constitutional*. { 1. Quietude, rest; attention to secretions.
2. Opiales.
3. Cautious use of Stimulants and Tonics
4. Avoid Mercury.
- Remarks on after consequences.* — Rose, Guthrie, Carmichael, Ricord, &c.

TABLE XXXVI.

V. Sloughing or Gangrenous Sore.

1. *Cause*, — Same as in Phagedænic: more intense action & greater debility: often essentially inflammatory.
2. *Characters*. — { 1. *Local*: — { 1. Immediate formation of Slough, or death: — { 1. Humid: — most common.
2. Dry, black, rare: — Swan Alley.
2. Rapid extension.
3. Repetition of sloughing processes; slough after slough, each larger and deeper.
4. Surface ashy hue, soft, tawny; angry.
5. Discharge profuse, fetid, mixed with debris.
2. *Constitutional*. { 1. Highly irritative, fever, &c.
2. Disordered digestive system.
3. *Treatment*, the same as in the Phagedænic.
Question respecting the advisability of local depletion in some forms.

* *Sloughing Phagedænic Sore*, — a combination of the two preceding varieties.

TABLE XXXVII.

VI. The Indurated Sore.

The true Syphilitic Sore: attended with effusion of plastic fibrine.

1. *Situation*. — *Glans, outer prepuce &c.*
2. *Characters*. — { 1. *Local*: — { 1. Circular, excavated, as if punched out.
2. Edges raised & hard.
3. Base indurated.
4. Surface covered with tawny, dusky fibrine, like Chamoir's leather, cannot be wiped off.
Indolent; copious plastic exudation.
2. *Constitutional*: healthy, good.
3. *Treatment*. — { 1. *Local*: — { 1. Destroy Sore, Escharotics.
2. Astringent solutions.
3. Stimulating, when indolent, &c.
2. *Constitutional*: Question of propriety of Mercury: — specially attended to in TABLE XXXVIII.
- Remarks on liability of constitutional affection.* — Hennen, Carmichael, Ricord & others.

VII. The Hardened Tumour.

Induration without abrasion of cuticle. Query: a minute sore healed? — Remarks: — Treatment.

Varieties of Chancre.

General survey of Treatment.

1. Local. —
1. Excision. — Hunter, Wallace, Colles: now discarded.
 2. Cauterization, Escharotics, — Ricord guarantees immunity if thoroughly performed within 4 days. Analogy with Youatt's remarks on poisoned wounds. Opinions thereon. Different varieties of escharotics. How often to be repeated.
 3. Mild topical application: Water dressing, &c.
 4. Lotions. —

1. Astringent.	{	1. Mineral. best, used weak.	{	Lead, Alum, Zinc, Copper, Nitrate of Silver, &c.
2. Sedative.	{	2. Vegetable. Tannin, &c.	{	
3. Stimulating.	{	Opium, Morphia, Poppies, &c.	{	
&c. &c. &c.	{	Tinctures or spirits well diluted; Black & Yellow wash.	{	
 5. Ointments, — for most part deprecated.
2. Constitutional. —
1. Syphilization. Subject considered. Theories & experiments alluded to. — Total condemnation.
 2. Prophylactic. Doctrine of Broussais; lately brought into notice by Zittmann.

1. Modus operandi.	{	Specific & destructive influence on virus.
2. Its expediency.	{	1. Zucker cure. 2. Const. symptoms less frequent, & milder.
3. When beneficial.	{	1. In all indurated Chancres. 2. In chronic, tardy healing sore. 3. In granulating stage of all sores.
4. When hurtful.	{	1. In non-indurated sores. 2. In rapidly spreading sores. 3. In the ulcerative stage. 4. In peculiar conditions of constitution.
5. How administered.	{	1. Internally. 2. Inunction.
6. How long continued.	{	Until hardness subsides.
*	{	Opinions in support of its use.
 3. Mercury. —

1. Arguments for	{	1. In non-indurated sores. 2. In rapidly spreading sores. 3. In the ulcerative stage. 4. In peculiar conditions of constitution.
2. Arguments against	{	1. In non-indurated sores. 2. In rapidly spreading sores. 3. In the ulcerative stage. 4. In peculiar conditions of constitution.
*	{	Opinions in support of its use.
 4. General principles.

Local Syphilis continued.

2. Bubo.

Remarks on the anatomy of the absorbents of the genitals and inguinal regions, in the male and female. Form a chain of barriers to the circulation of the poison. Modes of absorption of the virus.

Can we distinguish a syphilitic from a non-syphilitic Bubo?

Can a true syphilitic Bubo occur without a primary sore?

Treatment.

- | | | | | | |
|---|-----|---|---|--|---|
| 1. Early stage. | — { | 1. Rest, compression; antiphlogistics; aperients.
2. Abortive treatment; deep cauterization.
3. Mercurial treatment; internally & locally.
4. Iodine and other remedies. Nitrate of silver locally, &c.
* Each severally discussed; varied opinions thereon. | | | |
| 2. Inflammatory. | — { | 1. Local depletion. Leeches in relays: Heat & moisture afterwards.
2. Blisters & applications to raw surface, of powerful absorbents.
3. Mercury, Iodine &c. as in early stage. | | | |
| 3. Suppurating. | — { | 1. Promote absorption;— possibility of such: remedies useful.
2. Evacuation of pus. { <table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td style="vertical-align: top;">1. Allow it to burst of itself. — Deprecated.</td> </tr> <tr> <td style="vertical-align: top;">2. Opening by means of small or large punctures.</td> </tr> <tr> <td style="vertical-align: top;">3. — " — " — " — " — " vertical or oblique incisions.</td> </tr> </table> | 1. Allow it to burst of itself. — Deprecated. | 2. Opening by means of small or large punctures. | 3. — " — " — " — " — " vertical or oblique incisions. |
| 1. Allow it to burst of itself. — Deprecated. | | | | | |
| 2. Opening by means of small or large punctures. | | | | | |
| 3. — " — " — " — " — " vertical or oblique incisions. | | | | | |
| 4. Open, ulcerated. | — { | 1. Healthy, healing;— water dressings.
2. Inflamed: repose; low diet; anodynes, &c. &c.
3. Sloughing: Escharotics &c.
4. Chronic, indolent, callous: Caustic; removal of edges, &c.
5. Fistulous: compression; laying sinus open; Astringent injections &c. | | | |
| 5. Granulating & cicatrizing. | | | | | |
| 6. Chronic indolent bubo. | | Counter-irritation. Iodine; Mercury. &c. | | | |

Remarks as to whether Constitutional Syphilis is milder & less frequent after suppurating buboes.

II. Constitutional or Secondary Syphilis.

Contamination of blood & system by poison, and elimination thereof by the Skin, Mucous membranes &c., &c., in shape of Eruptions, Ulcers, &c.

1. Its appearance. Four to five or six weeks. — may be longer.
2. Causes predisposing. — { 1. Natural constitution of patient: Strumous, irritable, &c.
2. Particular condition of health at time of inoculation: weak, cachectic, &c.
3. Has Mercury any influence in destroying poison & preventing Secondaries? Already considered in the treatment of Primary (TABLE XXXVIII). Opinions & remarks reiterated.
4. Can a person affected with secondary syphilis communicate it to another?
5. The general plan of treatment of constitutional syphilis to be conducted on the common principles of Surgery, aided by the varied special remedies for elimin. ating the poison.
 1. The preparations of Iodine their action & use considered.
 2. — — — — — Mercury — — — — —
 3. — — — — — Iron — — — — —
 4. Antiphlogistics, Sudorifics, Tonics, Acids.
 5. Sarsaparilla, Guaiacum, &c.
 6. Vapour baths, Fumigations, &c.

TABLE XLI.

1. Syphilitic Eruptions. — Skin.

Generally ushered in by synocha, and mild febrile disturbance. All attended with more or less red copper-colour, passing into dull brown.

1. Papulæ: — Sichen: — small pimples containing neither lymph nor pus, surrounded by small inflamed areolæ of coppery colour.
2. Squamæ: — { 1. Lepra: — regular defined eruption. — } Obsolete; chronic; tendency to excoriate.
2. Psoriasis: — irregular, diffused, continuous. } Bear Mercury, Arsenic, Iodine, &c.
3. Exanthema: — Irregular patches of coppery or bronze colour, attended with febrile disturbance.
4. Bullæ: — Exceedingly rare.
5. Pustulæ: — Ecthyma: — slowly developed pustules with a hard raised base of deep brown or copper colour.
6. Vesiculæ: — { 1. Eczema: — vesicles on an inflamed copper-coloured base; indolent; rare.
2. Rupia: — common; limpet shell crusts on copper coloured base; ending in ulceration, attended with cachexia, and aggravated by Mercury.
7. Tubercula: — Deep seated, solid, circumscribed elevations, isolated, — of shining, livid brown colour, & with coppery areolæ: often terminate in excavated ulceration.
8. Maculæ: — Coppery stains of skin, without any attendant symptoms.
9. Dermal excrescences: — { Mucous tubercles about anus and genitals. Their diagnosis from warts, for which they are often mistaken. Common in females. Appear about 3^d month. Cured by Nitrate of Silver, Black or yellow wash, &c. & exhibitⁿ of Iodine.

General remarks on Treatment, Medicinal & Hygienic.

2. Affections of the appendages to the Skin.

1. Hair: — Alopecia, and scalp Eruption.
2. Nails: — Fissures, cracks, onychia, &c.

3. Affections of the Mucous Membrane. — Ulceration.

1. Fauces & Tonsils.

1. Situation. Tonsils, pillars of fauces, velum, uvula, pharynx.
2. Character
 1. Shape: ————— circular, serpentine &c.
 2. Surface: ————— superficial, deep, excavated.
 3. Condition: —————
 1. Inflamed.
 2. Phagedænic.
 3. Sloughing.
 4. Indolent.
 4. Generally attended with enlarged nuchal glands.
3. Diagnosis. from common sore-throat.
4. Treatment. The old question of Mercury discussed.
Recommendation of Iodide of Potassium, internally, & caustic locally.

2. Mouth, lips, & nose. Characters similar to above. — Generally superficial and of aphthous variety. Those of the nose may become intractable from use of mercury, producing ozaena & ulceration of septum. Local applications.

3. Tongue.

1. Situation. — sides, near molar teeth; on dorsum; tip & base.
2. Varieties: —
 1. Superficial abrasion: — Psoriasis; serpentine; circular.
 2. Cleft or fissure, — with or without induration. Chronic.
 3. Small aphthous: — peculiar white speck, afterwards ulceration.
 4. Superficial raised sore: — not unlike the mucous tubercle.
 5. True specific ulcer: —
 1. Circular or horse shoe shaped.
 2. Deep excavated surface.
 3. Raised hardened edges.
 4. Yellow tenacious secretion.
 5. Condition. —
 1. Inflamed.
 2. Phagedænic.
 3. Sloughing.
 4. Indolent.
 6. Diagnosis from Cancer, for which it is sometimes mistaken.
3. Treatment local and constitutional.

4. Anus. — Fissures, cracks, ulcerations, Excessively painful. Diagnosis from primary in this situation. Treatment.

4. Affections of the Fibrous & Muscular Tissues.

1. *Fasciae & tendinous expansion of muscles.* Sub-acute chronic inflammation.
2. *Joints.* Pain and chronic inflammation, simulating rheumatism.
3. *Iris.* Iritis, rapid development of acute fibrinous effusion in shape of small tubercles. Treatment.

5. Affections of the Cellular Membrane. — Ulcers.

Their peculiar characters; circular, serpentine or horse-shoe shape. Referred to under the head of Ulcers as *Cachectic*. May be indolent or become *Phagedaenic*.

- | | | |
|--|---|---|
| 1. Face, nose, lips. — | { | 1. Characters — {
2. Succession of scabbing, & extension of Ulcer underneath.
3. Tendency to spread.
2. Diagnosis — from Lupus, — Cancer, & primary sore on lip.
3. Treatment. Escharotics, Iodine, No Mercury. |
| 2. Body & extremities See Ulcers generally, TABLE XIX. | | |

6. Affections of the Larynx.

Ulceration of Cartilage. Symptoms, Diagnosis and Treatment. May require Tracheotomy. Value of counter-irritation.

7. Affections of Periosteum and Bones.

1. *Periosteum.* Nodes. Symptoms, Diagnosis and Treatment.
2. *Bone.* Ossitis. Caries. Referred to in Lectures on Bones.
Question, as to how far these affections are the result of Syphilis, or the Mercury administered.

8. Affections of Internal Organs, &c.

- | | | |
|-------------|----------|-----------|
| 1. Testicle | 2. Lungs | 3. Brain. |
|-------------|----------|-----------|

9. Infantile Syphilis.

Mode of infection.

Symptoms, Diagnosis, and Treatment.

Burns and Scalds.

General Remarks. ——— In civil and military life.

1. <i>Symptoms.</i>	1. <i>Local.</i>	1. Superficial inflammation. <i>pain, heat, redness.</i>	
		2. With vesication. — <i>Diagnosis, progress, result.</i>	
		3. Disorganization: — <i>Dupuytren's further division.</i>	{ 1. Cutis: superficial yellow-brown patch, partly insensible. { 1. Soft, yellow, from fluids. { 2. Firm, hard, brown, from solids. 2. Cutis, wholly cellular tissue. 3. Layers of Skin, cellular tissue & portion of muscles. 4. Complete carbonization of burnt part.
	2. <i>Constitutional.</i>	1. Stage of collapse — <i>or early stage.</i> —	{ 1. General prostration, no rallying. { 2. Imperfect reaction, delirium, excitement. { 3. Serous effusion; Coma, &c.
		2. Stage of inflammation. —	{ 1. Inflammatory fever. { 2. Muc. enteritis. { 3. Ulceration of bowels, duodenum &c. { 4. Pneumonia.
		3. Stage of suppuration. —	{ 1. Suppurative fever. { 2. Drain on system. { 3. Ectec. { 4. Lung mischief.

2. *Prognosis.* *Extent and depth, region, cause, age, habit, constitution.*

3. *Post mortem appearances.*

4. <i>Treatment.</i>	1. <i>Local.</i>	1. Protection from air. <i>Flour, Carded wool, &c.</i>
		2. Cold or refrigerants.
		3. Warmth & stimulants.
	2. <i>Constitutional.</i>	1. During 1 st stage. — <i>calminatives, restoratives, stimulants.</i>
		2. During 2 nd stage. — <i>antiphlogistics, sedatives &c.</i>
		3. During 3 rd stage. — <i>support, tonics &c.</i>
	* <i>Caution.</i> — <i>Opium in Children.</i>	

Remarks on cicatrization & cicatrices of Burns & scalds.

Deformities ensuing. — Operative proceedings discussed.

Contusions.

1. Definition.

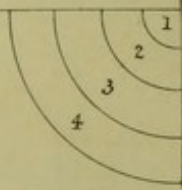
General remarks.

2. Effects and appearances.

- | | | | |
|---|--|---|---|
| {
1. On living tissues

2. On dead body. | {
1. Suspended function.

2. Ecchymosis or bruise.

3. Complication. —
<i>Subcutaneous lesion.</i> | {
1. Numbing of surface of part.
2. Temporary paralysis of muscular tissue? |  |
| | | {
1. Rupture of capillary vessels.

2. Phases of Colour. —
{
1. Blue, livid.
2. Violet.
3. Green.
4. Yellow. | |
| | | {
3. Periods & duration of Colours. —
{
1. Few hours.
2. 18 to 24 hours.
3. 5 to 6 days.
4. 7 to 8 days. | |
| | | {
4. Extent & situation. —
{
1. Rupture of vessels of large size: effusion of blood.
2. Ruptured muscular fibre.
3. Subcutaneous disorganization. Wind blows, Cannon.
4. Inflammation, suppuration, &c. | |
| {
1. Caused during life. —

2. Caused after death. — | {
1. Blood coagulated, coloured, rings after 18 hours.
2. Cutis affected, part swollen.
3. Hardness.

1. Blood fluid, partly coagulated, venous.
2. Cutis unaffected.
3. No hardness. | | |

3. Ecchymosis not a proof of blow.

- | | |
|---|--|
| {
1. On the living.

2. On the dead. | {
1. Purpura.
2. Erythema nodosum, &c. |
| | {
1. Lividity.
2. Putrefaction. |

4. Treatment.

- | | |
|---|--|
| {
1. Rest and position.
2. Check further effusion. Cold &c.
3. Promote absorption.
4. Avoid incision. | |
| | |
| | |
| | |

Wounds.

Definition.	Preliminary remarks.
Varieties.	1. According to situation, region, &c.
	2. — " — " — structures involved.
	3. — " — " — extent & depth: superficial or deep.
	4. — " — " — form, as clean, jagged, angular, round.
	5. — " — " — direction, longitudinal, transverse, oblique.
	6. — " — " — nature of instrument, cutting, perforating, tearing &c.
	7. — " — " — complications present.
Division.	I. INCISED WOUNDS. — TABLE XLVI.
	II. PUNCTURED WOUNDS. — XLVIII.
	III. LACERATED WOUNDS. — L.
	IV. GUN-SHOT WOUNDS. — LI. & LII.
	V. POISONED WOUNDS. — LIII. to LVIII.

TABLE XLVI.

I. Incised Wounds.

1. Definition.	1. Instrument acts as a saw.
	2. Wound larger than instrument.
2. Character.	3. Wound has — { 1. Commencement.
	2. Middle.
	3. Termination.
	4. Direction.
3. Effects on living.	1. Separation of edges { 1. Elasticity of tissue.
	2. Effusion of blood. { 2. Tension of part.
	3. Pain. { 3. Direction of the muscular fibres.
	4. No sanguineous infiltration into cellular tissue.
	1. Edges not separated, nor everted; — lie close together.
	2. Absence of copious hæmorrhage; if any, venous.
4. Effects on dead.	3. Absence of all trace of coagulum.
	4. No sanguineous infiltration into cellular tissue.
* General remarks on Diagnosis, Prognosis &c.	
5. Treatment.	1. Restrain hæmorrhage { 1. Small vessels, clean, expose to air.
	2. Remove extraneous matter.
	3. Procure union of edges { 2. Numerous & small. Cold, pressure, styptics, escharotics.
	4. Sutures and mode of use { 3. Large. Torsion; ligature.
	5. Prevent inflammation.
	6. Remarks on circumstances preventing union.
	7. Small vessels, clean, expose to air.
	8. Numerous & small. Cold, pressure, styptics, escharotics.
	9. Large. Torsion; ligature.
	10. Deep. Plug, compress.

The union of Wounds.

Literature of the subject. Bell's excellent description.

Ancient methods: more canonico. Sympathetic cures. Secret dressings.

Suckers. Remarkable instances of primary adhesion.

1. Immediate union. { Adhesion without new material. Dr Macartney.
 { Conditions necessary. — { 1. Exact co-adaptation.
 { 2. Absence of inflammation.

2. Healing by scabbing: { 1. By growth.. scabbing.. Hunter's remarks.
Plastic exudation. - { Effused fluid drying over wound and cell develop-
ment thereunder.
2. By modelling process. Successive layers of plastic matter.

1. Without inflammation.

3. Primary adhesion.
"First intention"

1. Liquor sanguinis.	{	1. Serum trickles away.
2. Fibrine remains		1. Cell-development. 2. Organization. 3. Vascularization.
2. Blood.	{	1. Neither necessary nor advantageous, but irritating.
		2. May be enclosed in plastic material and absorbed.
		3. May be organized, but retards healing.

* The above processes painless, no inflammation, no pus, no waste of material. Exclusion of air essential.

1. Subsidence from inflammatory acme. Stage of Incubation.

2 Fibrinization { 1. Part only passes off.
effusion modified { 2. Plastic portion remains.
Incorporation thereof with tissues.

4. Py granulation "second intention".	3. Granulation	1. Cell development. Cell upon cell.			
		2. Vascularization. <table border="0"> <tr> <td>1. Self formed.</td> </tr> <tr> <td>2. Outgrowth.</td> </tr> <tr> <td>3. Channelling.</td> </tr> </table>	1. Self formed.	2. Outgrowth.	3. Channelling.
		1. Self formed.			
2. Outgrowth.					
3. Channelling.					
3 Transmutation.					

2. *With inflammation.*

5. Cicatrization or formation of cuticle. Characters.

5. Union of granulations } Contact, adhesion, vascularization
Secondary adhesion.

Each of the above processes more minutely entered into and discussed; embracing the latest researches on the subject.

Hunter, Paget, Macartney, and other works referred to.

II. *Punctured Wounds.*

1. *Characters* — { 1. A perforation or stab.
2. Wound smaller than the instrument: elasticity of skin.
3. Form. — { 1. Linear, when instrument round.
2. Angular, when angular one used, takes form of angle.
2. *Effects* — { 1. Primary. — { 1. Separates & perforates tissues.
2. Rushes and tears parts before it.
3. Hæmorrhage, rare: vessels roll away: if wounded, extravasation.
4. Pain, often — { 1. Immediate injury to nerve.
2. Consecutive, subsequent pressure from infl^d or blood.
2. Secondary — { 1. Inflammation. — { 1. Diffused.
2. Absorbent, see following Table.
2. Suppuration. — Rigor. Fever. Ex. Thecal Abscess, &c.
3. Affection of nerves. — Neuralgia, Tetanus, &c.
3. *Treatment* — { 1. Local. — { 1. Rest; Position; Applications, cold, warm, &c.
2. Dilatation of wound. — { 1. Where serious hæmorrhage.
2. — — foreign body left in
3. — — confined pus.
2. Constitutional. as in General principles.

TABLE XLIX.

Absorbent Inflammation.

1. *Symptoms* — { Wound becomes inflamed. — Shooting pains extending up.
1. Local — { 1. Redness. — { 1. Erythema of skin.
2. Streaks of bright redness over course of lymphatics.
2. Pain & Heat. — Hot, burning, increased by pressure.
3. Swelling. — Considerable, spongy: vessels feel hard & corded.
4. Glands involved. — acute, painful.
2. Constitutional. — { 1. Febrile disturbance.
2. Inflammatory fever of low type.
3. True typhoid fever in severe form.
2. *Treatment*, — Local & Constitutional, on principles laid down in Inflammation generally.

TABLE L.

III. *Lacerated Wounds.*

1. *Characters* — { 1. Forcible and powerful tearing asunder.
2. Open, irregular, jagged wound.
3. May be superficial or deep, slight or extensive.
2. *Effects, primary* — { 1. Local. — { 1. Edges — { 1. Considerable separation.
2. Ragged and everted.
2. Hæmorrhage slight, vessels torn: retraction within sheath. Example.
3. Pain severe.
4. Presence of foreign body.
2. Constitutional. — Where extensive, may have severe collapse; & may be fatal. Example.
3. *Effects, secondary* — { 1. Inflammation, &c.
2. Mortification from disorganization of parts.
3. Affection of nervous system. Tetanus, &c.
4. Secondary Hæmorrhage.
4. *Union by adhesion*, absent.
5. *Treatment* — { 1. Local. — { 1. Tie large vessels if wounded, altho' no bleeding.
2. Remove extraneous matters.
3. Bring edges into apposition; avoid sutures: take care of tension, &c.
4. Position, relax muscles, &c.
5. Dressing, Water, lightly used.
2. Constitutional. — { 1. Attention to secretions & excretions.
2. Allay irritability.
3. Subdue inflammatory symptoms.

IV. *Gun-shot Wounds.*

1. Definition

2. Characters

1. Are lacerated wounds, with contusion of highest degree.
2. Involve surrounding parts.
3. Followed by sloughing and suppuration,
4. Healing by second intention.

3. Varieties owing to

1. Size, Form & number of balls or projectiles. —
 1. Musket, Cannon, Pistol.
 2. Smooth, round, angular.
 3. One, two or more.
2. Degree of velocity. Small or large charge: rammed down tight, &c.
3. Course taken by missile; slanting or otherwise.
4. Nature of tissues traversed: Muscle, bone, &c.
5. Other attending circumstances: Position, near or distant &c.

4. *Effects, —*
primary.

1. Local. —
- 1. Number of wounds —
 - 1. One & missile lodged
 - 2. One & missile not lodged
 - 3. Two, three, four or more openings
 - 2. Appearance of wound —
 - 1. Entrance. —
 - 1. Round.
 - 2. Regular
 - 3. Inverted.
 - 2. Track. — Torn, contused, as if charred.
 - 3. Exit —
 - 1. Larger than entrance wound.
 - 2. Irregular, ragged.
 - 3. Everted.
 - 4. Aspect, owing to —
 - 1. Crushing & disorganization of tissues
 - 2. Combustion of parts?
 - 3. Surrounding ecchymosis: Black, violet, brown, yellow.
 - 5. Exceptions to rule — see Note below. *
 - 3. Haemorrhage. — Slight. Vessels torn through. Guthrie maintains there is
 - 4. Pain. —
 - 1. Inconsiderable: dull blow: may be numbness.
 - 2. Acute, &c.
 - 5. Foreign body —
 - 1. Projectile itself
 - 2. Parts carried before & with Projectile.
 - 3. Spiculae of bone.
2. Constitutional. —
- 1. Severe. Collapse; peculiar hue; shock; alarm; anxiety; remor.
 - 2. Mild.

* Note.

Exceptions to rule

- [illegible]

Gun-shot Wounds continued.

5. <i>Effects, — secondary.</i>	1. <i>Local.</i>	1. Inflammation & inflammatory engorgement of wound. Hot, tense, swollen.
		2. Suppuration: burrowing &c.
		3. Sloughing: sloughs detached and acting as foreign bodies.
		4. Granulation.
	5. Haemorrhage, — secondary.	1. 9 th to 12 th day, separation of slough from artery.
		2. Ulceration of vessel.
	6. Mortification.	1. Total disorganization.
		2. Excess of inflammation.
		3. Lesion of large vessel.
	2. <i>Constitutional.</i>	1. Irritative fever.
		2. Inflammatory fever.
		3. Suppurative fever and Pyæmia.
	1. <i>Attend to shock</i>	1. Repose.
		2. Cautious use of stimuli.
	2. <i>During the early stage.</i>	1. Remove foreign bodies
		2. Arrest hæmorrhage. Spontaneous cessation. Ice.
	3. <i>During the inflammatory stage.</i>	1. Attention to secretions & excretions.
		2. Sedative & gentle stimulants, where required.
	4. <i>During the suppurative stage.</i>	3. Simple nutritious diet, not too low.
		1. Warmth; anodyne fomentations.
	1. <i>Local.</i>	2. Leeches.
		3. Incision. Remarks on old practice of dilatation. "debridement?"
	2. <i>Constitutional.</i>	1. Antiphlogistics.
		2. Diaphoretics & refrigerants.
		3. Sedatives.
	1. <i>Local.</i>	1. Removal of sloughs.
		2. Prevention of sinuses.
	2. <i>Constitutional.</i>	3. Warm stimulating applications.
		Support powers. give tonics &c.

TABLE LII.

Amputation in Gun-shot Wounds.

1. <i>Primary.</i>	1. Limb carried away.
	2. Bone, vessels and nerves involved.
	3. Hip, Knee & Ankle joints opened and bones involved.
	4. Compound fracture of Femur.
	5. Main vessels wounded and circulation interfered with.
	6. Crushed to disorganization.
2. <i>Secondary.</i>	Where the attempts to save are ineffectual, and patient losing ground.

V. *Poisoned Wounds.*

1. Definition

2. *Varieties.* — { 1. Dissecting Wounds. — { 1. Ordinary putrescence.
2. From healthy animals. — { 2. Poison in body before death.
3. From diseased animals. — { 1. Stings of insects.
2. Bites of Serpents.
3. Peculiar pustular eruption.
2. Glanders.
3. Hydrophobia.

TABLE LIV

1. *Dissecting Wounds.*

General remarks — { 1. Inoculation or irritation in an unhealthy constitution.
2. Specific poison in dead body or common products of putrefaction.

1. Symptoms. — {
1. Mild form. — {
1. Local. — {
1. Inflammation, small circular red spot around
puncture; defined.
2. Pain, extending to axilla & shoulder.
3. Pus-tule bursts.
4. Suppuration unhealthy; sero-purulent.
5. Surrounding erythema.
6. Glands involved: suppuration. Axilla.
2. Constitutional. — {
1. Febrile disturbance, loss of appetite.
2. Diarrhoea.
3. Fetid eructation and breathing, &c.
2. Severe form. — {
1. Local. — {
1. Diffused cellular inflammation, rapid.
2. Absorbent inflammation.
3. Diffused speedy suppuration, unhealthy.
4. Purulent infiltration; side of chest: remote parts.
5. Erysipelas.
6. Phlebitis.
2. Constitutional. — {
1. Inflammatory fever - acute, sthenic or asthenic.
2. Severe constitutional irritation.
3. Typhoid fever.
4. Pyæmia.

Excellent description, with remarks and cases in "Travers on Constitutional irritation".

2. *Termination & morbid appearances.*

3. *Diagnosis.*

4. Prognosis.

4. Prognosis.
5. Pathology. — { 1. Absorption of poison, acting on blood and nervous system. — { 1. Many inoculated from same subject.
2. Most frequently from fresh subject.
3. Disease of which subject died. Puerperal fever. Eutoniitis.
4. May be unattended with any local affection. (Elecock's case).
5. May be without wound or abrasion.
2. Unhealthy constitution.
6. Treatment. — { 1. Local. — { 1. Suction.
2. Caustic.
3. Warmth, moisture &c.
4. Incision.
5. Leeches &c.
2. Constitutional. { 1. General principles
2. Sedatives and tonics.
3. Fresh air. Diet.

Poisoned Wounds continued.

2. Stings of Insects.

Bees, Wasps, Hornets, &c. - Anatomy of Sting. Extract Sting. General Antiphlogistics.

TABLE LV.

3. Bites of Serpents.

Viper, Cobra di Capello.

Anatomy & mechanism of fang, & secretion of poison &c.

- | | | | | |
|--------------|---|--------------------|---|---|
| 1. Symptoms. | { | 1. Local. | { | 1. Pain instant, acute; rapid extension, Heat.
2. Redness & swelling.
3. Phlyctena. Sanious discharge.
4. Doughy, œdematous softness.
5. Part grows livid and cold, in spots.
6. Gangrene rapid. |
| | | 2. Constitutional. | { | 1. Anxiety and prostration.
2. Cold sweats, profuse.
3. Breathing difficult.
4. Vomiting and bilious stools. General yellowness of skin.
5. Excruciating pain at navel.
6. Rapid death. |

2. Prognosis.

3. Morbid appearances.

- | | | | | |
|---------------|---|--------------------|---|---|
| 4. Treatment. | { | 1. Local. | { | 1. Ligature.
2. Excision.
3. Caustic, and actual cautery.
4. Suction.
5. Cupping-glass vacuum. |
| | | 2. Constitutional. | { | 1. Restoratives.
2. Stimulants. Large & continued use of alcoholic spirits.
3. Ammonia.
4. Arsenic.
5. Other constitutional remedies. |

*For further details see article "Wounds" in Cooper's Surgical Dictionary.
Cases published. - Account of bite of Cobra di Capello at University College.*

4. Peculiar Pustular Eruption.

Description.	Course.	Termination.	Treatment.
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5. Glanders.

Literature of the subject.

Mr. Royer: *De la Morve et du Farcin chez l'homme*, 1837, gives a full account of the history of the disease from its first discovery in man down to the present period, reviewing the various writers.

Dr. Elliotson's description in *Med. Chir. Transactions*. Later writers referred to. Description of the disease in the Horse. Youatt's work referred to.

- | | |
|--------------------------------|---|
| 1. Forms. | { 1. Glanders. — where affecting nasal passages.
{ 2. Farcy. — " — " — lymphatics. |
| 2. Symptoms of acute Glanders. | { 1. Premonitory. — { 1. Indisposition, depression, wandering pains.
{ 2. Eruptive — { 2. Febrile symptoms, either sthenic or asthenic.
{ Sp. characters. — { 3. Rigors, sweating, profuse, sour. Diarrhæa.
{ 4. Diffused abscesses.
{ 2. Eruptive — { 1. Crop of pustules, remarkably hard, like small-pox, — specific, — peculiar.
{ Sp. characters. — { 2. Nasal discharge, offensive, viscid, yellow, mixed with blood.
{ 3. Swollen nose and face, dusky, shining, extending to eyes & scalp.
{ 4. Inflammation, swelling & discharge increase.
{ 5. Bullæ & fresh abscesses.
{ 6. Gangrene; portions of nose, eyelids &c.
{ 3. Decline. — { 1. Low delirium, — tremor.
{ 2. Typhoid fever.
{ 3. Pyæmia. |
| 3. Modifications | { 1. Chronic Glanders { 1. Slow development and course.
{ 2. Acute Farcy. — { 2. Viscid, fetid, discharge from nose.
{ 3. Chronic Farcy. — { 3. Pain & swelling of nose & lids.
{ 4. Emaciation, profuse perspiration.
{ 5. Abscesses near joints.
{ 6. Slow death.
{ 1. Inflammation of absorbents extending from wound, & fever.
{ 2. Diffused abscesses.
{ 3. Pustular eruption & nasal discharge.
{ 1. Wound degenerating into foul ulcer.
{ 2. Inflammation & suppuration of lymphatics: slow abscesses.
{ 3. Terminate in acute glanders. |
| 4. Prognosis. | |
| 5. Morbid anatomy & pathology. | |
| 6. Treatment. | { 1. Local. — { 1. Incision: Open abscesses as soon as formed.
{ 2. Constitutional — { 2. Water dressings.
{ 3. Creosote solutions: Nitrate of silver &c. Syringing nostrils.
{ 4. Fumigations.
{ 1. General principles.
{ 2. Tonics & support.
{ 3. Stimulants. |

Cases detailed. — Model in Museum; case published in *Med. Gazette*, vol. 21, p. 549.

6. Hydrophobia.

Synonymes. Explanation of terms. Often denominated Rabies.

Literature of the subject,— see *Cyclopaedia of practical Medicine*.

Symptoms in the dog.— Youatt's description.

Forms	1. Furious.	<ul style="list-style-type: none"> 1. Disposition to bite. 2. Augmented activity of sensorial functions. Paroxysms. 3. Breathing & deglutition affected by spasm. Peculiar bark. 4. Excited locomotive system; afterwards paralysis. &c. &c. &c.
	2. Sullen.	<ul style="list-style-type: none"> 1. No disposition to bite. 2. Shyness:— avoids society; refuses food: depression of spirits. 3. No fear of water; breathing labored: rough harsh bark. &c. &c. &c.

TABLE LVIII.

Hydrophobia in Man.

Mode of appearance &c. — see article in *Dr. Copland's Dictionary*.

1. Stage of incubation.	<ul style="list-style-type: none"> 1. Dose of poison. 2. State of constitution. — mental & corporeal influences. 3. Varies from 7 or 8 days to 7 or 9 months. usually 4 to 16 weeks. Exceptions.
2. Symptoms.	1. Premonitory. — <ul style="list-style-type: none"> 1. Changes in cicatrix — <ul style="list-style-type: none"> 1. Itching, painful, neuralgic. 2. Red, swollen, ulcerated. 2. Pain like chronic rheumatism, shooting along nerves to præcordia. 3. Febrile symptoms, nausea, vomiting, rigors, flushing &c. 4. Excitement, restless, irritable, anxious, dreams, sighing. 5. Mental depression, fear, lassitude.
	2. Specific character — nervous system. — <ul style="list-style-type: none"> 1. Stiffness of muscles of throat, tongue & jaw. peculiar pain in Epigastrium. 2. Spasms of muscles, — <ul style="list-style-type: none"> 1. Pharyngeal. 2. Laryngeal. Sense of suffocation. 3. General. 3. Thirst, burning, distressing, dread at quenching. 4. Senses morbidly acute. Sounds & sight of fluids, gusts of air, &c. &c. Convulsions. 5. Mind agitation, anxiety, alarm, despair. 6. Peculiar features. Staring eyes & contracted brows. &c. 7. Sputa viscid, difficult to expect, hawking, barking effort. 8. Mental disturbance very slight. temporary rabid impulses, illusions.
	3. Decline. — <ul style="list-style-type: none"> 1. Increase of paroxysms. 2. Rapid depression and intermission of convulsions. 3. Nervous exhaustion; incoherency; delirium; asphyxia!
3. Duration.	74 hours to 6 or 7 days. — Generally 2 nd 3 rd and 4 th days.

Hydrophobia in Man continued.

4. Morbid anatomy.	1. Bitten part, —	Nerves seen inflamed — not always.
	2. Digestive system. —	1. Mucous membrane reddened and injected. 2. Salivary glands sometimes normal, sometimes enlarged.
	3. Respiratory system. —	1. Injection and congestion of mucous membrane. 2. Thick viscid fluid in bronchi. 3. Congestion of lungs.
	4. Circulating system. —	1. Heart and Pericardium no changes. 2. Blood non-aerated, black, fluid.
	5. Nervous system. —	1. Brain and Membranes, congested, — changes slight. 2. Medulla and Spinal cord injected. Not sufficiently investigated.
5. Diagnosis		
6. Prognosis.		
7. Causes.	1. Predisposing. —	State of constitution; dose of poison, &c.
	2. Exciting. —	Inoculation — { 1. Canine & Feline genera only. Remarks. 2. Conveyed by salivary secretion. Experiments. Follicle differs. 3. Not communicable by man.
	3. Spontaneous origin. —	no foundation.
8. Nature.	1. Essentially a nervous malady of most intense form. Medulla oblongata & Pneumogastric Nerves.	
	2. Arguments against imbibition by capillaries and absorption by lymphatics.	
	3. Marrochetti's views negatived.	
	4. Mode in which the virus acts.	
9. Treatment.	1. Preventive: —	1. Ligature or cupping glass.
	Prophylactic: —	2. Complete excision: amputation.
		3. Quick cleansing.
	at time of Wound. —	4. Escharotics: Caustic; Acids, Arsenic, Cautery &c. &c.
		5. Suppurants after use of above. Cantharides, &c.
		* Youatt's remarks in favor of lunar caustic.
	2. Latent period: —	1. Excision. Cautery. Cantharides.
		2. Marrochetti's opening and cauterizing pustules.
		3. Mercurials, friction with oil, &c. Arsenic.
		4. Warm and cold baths.
	2. Constitutional —	1. Stimulants: Anti-spasmodics.
		2. Anodynes, narcotics, sedatives.
		3. Tonics &c.
	3. Curative attempts. —	1. Antiphlogistics, Blood-letting; Purgatives, Mercury; Diaphoretics, &c.
		2. Sedatives: Affusion; Aconite; Digitalis; Tobacco; Hydrocyanic Acid, &c.
		3. Anodynes and Narcotics: Opium, Morphia, Belladonna, Stomachium, Conium, Cannabis Indica, Ether, Chloroform, &c.
		4. Stimulants and Antispasmodics: Musk, Camphor, Ammonia, Castor, Assafetida, Turpentine, Valerian, &c.
		5. Electricity and Galvanism.
		6. Tonics: Nux-vomica, Strychnia, Mineral Acids and Salts, Zinc, Iron. Vegetable Tonics: Quinine, Bark, &c.
		7. Diuretics.
		8. Refrigerants.
		9. Counterirritants, along spine.
		10. Injection into venous system.
		11. Wourali.
		12. Tracheotomy.
		* Empirical remedies. Deception, &c.
Conclusion.	Remarks.	Cases detailed, &c.

Tetanus.

1. *Definition.* Powerful, painful spasm of voluntary muscles, &c.
2. *Forms.* — { 1. Acute or Traumatic.
2. Chronic or Idiopathic.

TABLE LX.

Acute or Traumatic Tetanus.

1. *Period of accession.* — { 1. Peculiarity of Constitution.
2. Varies from few hours to many days. Cicatrization generally complete.
2. *Symptoms.* — { 1. Premonitory — { 1. Changes in Wound — { 1. Additional pain.
2. Inflamed, irritable.
2. Uneasy sensation about muscles of jaws & neck. Stiff neck. Sore throat.
3. Febrile symptoms; restlessness.
4. Languor; debility.
2. Specific character of nervous system. — { 1. Stiffness of muscles of jaw, tongue, throat.
2. Spasm of muscles — { 1. Trismus, caution.
2. Opisthotonos.
3. Emprosthotonos: rare. Parry, Hennen, Arctaus.
4. Pleurosthotonos: very rare, only in chronic form.
5. Muscles of deglutition } Invariable.
6. Muscles of respiration }
3. Senses morbidly acute, paroxysms on slightest movement, sound &c. effort of swallowing.
4. Mind. Intellect perfect to the last.
5. Peculiar features. — Tetanic grin.
6. Violent acute pains, — shooting from scrobiculus cordis to spine. Diaphragm.
3. Decline. — { 1. Increase of convulsive paroxysms. Death from Asphyxia.
2. Rapid nervous exhaustion. Last moments tranquil.
3. *Duration.* — 12 hours to 6 or 7 days. Generally 3rd 4th or 5th day.
4. *Morbid anatomy.* — { 1. Wounded part. — Nerve found inflamed; not invariably.
2. General congestion of organs.
3. Nervous system. — { 1. Brain & membranes congested.
2. Medulla & spinal cord injected; increase in density & specific gravity.
5. *Diagnosis.* — see next Table.
6. *Prognosis.* — unfavorable — 7½ deaths to 1 recovery (Traumatic). If not developed till 9th or 10th day favorable. Parry's remarks on the pulse not to be relied upon.
7. *Causes.* — { 1. Predisposing — { 1. Peculiar condition of constitution.
2. Climate or season. Analysis of 165 cases gives the four summer months the fewest and least fatal cases.
3. Age, any period from infancy to old age, 22 months to 73 years, generally in youth, & early adult life.
4. Sex, average 5 males to 1 female.
2. Exciting. — { 1. Any form of surgical lesion.
2. The more severe forms of injuries: compound fractures: burns: injuries to fingers and toes especially.
3. Contusions and sprains without external lesion.
4. Ligature of nerve.
5. After amputation.
6. In obstetric practice.

Tetanus continued.

8. Nature.	<div>1. Essentially a disorder of the excito-motory apparatus.</div> <div>2. Irritation of a peculiar kind affecting that part of nervous system.</div> <div>3. Exaltation of polarity.</div>		
9. Treatment.	1. Local.	<div>1. Amputation or removal.</div> <div>2. Division of nerve.</div> <div>3. Applications. —<div>1. Wourali-Ticunas.</div><div>2. Strychnia.</div><div>3. Belladonna; Opium; Mercury &c.</div><div>4. Ice to spine.</div><div>5. Counterirritants.</div></div> <div>4. Warm and Cold Baths.</div>	
	2. Constitutional.	<div>1. Antiphlogistics reviewed: Bleeding; Mercury; Purgatives.</div> <div>2. Sedatives: Digitalis; Tobacco; Aconite; Hydrocyanic Acid.</div> <div>3. Anodynes & narcotics: Opium; Morphia; Belladonna; Conium. Cannabis Indica; Ether; Chloroform, &c.</div> <div>4. Stimulants & antispasmodics: Musk; Camphor; Ammonia; Assafetida; Turpentine; Wine).</div> <div>5. Electricity & Galvanism.</div> <div>6. Tonics: Nux vomica; Strychnia; Acids; Iron; Zinc. Vegetable tonics; Quinine; Bark.</div> <div>7. Diuretics.</div> <div>8. Refrigerants.</div> <div>9. Injection into venous system.</div> <div>10. Tracheotomy.</div> <div>11. Hygienics and Dietetics.</div>	
Conclusion.	Remarks.	Cases detailed. Morgan's graphic account.	

Conclusion. Remarks. Cases detailed. Morgan's graphic account.

TABLE LXI.

Diagnostic characters of Tetanus and Hydrophobia.

	<u>Tetanus.</u>	<u>Hydrophobia.</u>
1. General spasm.	constant, tonic.	occasional, clonic.
2. Jaw	closed, fixed.	opens & shuts readily.
3. Discharge of saliva	rare.	frequent, viscid.
4. Thirst	rare.	characteristic.
5. Vomiting and gastric pains	scarcely ever.	so general.
6. Fear of fluids.	rare.	pathognomonic.
7. Mind	clear to last.	rabid impulses.
8. Countenance	tetanic	hydrophobic.
9. Cause	cold, wound.	bite of rabid animal.

Wounds of Arteries.

General remarks.

Terms — Escape of Blood — { 1. On surface. — Haemorrhage — { 1. External.
2. Among tissues. — Extravasation. — { 2. Internal.

I. Incised or completely divided vessels.

Anatomy of arterial coats, and physical properties.

Effects. — {	1. Primary: temporary: — {	1. Retraction within sheath: elasticity.	{	1. Coagulation — { 1. Flow: slow, from obstruction. 2. Faintness & syncope induced.	
		2. Contraction of coats, muscularity, pressure of blood.			2. Clot or barrier — { 1. Outside sheath. 2. Within sheath. 3. Within artery itself.
		3. Effusion of Blood.			
2. Secondary: Organic changes reparative: — {	1. Clot within vessel. — {	1. Conical — { 1. Apex: above, opposite 1 st branch. 2. Base: dark, soft.	{	3. Decolorization — { 1. Ruddy, rosy. 2. Yellowish. 3. Colourless.	
		2. Becomes porous, spongy, channelled, cavernous.			4. Fibrinous exudation, lymph, incorporation with clot & gluing it to the walls; imparting firmness. 5. Fibrinization, through nucleated blastema. 6. Vascularization.
		3. Adhesion of coats by living and new material.			
3. Permanent: — {	2. Clot external to vessel. — {	1. Absorption of — { 1. Fibrinous exudation. 2. Fibrine of clot.	{	3. Obliteration & degeneration of vessel into fibrous cord.	
		2. Contraction of arterial coat.			
		3. Obliteration & degeneration of vessel into fibrous cord.			

II. Partially divided or punctured wounded vessels.

General remarks, &c.

Traumatic Aneurism.

1. No retraction.

2. No contraction.

3. Varieties of wounds. — { 1. Vertical. — 1 edge apposed, ready closure.
2. Oblique. — \ edges overlap, &c.
3. Transverse — edges gape; difficult occlusion.
4. Puncture.

4. Effects: Effusion of blood, & secondary & permanent effects as above detailed.

III. Lacerated vessels. General remarks.

1. Retraction — { 1. Sheath, drawn to a point, and has great inter. space filled with coagulum.
greater: — { 2. Arterial coats — { 1. Middle & internal give way first; retract together, remain coherent.
much retracted. — { 2. External less retracted.

2. Contraction greater; puckering.

3. Effusion of blood less. — Detail of Cases.

IV. Contused vessels.

Dangerous. Slough 8 to 10 days. Secondary Haemorrhage. Gun-shot wounds. Cases.

Symptoms of Hæmorrhage.

Bell's graphic description of expiring by successive hæmorrhages.

<i>Effects.</i>	1. Sudden loss.	1. Immediate	1. Surface deadly pale and cold.
			2. Voice gone, inaudible.
	2. Continued repeated losses.	2. Subsequent	3. Syncope.
			4. Convulsion.
			1. Partial recovery from syncope.
			2. Pupils dilated; eye glassy.
			3. Mouth dry and cold; exsanguine; thirst.
			4. Oppressive sighing; tossing about of head.
			5. Faculties retained.
		1. Syncope: Arrest of Hæmorrhage: recovery.	
		2. Again and again renewed, imperfect recovery.	
		3. Delirium; anxiety; jactitation; rigors; Convulsion.	
		4. Loss of control over bladder & rectum.	
		5. Effects of reaction.	1. Rapid, soft, jerking pulse.
			2. Oppressed breathing & headache.
			3. Tinnitus Aurium. Nervous excitement.

Treatment of Hæmorrhage.

Knowledge of Anatomy: confidence, &c.

Literature of the Subject.

1. Local	1. Position and exposure to air, after removal of coagula.	
	2. Cold	1. Repels general circulation from the part.
		2. Increases contraction of vessel.
		3. Favors coagulation.
	3. Pressure.	1. Direct, permanent compress.
		2. Indirect, temporary.
	4. Plugging.	1. When general oozing and tissues dense.
	5. Styptics.	2. Accurate and early.
		3. Steadily maintained.
		4. Mode of applying.
2. Constitutional	6. Cautery.	1. Compression by fingers.
		2. Tourniquet. Modes of applying, &c.
		3. Other various mechanical contrivances.
	7. Torsion.	1. Nares; Vagina. Operation on necrotic bones.
	8. Ligature.	1. Vegetable. Gallic acid, Turpentine, Matico &c.
		2. Mineral. Alum, Iron, Zinc, &c.
		1. Escharotics.
		2. Actual.
		1. Liquid. Hydrochloric & Nitric Acids &c. Solution of strong Caustics
		2. Solid. Nitrate of Silver, action & use. hot iron.
		mode and use.
		mode of applying, results induced. Avoid nerve.
	1. Syncope.	1. Natural. Causes thereof.
		2. Induced by depletion. Question of its applicability considered.
	2. Nauseants.	Antimony, Ipecacuanha, &c.
	3. Opium.	
	4. Styptics internally administered.	1. Vegetable; Gallic Acid, Matico, Turpentine &c.
		2. Mineral; Alum, Lead, &c.
	5. Rest, low diet, kept cool, cold drinks, Ice, &c.	
	6. Transfusion.	modes of performance; cases applicable.

General remarks on wounds of Special Arteries: each important Artery alluded to.

Wounds of Veins.

General remarks.

Travers's paper on the subject: &c.

- | | |
|--------------------------------------|---|
| 1. Completely divided
(truncated) | { 1. Retraction in sheath.
2. Coagulation. — { 1. Within vessel.
2. Without vessel.
3. Organization &c. similar to that in wounds of Arteries. |
| 2. Partially divided | { 1. Wound small — puncture. Clot; plug.
2. Wound vertical { 1. Lips apposed.
2. Cohere by adhesion.
3. Wound oblique \ { 1. Gaping.
or transverse — { 2. Coagulation.
3. Fibrinization.
4. Organization.
5. Absorption of Clot. |
| 3. Dangers. — | { 1. Air in veins.
2. Phlebitis. |
| 4. Treatment. — | { 1. Removal of venous obstruction. Tourniquet after amputation &c. &c.
2. Direct pressure generally sufficient
3. Avoid deligation if possible. |

Hæmorrhagic Diathesis.

Capillary oozing. — Remarks &c.

- | | |
|-----------------|--|
| 1. Causes. — | { 1. Peculiar state of constitution — { 1. Original — hereditary. Cases.
2. Acquired. Delicate, fair, resembles much, Scrofula & Scurvy.
2. Peculiar state of blood in capillaries. { 1. Morbid condition of blood — { 1. Deficient fibrine.
2. Morbid condition of capillaries. — { 2. — " — coagulating power.
3. — " — red globules.
4. Excess of serum.
2. Morbid condition of capillaries. — { 1. Defective middle coat.
2. Non-contractile.
3. Feeble, capacious, readily lacerable. |
| 2. Treatment. — | { 1. Local; topical. — { 1. Styptics.
2. Pressure.
3. Actual cautery.
4. Deligation.
5. Transfusion.
2. Constitutional: — { 1. Avoid fluids and stimulants.
Increase coagulating powers. { 2. Styptics: Alum, Gallic acid, Lead, &c.
3. Opium; Chlorate of Potash; Citric acid.
4. Tonics.
5. Hydragogues. |

Cases detailed &c.

Wounds of Nerves & Tendons.

Symptoms.

Repair.

Treatment.

Wounds of the Joints, &c.

Wounds of special regions.

Head and Face.

I. Scalp *Its anatomy &c.*

1. *Incised Wounds* { Hemorrhage. Treatment: Use of sutures considered.
Removal of scalp tumours.
 2. *Lacerated* — { 1. Where scalp in situ. Treatment.
2. Where stripped & separated from Cranium. Treatment.
3. Where Cranium laid bare, is exfoliation absolute? Pott. &c.
 3. *Punctured* — { 1. Excite Erysipelatous inflammation. Predisposed constitution.
2. Extensive suppuration under Occipito-frontalis tendon.
3. Propriety of incision.
 4. *Gun-shot* — { Varieties affecting scalp: Balls striking obliquely: Convex cranium.
 5. *Contusions* — { Extravasation of blood: peculiar appearances. Soft depressed centre
simulating depressed bone. Diagnosis. Treatment.
- Cases detailed illustrating above wounds.*

II. Face. *Including Incised, Lacerated, Punctured & Gun-shot Wounds, & Contusions.*

1. *Eye brows* — { Wounds generally attended with Ecchymosis, extensive. Suppuration,
vicinity to orbit. Injury to Supra-orbital nerve, Amaurosis, Neuralgia.
2. *Eyelids* — { 1. Tarsal cartilage vertically wounded — Ectropion, — Epiphora.
2. Near canthus, Fistula lachrymalis.
3. *Eye* — { 3. Involving cellular tissue of orbit: inflammation; suppuration;
vicinity of brain. Fatal cases detailed.
4. Accurate adjustment of edges of wound by sutures.
4. *Nose* — { referred to in the Special Lectures on Ophthalmic Surgery.
1. Wounds of cartilage, vertical; deformity. Accurate adaptation requisite.
2. Vicinity of roof of nose with brain.
5. *Ear* — { 3. Gun-shot wounds, Hennen's case.
4. Foreign bodies in nose; Cases detailed. Mode of extraction.
5. Blows followed by hæmorrhage.
6. *Lips & Cheek* — { 1. Wounds attended with disfigurement. Vascularity. Cases cited.
2. Ear shot away.
3. Foreign bodies in ear: Modes of removal.
7. *Mouth & Tongue* — { 4. Contusion over Mastoidal cells: suppuration, caries.
Deformity. Hemorrhage.
Wound of facial Nerve. Wound of Parotid duct and gland.
7. *Mouth & Tongue* — { Hemorrhage, primary and secondary.
Cases cited of wounds of Tongue. Gun-shot wounds.

Wounds & Contusions of the Neck.

Importance of Anatomy. Variety and vital nature of contained structures.

I. Wounds of anterior region. Median line less dangerous than at sides.

1. Incised Wounds. —
- 1. Upper third — 1. Above os hyoides — { 1. Muscles.
2. Vessels.
3. Tongue, its base.
4. Sub-maxillary gland, &c.
 - 2. Middle third. — { 2. Between os hyoides and thyroid cartilage — { 1. Epiglottis.
3. Through thyroid cartilage, vocal cords opposite pœnum. } Pharynx.
4. At crico-thyroid membrane & cricoid cartilage. } Oesophagus.
 - 3. Lower third — 5. Trachea. Oesophagus.
 - 4. Dangers. — { 1. Length of wound.
2. Parts involved. — { 1. Large vessels: Hæmorrhage.
2. Important nerves.
3. Blood in Trachea.
 - 5. Treatment. — { 1. Position. Ligature of vessels
2. On use of sutures.
3. Administration of nutrition. Use of Stimuli &c.
2. Punctured Wounds —
- 1. Vessels. — Extravasation.
 - 2. Nerves. — Cases detailed.
 - 3. Larynx or Trachea { 1. Subcutaneous emphysema.
2. Blood drawn into Trachea.
 - 4. Subsequent inflammation of cellular tissue. highly dangerous. Suppuration.
3. Lacerated Wounds. Cases detailed. Carotid torn, without hæmorrhage.
4. Gun-shot Wounds. — { Highly important. Secondary hæmorrhage so fatal.
Interesting cases detailed. Larrey's case of Epiglottis shot away. &c.

II. Wounds of posterior region, of little importance.

Caution. Space between Occiput & Atlas, and Atlas & Dentata, — large, & Medulla easily reached by instrument, causing immediate death.
Petit's case alluded to.

- General remarks.
1. Garrotte.
2. Strangulation.
3. Hanging. — { 1. Suicidal
2. Homicidal.
4. Effects. — { 1. Asphyxia. No air entering lungs from compress. of Trachea.
2. Apoplexy Cerebral congestion from obstruction of venous return.
5. Treatment. — { 1. Removal of ligature.
2. Artificial respiration.
3. Relieve venous system.
&c. &c. &c.
- Contusions.
of the Neck.

Wounds & Injuries of the Chest.

General remarks on Anatomy, during health and disease. — &c.

1. <i>Parietes</i> —	<ul style="list-style-type: none"> 1. Incised — 2. Punctured — 3. Lacerated — 4. Gun-shot — 	Remarks on effects and consequences, with treatment and illustrative cases.
2. <i>Cavity</i> —	<ul style="list-style-type: none"> 1. <i>Viscera uninjured</i> — 2. <i>Viscera injured</i> — 	<ul style="list-style-type: none"> 1. Simple penetration. — <i>Diagnosis &c.</i> 2. Wound of intercostal and internal mammary vessels. — <ul style="list-style-type: none"> 1. External hæmorrhage. — <i>Treatment.</i> 2. Internal hæmorrhage. — <ul style="list-style-type: none"> 1. Local signs. 2. Constitutional symptoms. 3. Treatment. — <ul style="list-style-type: none"> 1. Arrest hæmorrhage. 2. Evacuate blood. 3. Emphysema, without injury of lung, explained. — <i>Treatment.</i> 4. Foreign bodies in chest. — <i>Cases.</i> 5. Protrusion of Lung. — <ul style="list-style-type: none"> 1. Recent. Healthy. — <i>Reduction.</i> 2. Irreducible; gangrenous — <ul style="list-style-type: none"> 1. Excision. 2. Ligature. <ul style="list-style-type: none"> 1. <i>Lungs</i> — <ul style="list-style-type: none"> 1. Symptoms. — <ul style="list-style-type: none"> 1. Blood and air from wound. 2. Cough up florid frothy blood. 3. Irritation of larynx. 4. Dyspnoea, &c. 2. Effects. — <ul style="list-style-type: none"> 1. Immediate. — <ul style="list-style-type: none"> 1. Hæmorrhage. 2. Emphysema. 3. Pneumo-thorax. 2. Consecutive. — <ul style="list-style-type: none"> 1. Pleurisy. 2. Pneumonia. 3. Empyema. 3. Treatment. 2. Heart & pericardium. — <i>Symptoms &c. Cases detailed.</i> 3. Large vessels &c.

* Special remarks on Gun-shot wounds of the Chest.

Rare cases of Wounds of Abdominal viscera which have passed into chest, through an opening in the Diaphragm, from malformation or otherwise.

Contusions of Chest —

- 1. Without rupture of contents, Pleurisy. Pneumonia &c.
- 2. With rupture of organs. Lung, &c. — *Cases.*

Wounds & Injuries of the Abdomen.

General remarks on Anatomy. Regions &c.

1. <i>Parietes</i> —	1. Wounds. —	<ol style="list-style-type: none"> 1. Incised. 2. Punctured. 3. Lacerated. 4. Gun-shot. 	See following table.
	2. Contusions.		
2. <i>Cavity and contents</i> —	1. Contents not injured.	<ol style="list-style-type: none"> 1. Wounds penetrating. 2. — with protruded viscera. 3. Peritonitis. 	<ol style="list-style-type: none"> 1. Viscera protruded. Treatment &c. <ol style="list-style-type: none"> 1. Sutures. 2. Artificial Anus. 2. Stomach. 3. Intestines — <ol style="list-style-type: none"> 1. Small. 2. Large. * Bloos on Hernial-sac. 4. Gall Bladder. 5. Ureter and Urinary Bladder. 6. Blood vessels.
	2. Contents injured.	<ol style="list-style-type: none"> 1. Hollow — <ol style="list-style-type: none"> 1. Liver. 2. Spleen. 3. Kidneys. 4. Uterus. 5. Omentum, Pancreas &c. 6. Diaphragm. 2. Solid. 	

Wounds & Injuries of the Abdominal Parietes.

1. <i>Wounds</i> —	1. Incised —	<ol style="list-style-type: none"> 1. In the different regions. 2. Whether superficial or deep; extensive, &c. 3. Vertical, oblique or transverse. * Mode of Treatment. Cases. Haemorrhage &c.
	2. Punctured.	Inflammation; suppuration diffused; Tendinous expansions; sheath of rectus muscle; proximity of Peritoneum. Cases detailed.
	3. Lacerated.	Extensive; cause death. Cases detailed.
	4. Gun-shot.	General remarks. Recital of Cases.
2. <i>Contusions</i> —		<ol style="list-style-type: none"> 1. Simple: bruise. 2. With extravasation of blood; superficial; deep vessels. Cases. 3. Ruptured muscles; Recti lacerated. Cases. 4. Disorganization of tissues. Cannon ball. Loins. Cases. 5. Followed by inflammation & suppuration in the different regions. Cases detailed.

* Contusions attended with sudden death. Epigastrium. Solar Plexus.
Cases — Sir A. Cooper, Morgagni, &c.

Peritonitis.

General remarks on Traumatic and Idiopathic forms.

- | | |
|--------------|---|
| 1. Symptoms. | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <div style="display: flex; align-items: center;"> <div style="width: 150px;">1. Local.</div> <div style="margin-left: 10px;"> <ol style="list-style-type: none"> 1. Pain, acute, cutting; at seat and extending gradually, aggravated by pressure. 2. Heat, pungent, burning. 3. Tension & Tympanitis: Abdomen hard & rigid. </div> </div> </div> </div> |
| | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <div style="display: flex; align-items: center;"> <div style="width: 150px;">2. Constitutional.</div> <div style="margin-left: 10px;"> <ol style="list-style-type: none"> 1. Digestion. <div style="display: flex; align-items: center; margin-left: 10px;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <ol style="list-style-type: none"> 1. Nausea, vomiting. <div style="display: flex; align-items: center; margin-left: 10px;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <ol style="list-style-type: none"> 1. Contents of Stomach. 2. Fluids swallowed. 3. Colourless, greenish fluid. </div> </div> 2. Thirst; loss of appetite. 3. Constipation. </div> </div> 2. Respiration, thoracic. 3. Pulse, frequent, small, wiry, hard, incompressible. 4. Skin hot, dry. Urine thick, scanty. 5. Position, on back, with legs drawn up. 6. Countenance, characteristic anxiety, haggard, shrunken, pale. </div> </div> </div> </div> |
2. Diagnosis. Prognosis.
3. Pathological appearances.
- | | |
|---------------|--|
| 4. Treatment. | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <div style="display: flex; align-items: center;"> <div style="width: 150px;">1. Local.</div> <div style="margin-left: 10px;"> <ol style="list-style-type: none"> 1. Depletion. Leeches. 2. Fomentations. 3. Mercurials. 4. Counter-irritants; &c. </div> </div> </div> </div> |
| | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <div style="display: flex; align-items: center;"> <div style="width: 150px;">2. Constitutional.</div> <div style="margin-left: 10px;"> <ol style="list-style-type: none"> 1. Depletion. 2. Opium. 3. Calomel. 4. Antiphlogistics. 5. Ice. 6. Diet. </div> </div> </div> </div> |

TABLE LXXIII.

Penetrating Wounds of Abdomen without injury to Viscera, &c.

- | | |
|--------------------------------|---|
| 1. Symptoms—
negative. | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <ol style="list-style-type: none"> 1. No Hæmorrhage. 2. No protracted collapse. 3. No appearance at wound of bowel, omentum, faces, urine, bile or blood. 4. No excruciating agony. 5. No vomiting of blood, nor passage of blood by stool. 6. No Peritonitis. </div> </div> |
| 2. Inferences—
to be drawn. | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <ol style="list-style-type: none"> 1. Size of wound compared with that of the instrument. 2. Situation and position of person when wounded. 3. Direction and region of penetration. 4. Kind of instrument used, & its inspection. </div> </div> <p>* Probing and introducing finger absolutely unwarrantable.</p> |
| 3. Treatment. | <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div> <ol style="list-style-type: none"> 1. Sutures. Bandage. 2. Position. Perfect rest. 3. Temperature. 4. Ice to moisten mouth. 5. Opium. </div> </div> <p>* Cases of Incised, Punctured, Lacerated & Gun-shot Wounds referred to.</p> |
| 4. Secondary results. | <p>Peritonitis. Can air get into the Abdomen? If so, can it cause Peritonitis?</p> |

Penetrating Wounds of Abdomen, with protruded, uninjured Viscera.

Viscera liable to protrusion in the several regions.

- | | | | | | |
|--------------------------------|-------------------------------|--|---|---|---|
| 1. Omentum. | { | 1. Recent, healthy, no adhesion, — Relax Muscles; Careful reduction. | | | |
| | | 2. Irreducible. — { | Enlarge parietal opening, avoid peritoneum; or excise, or leave alone. | | |
| | | 1. Size of protrusion | | | |
| | | 2. Congestion of vessels. | | | |
| | | 3. Narrow aperture. | | | |
| | | 3. Strangulated and inflamed. — Excision or left alone. | | | |
| 4. Gangrenous. | { | 1. Excision avoids tedious process; danger Haemorrhage; Caution. | | | |
| | | 2. Ligature dangerous; artificial repetition of same process. | | | |
| | | 3. Leave alone; most judicious. | | | |
| | | * Cases detailed. | | | |
| 2. Intestines. | { | 1. Reducible. — Clean; relax muscles; return. Mode of using Taxis. | | | |
| | | 2. Irreducible — { | 1. Causes — Increased size; distension; adhesion; Omental complication. | | |
| | | | | 2. Treatment — Taxis; Enlarging opening; Letting out air condemned. | |
| | | 3. Strangulated. — { | 1. Condition — { | 1. Simple congestion; claret-Chocolate colour. | |
| | | | | | 2. Active inflammation; florid red; serous effus.; thickened coats. |
| | | | | | 3. Gangrene; loss of polish; green spots; slough. |
| 2. Treatment. — { | 1. Relieve stricture opening. | | | | |
| 2. Return to first conditions. | | | | | |
| | | 3. Treatment where gangrenous. | | | |
| | | * Cases referred to. | | | |
| 3. Liver. | Remarks. | Cases detailed. | Rare. | | |
| 4. Spleen. | Rare. | Cases described. | | | |
| 5. Bladder. | Cases. | Treatment: — Catheterism; Dilate strictured opening. | | | |

Penetrating Wounds of Abdomen, with protruded, injured Viscera.

General remarks, more especially applicable to the Intestines.

- | | | | |
|---------------|--------------------------|---|---------------------------------|
| 1. Punctured | { | 1. Everted mucous membrane; Button; adaptation of surfaces; No escape. | |
| | | 2. Treatment. Return, with or without ligature. If ligatured, cut off ends. What becomes of it? | |
| 2. Incised | { | 1. Two thirds of calibre — { | 1. Gaping — everted — effusion. |
| | | | |
| | | 2. Entirely cut across. — { | 2. Cut ligature close to knot. |
| | | | |
| | | 4. Return, and close parietal wound. | |
| 3. Lacerated. | Highly dangerous. | Remarks. | Treatment. |
| 4. Gun-Shot. | Edges torn; like a rent. | Appearances. | Treatment. |

Cases illustrating the above in each separate form; including protruded wounded Stomach, intestines, & other viscera.

Wounds & Injuries of the Hollow Viscera of the Abdomen without protrusion.

*General remarks on the term cavity of the Abdomen. Bell's excellent observations.
General survey of effects of penetrating wounds of viscera.*

- | | | |
|--|-------------------|---|
| 1. Primary effects -
<i>Effusion of contents.</i> | 1. Regulated by - | { 1. Size of Wound. - { 1. Whether incised, punctured, lacerated or Gun-shot.
{ 2. Whether vertical or transverse.
2. State of emptiness of viscus
3. Quietude afterwards.
4. Small or large intestine. |
| | 2. Conditions. - | { 1. Circumscribed.
{ 2. Diffused |
| | 3. Symptoms. - | { 1. Collapse; rigors; syncope.
{ 2. Intense pain, unremitting, radiating from wound.
{ 3. Sudden tympanitis.
{ 4. Great anxiety.
{ 5. Rigidity and hardness of abdominal muscles. |

Travers, J. Bell, Petit &c on Effusions into the Peritoneum.

2. Secondary effects. — *Peritonitis and its results.*

- | | | |
|-------------------|----------------|--|
| 3. Terminations - | 1. Death. — | { 1. Primarily: during collapsed stage.
{ 2. Secondarily: from Peritonitis and its effects. |
| | 2. Recovery. — | { 1. Adhesion to parietes or neighbouring organ & cicatrization.
{ 2. Artificial anus. { 1. Temporary.
{ 2. Permanent. |

- | | | |
|-----------------|----------------------------|--|
| 4. Treatment. — | 1. In early stage — | { 1. As regards the wound — to be closed or not — opinions. &c.
{ 2. Utmost quietude.
{ 3. Position.
{ 4. No fluids nor solids.
{ 5. Ice in moderation if excessive thirst.
{ 6. Opium in powder.
{ 7. Enemata if requisite. |
| | 2. In inflammatory stage — | { 1. Depletion — local & general — considered.
{ 2. Opium.
{ 3. Calomel.
{ 4. Antiphlogistics: &c. |

Wounds & Injuries of the Stomach.

Region occupied by Stomach. Its coats and vessels. Its relations.

- I. Wounds.** — {
- 1. Without peritoneal effusion. {
 - 1. Contents escaping at external wound {
 - 1. If organ empty - pure blood.
 - 2. The fluids & Solids just taken.
 - 3. Chyme - if digestion commenced.
 - 2. Immediate vomiting of contents & blood.
 - 2 With effusion into peritoneum. Effects, Termination & Treatment already detailed. TABLE LXXVIII.
Cases of Incised, Lacerated & Gun-shot Wounds detailed. Extraordinary recoveries.
- 2. Contusions.** — {
- 1. Gastritis - Acute.
 - 2. Gastritis - Chronic. Slow inflammation: softening: ulceration: adhesion to parietes: suppuration: abscess: fistulous opening.
Case detailed.
 - 3 Rupture. — {
 - 1. Incomplete laceration of coats, either peritoneal or mucous, - ascertained only after death.
 - 2. Complete. Effusion of contents. See TABLE LXXVIII.
* Caution. Not to be mistaken for Gastric solution.
Cases detailed.
- 3. Foreign bodies in the stomach.** {
- 1. Varieties of Foreign bodies. {
 - 1. Pointed bodies. Needles - Pins.
 - 2. Rounded. Stones. Balls.
 - 3. Elongated & cutting bodies. Knives. razors. scissors. forks. &c.
 - 2. Effects. — {
 - 1. May be retained without inconvenience.
 - 2. Symptoms {
 - 1. Sense of weight and fullness.
 - 2. Vomiting and pain in Epigastrium.
 - 3. Hematemesis.
 - 4. Discoloration of feces from partial solution of body.
 - 5. Attacks of indigestion.
 - 6. Detection by manipulation.
 - 3. Results. — {
 - 1. May escape into the intestine and pass with feces.
 - 2. May remain in situ and patient die from other causes.
 - 3. May remain and cause Gastritis, impaired health, and death from exhaustion.
 - 4. May cause inflammation & ulceration of Stomach, into Peritoneum, & death.
 - 5. May cause adhesion of Stomach to parietes, Ulceration, Fistulous open. &c.
 - 6. May be removed by Gastrotomy.
- Cases referred to:
- Gastrotomy — been successfully performed. — Mode of operation.
Its propriety considered.

Wounds & Injuries of the Intestines.

Regions occupied by the small and large intestines

General remarks.

1. *Wounds.* — {
 1. No escape. Remarks &c. Blood passed by stool. Desire for defecation, when Colon wounded.
 2. Escape of contents externally: favorable. Temporary Artificial Anus. Varieties of effused matters.
 3. Escape of contents into Peritoneum. See preceding Table on Effusions. TABLE LXXVIII.
 In Gun-shot Wounds, may not be immediate, but after some days; on Slough separating.
 Cases of Incised, Punctured, Lacerated & Gun-shot Wounds related.
 John Hunter's excellent Cases.
2. *Contusions.* — {
 1. Enteritis. — Acute and Chronic.
 Case of thickening & gradual contraction of Canal following a blow; recited
 2. Rupture. — {
 1. Partial.
 2. Complete. Effusion, & generally fatal. See TABLE LXXVIII.
 Cases detailed.
 3. Blows on Hernial-sac. {
 1. Inflammation of coats.
 2. Destruction of vitality. Subsequent sloughing, &c.
 3 Rupture of gut.
 Cases of each successively dwelt upon.
3. *Foreign bodies in the Intestines.* {
 1. Small Intestines. Cases.
 2. Cæcum. Cases and remarks.
 3. Large Intestines.
 4. Rectum.
 Symptoms, Diagnosis, Prognosis & Treatment of each; with Cases.
4. *Operation of opening Intestines.* {
 Propriety of such proceeding.
 1. Small Intestines {
 1. Over seat of foreign body.
 2. At Linea alba.
 2. Large Intestines {
 1. In groin. {
 1. Callisen's operation.
 2. Ammusat's operation.
 2. In loin. — {
 The merits of each considered, and the
 modes of performing each detailed.

Wounds & Injuries of the Gall Bladder.

Situation, Anatomical relations &c.

1. *Wounds.* — {
 Rare, small size and deep situation.
 Generally attended with effusion: ready extravasation of bile. Symptoms most
 intense. See Table of Effusions - LXXVIII.
 Cases detailed: Sabatier, Dr. Stewart, Sir A. Cooper.
 Fluttier's case of leaden ball found in Gall. bladder.
2. *Contusions.* — {
 Rupture, unfrequent: generally fatal. Hoffman relates two Cases.
 W. Fryer's notable case - questionable.
 Case of Rupture of the Ductus communis chododochus in a boy admitted
 into Guy's Hospital, related.

Wounds & Injuries of the Urinary Bladder.

Situation and Anatomical relations.

1. Wounds. — { 1. Without involving the Peritoneum. — { 1. Escape of urine externally.
2. Infiltration of urine into cellular tissue: inflammation; suppuration; Abscesses, &c.
Examples — Supra. and Sub-pubic Lithotomy.
2. Involving the Peritoneum. — { 1. Primary. — { 1. Symptoms of effusion into cavity. See TABLE LXXVIII.
2. Flow of urine through wound.
3. Liquid & clotted blood passed by Urethra.
4. Urgent & painful desire for micturition.
2. Secondary. — { 1. Peritonitis.
2. Extravasation into cellular tissue.
- Cases of Incised, Punctured, Lacerated & Gun-shot Wounds detailed.
Cases where bullets have lodged in bladder for considerable period.
2. Contusions. — { 1. Cystitis.
2. Rupture. — { 1. Without involving peritoneum.
2. Involving the peritoneum.
Cases thereof related.
- General remarks on Diagnosis, Prognosis, Treatment, &c.

TABLE LXXXIII.

Wounds & Injuries of the Ureter.

Situation and Anatomical relations.

1. Wounds. — { Exceedingly rare.
1. Without involving the Peritoneum, from behind. — Case of the Archbishop of Paris.
2. Involving the Peritoneum. Hennen's Case.
2. Contusions. — Rupture. — Rare. Stanley's two Cases.

TABLE LXXXIV.

Wounds & Injuries of the Blood-vessels of the Abdomen.

*Situation & anatomical relations of the several Blood-vessels, &c: Almost everywhere
Organs: Omenta: Mesenteries: &c.*

1. Into cellular tissue external to the Peritoneum. Extravasation.
2. Into Peritoneal Cysts. — { 1. In small quantities. Circumscribed.
2. In large quantities. Diffused: Symptoms of Hemorrhage.
- * Petit's excellent monograph on effusions. Travers & others.
- Effusion of Blood. — { 3. Symptoms. — { 1. Syncope, pale, blanched surface & lips.
2. Continual restlessness & anxiety: great thirst.
3. Cold clammy sweats.
4. Pulse intermittent, rapid, fluttering.
5. Belly swollen & soft.
6. Convulsive twitching.
4. Results. — { 1. Death from Hemorrhage — primary.
2. Peritonitis & its results.
3. Absorption & recovery.
5. Treatment. — Similar to that expressed in foregoing Table of Effusions.
- Cases detailed of wounded & ruptured Blood-vessels: their Diagnosis & Prognosis, &c.

Wounds & Injuries of the Spleen.

- Situation.* Anatomical relations. Structure chiefly blood vessels. &c.
- Rare.* More readily injured from the side or back.
1. *Wounds.* — { 1. Symptoms. — Those of effusion of blood into peritoneal cavity; which see TAB. LXXXIV.
 2. Effects & Treatment also the same.
 3. Diagnosis negative. { 1. Symptoms of Hemorrhage.
 2. Absence of indications of injury to other organs.
 3. Situation of wound.
Cases related: Richter, Larrey, Hennen, Guthrie, Sir A. Cooper, &c.
2. *Contusions.* — { 1. Splenitis. — Symptoms &c.
 2. Rupture. — Symptoms, Effects & Treatment — those of effusion of blood into peritoneal cavity. See TABLE LXXXIV.
Cases very numerous, several related; extremely fatal.

TABLE LXXXVIII.

Wounds & Injuries of the Uterus.

- Situation.* Anatomical relations. Structure, highly vascular. &c.
- Exceedingly rare; reasons why.*
1. *Wounds.* — { 1. Unimpregnated Uterus { Symptoms obscure { 1. Hypogastric pains &c.
 2. Flow of blood by vagina.
 3. Tension. Tenesmus.
 4. Dysuria.
 5. Effusion of blood into peritoneum.
 2. Impregnated Uterus { 1. Varieties. — { 1. Wounds from without: Accident, Operation.
 2. — — — within: Attempts at abortion, &c.
 2. Effects. — { 1. Primary. — { 1. Effusion of blood into Peritoneum. See TABLE LXXXIV.
 2. Escape of Fetus into Abdomen if large wound.
 2. Secondary. { 1. Peritonitis.
 2. Inflammation of Uterus.
 3. Abortion.
Cases of Incised, (Caesarean section), Punctured, Lacerated & Gun-shot Wounds.
Remarks on Prognosis and Treatment.
2. *Contusions.* — { Cannot affect the unimpregnated uterus.
 1. Inflammation of uterus: Symptoms & Treatment. { 1. During early months
 2. During full period.
 2. Rupture. — { 1. During early months { 1. Abortion and discharge of blood from vagina.
 2. Escape of Fetus into Abdomen.
 3. Effects & symptoms of effusion of blood into Abdomen.
 4. Inflammation, &c.
 2. At full period { 1. Sensation of something giving way.
 2. Sudden acute pain, — not labour pains.
 3. Effusion of blood into Peritoneum. See TABLE LXXXIV.
 4. Expulsion of { 1. Per vias naturales.
 Fetus. { 2. Through rent into Peritoneum.
 5. Peritonitis.
 6. Treatment. { 1. As in effusion of blood.
 2. Delivery per vias naturales.
 3. Gastrotomy.
Remarks. Cases detailed.

Wounds & Injuries of Ovarian Cysts.

Pathological Anatomy.

1. Wounds. — { Punctured. Paracentesis. An example.
General remarks.
2. Contusions. — { 1. Inflammation & suppuration of Cyst.
2. Rupture. — { 1. Fatal. Symptoms & effects of effusion into Peritoneum.
2. Recovery. Cases detailed. See TABLE LXXVIII.
3. Ovariectomy. — { Propriety of its performance.
Diagnosis: Adhesion or not.
Major & minor operation: latter preferred: mode of performing it.
After Treatment.

Wounds & Injuries of the Omenta, Pancreas, &c.

Require little comment. Effects, Symptoms and Treatment, those of effusion of blood into the Peritoneum. Cases detailed.

Wounds & Injuries of the Diaphragm.

Situation and Anatomical relations. Structure.

1. Wounds. — { 1. Varieties. — { 1. Penetrating wound of Muscle without complication.
2. Wound thereof with Hernia of Stomach or Viscera. — { 1. Incarcerated.
2. Strangulated. Symptoms of Hernia. Guthrie's remarks.
3. Wound thereof with wound of other viscera.
 2. Symptoms, — { 1. Acute pain and great anxiety.
obscure. — { 2. Oppression about the præcordia & difficult respiration.
3. Hiccough &c. Risus sardonicus according to Devergie.
- Cases of Punctured, Incised & Gun-shot Wounds described.
Ballinghall's cases: Paré, Barth, Morgagni, Læsecke, Guthrie, Hennen &c.
2. Rupture. — { Varieties & symptoms same as in wounds.
Often followed by Hernia through the rent; not to be mistaken for congenital.
Cases related. Devergie: Morgan & others.

FASCICULUS III.

Ligature of Arteries and Amputation?

TABLE XCI.

Ligature of Arteries.

General remarks. ————— *Instruments requisite.*

- | | |
|-------------------------|---|
| 1. Lay bare the artery. | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <ol style="list-style-type: none"> 1. Ascertain position of artery. — 2. Do not stretch the skin, else relations disturbed. 3. Incision. — 4. Artery exposed. Flow known; its immediate relations. </div> <div style="width: 50%;"> <ol style="list-style-type: none"> 1. Anatomical knowledge. 2. Pulsation of vessel. 1. If superficial — to be parallel to vessel, & on arriving at fascia, cut on one side of vessel. 2. If deep seated — to be somewhat oblique, so as to cross vessel. Intercices of muscles to be ascertained & separated.. not cut thro' muscles. </div> </div> |
| | <p><i>Rules to be observed.</i> — always have certain objects in view. —</p> <ol style="list-style-type: none"> 1. Divide skin and cellular tissue. 2. Divide carefully the exposed aponeurosis. 3. Look for <u>guide</u> to the artery. |
| 2. Isolate the artery. | <ol style="list-style-type: none"> 1. Open sheath as little as possible. Modes of performing. 2. Take care of the accompanying veins and nerves: Not to be included in ligature. 3. Pass aneurism needle under the vessel. 4. Ascertain pulsation, when artery on the needle. |
| 3. Apply ligature. | <ol style="list-style-type: none"> 1. Choice of ligature: ascertain its strength. 2. Introduce it into needle either before or after passing it under artery. 3. Ligature to be tied perpendicularly and not obliquely. |
| 4. After treatment. | <ol style="list-style-type: none"> 1. Maintain temperature of the part. 2. Relax muscles, and place in position to favor easy circulation. |

Ligature of the Radial Artery.

May be tied in three places.

Cases requiring.

- | | |
|------------------------------|--|
| 1. Dorsal surface of Carpus. | { 1. Separate thumb from index finger.
2. Guide: depression between extensors of thumb.
3. Incision in direction of extensor tendons over that space. |
| 2. Lower third of Fore-arm. | { 1. Anatomy: Superficial; only skin & fascia covering it. Two veins. Nerve external.
2. Guide: Outer border of tendon of Flexor Carpi Radialis.
3. Incision: Vertical; $1\frac{1}{2}$ inches long; $\frac{1}{2}$ an inch above wrist, external to the guide.
1. Skin. 2. Fascia. |
| 3. Upper third of Fore-arm. | { 1. Anatomy: Course indicated. Deep track between muscles.
2. Guide: Internal border of Supinator Radii Longus.
{ Vertical incision $2\frac{1}{2}$ inches long, $\frac{1}{2}$ inch below & 6 lines external to middle of bend of elbow.
1. Skin & cellular tissue. Avoid median Vein.
3. Operation — { 2. Aponeurosis: exposing inner edge of Supinator longus Muscle.
3. Raise & draw outwards internal border of muscle and divide fibrous layer.
4. If in difficulty, seek radial nerve outside, and follow tissues from this towards median line. |

Ligature of the Ulnar Artery.

Cases requiring.

May be tied in four places.

Course of Artery indicated.

- | | |
|--------------------------------|--|
| 1. At the wrist. | { 1. Anatomy: — Much fat in pellets, nerve internal, vein on each side.
2. Guide: — External to radial border of Pisiform bone.
3. Operation: — { Incision: $1\frac{1}{2}$ inches.
1. Skin and adipose tissue remove part of fat.
2. Palmaris brevis. divide. |
| 2. Inferior third of Fore-arm. | { 1. Anatomy: — Lies on deep flexor tendons; its coverings and relations.
2. Guide: — External border of Flexor Carpi Ulnaris.
{ Incision: 1 to $1\frac{1}{2}$ inches long; $\frac{1}{2}$ inch above wrist.
1. Skin, and expose Fascia.
3. Operation: — { 2. Fascia, and expose external border of Flexor Carpi Ulnaris.
3. Draw tendon internally, divide second aponeurosis, expose Artery.
4. Pass needle from within outwards, Two Veins. Nerve internal. |
| 3. Middle third of Fore-arm. | { 1. Anatomy: — Coverings and relations. Line indicating course.
2. Guide: — Interstice between Flexor Sublimis and Flexor Carpi Ulnaris.
{ Incision: 3 inches in course of line indicated.
1. Skin, and lay bare aponeurosis.
3. Operation: — { 2. Look for Aponeurotic line of interspace, — how known.
3. Separate interstice, commencing from below.
4. Draw Flexor Sublimis outwards, and open deep aponeurosis.
5. If artery missed, draw Flexor Carpi Ulnaris inwards and look for Ulnar Nerve; Artery on same plane but some lines externally.
6. Flex hand and bend Fore-arm in passing the needle under. |
| 4. Upper third of Fore-arm. | { Operation generally rejected on account of its difficulties. |

Ligature of the Brachial Artery.

Cases requiring: May be tied in any part of its course.

Course of Artery indicated: runs nearly parallel to inner border of biceps, &c.

- | | | |
|-------------------------------|---|---|
| 1. At the bend of the Elbow. | 1. Anatomy: — | Line indicating course; Median Basilic vein indicates its position. |
| | 2. Guide: — | Inner edge of Biceps tendon; render it prominent. |
| | Incision: 2 inches long, internal to Median Basilic vein. | |
| | 1. Skin, exposing vein, which draw away. | |
| | 2. Aponeurosis & bicipital fascia, exposing tendon of biceps. | |
| | 3. Artery with two veins: Median nerve 3 to 4 lines internal. | |
| 2 & 3. Middle & upper thirds. | 4. Flex arm to isolate, and pass needle from within outwards. | |
| | 1. Anatomy: — | Relation to the muscles & median nerve. Line indicating course. |
| | 2. Guides: — | Inner border of Biceps for lower two thirds. |
| | | Inner border of Coraco-brachialis for upper third. |
| | Incision: 2 to 2½ inches. | |
| | 1. Skin, exposing fascia & avoiding Basilic vein. | |
| | 3. Operation: — | 2. Aponeurosis exposing inner border of muscle. |
| | | 3. Median nerve to be drawn outwards; Artery underneath. |

Ligature of the Axillary Artery.

Cases requiring: May be tied in two places. Line indicating its course.

Position of the Patient.

- | | | | |
|---|---|--|--|
| 1. Lower third, at the axilla. | 1. Anatomy — | Relations in extended position of arm; Course indicated. | |
| | 2. Guides: — | 1 st the inner border of Coraco-brachialis. 2 nd Median Nerve. | |
| | | Incision: 2 to 2½ inches in course indicated, 6 to 8 lines from anterior border of axilla. | |
| | 3. Operation: — | 1. Skin, exposing fascia. | |
| 2. Upper third. | | 2. Aponeurosis, exposing inner edge of Coraco-brachialis. | |
| | | 3. Divide sheath of muscle up to its apex, exposing Median Nerve. | |
| | | 4. Relax arm, keep back axillary vein, then the nerves, and internal and beneath Median nerve is the Artery. | |
| 1. Anatomy: — | Space between Clavicle and Pectoralis minor, covered by Pectoralis major. | | |
| 2. Guide: — | Subclavian vein lies to inner side and over the Artery. | | |
| | Incision: 3 to 4 inches parallel to, and a few lines below, Clavicle. | | |
| 3. Operation: — | 1. Skin and Platysma, avoiding Cephalic vein. | | |
| | 2. Clavicular origin of Pectoralis major. | | |
| | 3. Posterior sheath of the muscle, often resembling Aponeurosis. | | |
| | 4. Separate loose cellular tissue, exposing vessels & nerves. | | |
| | 5. Position of Artery: — | | |
| | 1. Internally, Axillary vein, overlapping artery; | | |
| | 2. Little behind & outside vein, — the artery; | | |
| | 3. Externally and posteriorly — Brachial Plexus. | | |
| 6. Carefully draw vein inwards, and pass needle from within outwards. | | | |

Ligature of the Subclavian Artery.

Cases requiring.

May be tied in three places.

- | | | | |
|--|-----------------|--|---|
| 1. <i>External third, outside the Scaleni.</i> | 1. Anatomy — | Double triangle. — | { 1. Superficial. — Clavicle: Serno-mastoid: Omo-hyoid.
{ 2. Deep: Subclavian vein: Scalenus anticus: Brachial plexus. |
| | 2. Guides: — | Tubercle of 1 st rib. — Keep below Omo-hyoid, & along outer border of Scalenus. | |
| | 3. Operation: — | Incision: 3 to 4 inches long, parallel to and above Clavicle.
1. Skin, Platysma and Cervical fascia, avoiding External Jugular.
2. Deep Cervical fascia, and tear cellular tissue containing lymphatic glands, and avoid transverse cervical, &c.
3. Keep below Omo-hyoid, seek posterior border of Scalenus anticus, and pass finger to the tubercle of 1 st rib. Artery external & behind.
4. Pass needle under Artery on inner side. | |
| | | | |
| | | | |
| | | | |
| 2. <i>Middle third, between the Scaleni.</i> | 1. Anatomy: — | Relations. Vessels given off. — Artery passes upwards and outwards. | Nerves pass downwards and outwards. |
| | 2. Guide: — | Scalenus anticus. | |
| | 3. Operation: — | Incision: same as above but more internally.
1. Skin, Platysma and Cervical fascia.
2. Fibres of Serno-mastoid.
3. Scalenus anticus near its insertion. Avoid Phrenic Nerve, and internal Mammary Artery.
4. Pass needle from without inwards. | |
| | | | |
| | | | |
| | | | |
| 3. <i>Internal third, inside the Scaleni.</i> | Anatomy. | On the right side: very short, numerous trunks: not advisable. | On the left side: longer, rarely performed on account of proximity of Lungs, Phrenic & Pneumogastric nerves, Thoracic Duct, &c. |
| | | | |
| | | Operation the same as performed for the Innominata. | |
| | | | |

TABLE XCVII.

Ligature of the Arteria Innominata.

Cases requiring.

Course indicated.

Anatomical relations.

Methods adopted.

- | | | |
|--|--|---|
| 1. <i>Mott's Operation.</i> | Position: — | Recumbent, face turned slightly to left shoulder. |
| | Incision: — | |
| | 1. Skin, Platysma, Fascia. | |
| | 2. Divide Sternal, & part of clavicular origins of Serno-mastoid, & turn it upwards. | |
| | 3. Divide cautiously Serno-hyoid and Serno-thyroid muscles. | |
| 4. Separate cellular tissue and veins covering artery. | | |
| 5. Isolate Artery and pass needle. | | |
| 2. <i>King's Operation.</i> | Position: — | Recumbent; head thrown back, face turned to right, Surgeon on left. |
| | Incision: — | 2 inches, along inner border of Serno-mastoid to its origin. |
| | 1. Skin, Platysma, Fascia. | |
| | 2. Separate cellular tissue, and expose Serno-hyoid and -thyroid muscles. | |
| | 3. Separate these muscles from Trachea, and expose Cellular tissue and veins. | |
| | 4. Clear these away, and, if necessary, divide and tie veins. | |
| | 5. Push on either side the left Vena Innominata & right internal Jugular Vein. | |
| | 6. Flex head, pass finger between Trachea and Serno-hyoid muscles, & feel artery. | |
| 7. Isolate Artery, first on right then on left, & then raise it with Needle. | | |
| 8. Apply ligature. Take care of Pneumogastric, Pleura, &c. | | |

Remarks on applicability.

Former preferred.

Ligature of the Common Carotid.

Cases requiring. *Surgical Anatomy.* May be tied in two places.

- | | | |
|----------------------------|---|--|
| 1. Above the
Omo-hyoid. | { | 1. Anatomy. — Relations. Male and female. |
| | | 2. Guide. — Inner edge of Serno-mastoid. Larynx internally. |
| 2. Below the
Omo-hyoid. | { | Position. On back, chest raised, neck stretched. |
| | | Incision. 3 inches long; over inner border of Serno-mastoid. |
| | { | 3. Operation. — 1. Skin, Platysma & Fascia; — avoid Vein. |
| | | 2. Expose inner edge of Muscle, and divide deep Cervical Fascia. |
| | { | 3. Draw muscle out & expose sheath, which divide, avoiding nerve. |
| | | 4. Isolate Artery; avoid vein & pneumogastric. |
| | { | 1. Anatomy. — Relations, muscular coverings. |
| | | 2. Guides. — Serno-thyroid muscle. Trachea. Carotid tubercle. |
| | { | Position. head straight & thrown back. |
| | | Incision. 2 to 3 inches: above clavicular articulation to inner side of Serno-mastoid. |
| | { | 3. Operation. — 1. Skin, Platysma & Fascia. |
| | | 2. Expose inner border of Serno-mastoid. |
| | { | 3. Expose Serno-hyoid and -thyroid muscles. |
| | | 4. Draw these muscles inwards, & if necessary, divide outer border. |
| | { | 5. Expose sheath, open it close to Trachea, keep close to Trachea. |

Ligature of the Lingual Artery.

Cases requiring. *Position.*

- | | | |
|---------------|---|---|
| 1. Anatomy. | { | 2. Guide. — Tendon of Digastricus. |
| | | Incision. 15 lines long; 2 lines above & parallel to great cornu of Os hyoides. |
| 3. Operation. | { | 1. Skin, Platysma and Cervical Fascia, exposing inferior border of sub-maxillary gland. |
| | | 2. Expose glistening tendon of Digastricus. Half a line below is the Lingual nerve. |
| | { | 3. Divide Hyoglossus muscle 1 line below nerve, transversely. |
| | | Artery exposed. |

* Remarks on Ligature of the External Carotid Artery and its other branches.

Ligature of the Anterior Tibial Artery.

Cases requiring. May be tied in three places. Line indicating its course.
Position of the Patient.

1. On dorsum of Foot.
 1. Anatomy. — Relations. Line marking course of artery.
 2. Guide: — The first fasciculus of the Extensor brevis digitorum.
 3. Operation: —
 - Incision: 2 inches long; in course of line; between Extensor longus pollicis and Extensor brevis digitorum; over first interosseal space.
 1. Skin, cellular tissue.
 2. Aponeurosis, laying bare inner margin of Extensor brevis digitorum.
 3. Open deep layers of sheath of muscle and expose artery.
2. In lower third of Leg.
 1. Anatomy. — Relations. Course.
 2. Guide: — Fibular border of tendon of Extensor longus pollicis.
 3. Operation: —
 - Incision: 2½ inches long; line indicated.
 1. Skin, subcutaneous fat, & cellular tissue.
 2. Divide fascia and expose tendon of Extensor longus pollicis.
 3. Separate Extensor longus pollicis from Extensor digitorum communis.
 4. Flex ankle. Isolate artery.
3. In middle third of Leg.
 1. Anatomy. — Relations. Course.
 2. Guide: — Outer side of Tibialis anticus; 1st tendon from Tibia.
 3. Operation: —
 - Incision 3 inches long; line indicated.
 1. Skin, cellular tissue.
 2. Fascia: & open 1st interspace or take 1st tendon from Tibia.
 3. Bend ankle & separate Tibialis anticus from Extensor longus pollicis.
 4. Open sheath. Separate venæ-comites.

TABLE CI.

Ligature of the Posterior Tibial Artery.

Cases requiring. May be tied in three places. Line indicating its course.
Position of Patient.

1. Behind the Malleolus.
 1. Anatomy. — Situation. Relations.
 2. Guide: — Line indicating course of artery.
 3. Operation: —
 - Incision: Lisfranc, Velpeau, Manec.
 - Curved incision in middle of interspace between Malleolus & Tendo Achillis.
 1. Skin, cellular tissue, fat.
 2. Fascia — caution.
 3. Artery with two veins. Nerve behind external.
2. In middle third of Artery.
 1. Anatomy: — Situation. Relations. — 6 to 8 lines external to inner border of Tibia.
 2. Guide: — Line indicating course of artery.
 3. Operation: —
 - Incision: 2 to 3 inches. Lisfranc, Velpeau, Manec.
 - Midway between bone & Tendo Achillis somewhat oblique.
 1. Skin, superficial fascia and cellular tissue.
 2. Deep Fascia, and divide part of Soleus if requisite.
 3. Artery with two veins. Nerve outside.
3. In upper third of Artery.
 1. Anatomy.
 2. Guide: — Line indicating course of artery.
 3. Operation: —
 - Incision: vertical, 4 inches long; 8 to 10 lines from inner border of Tibia.
 1. Skin and superficial fascia, exposing Gastrocnemius, which draw out.
 2. Detach origin of Soleus from inner border of Tibia, and draw out.
 3. Deep fascia — incision — and expose artery.
 - * Guthrie's operation: incision central, great length. &c.

Ligature of the Peroneal Artery.

Cases requiring.	Line indicating its course.	Anatomical position & relations.
Operation (a little below centre of Leg)	Incision. 2 inches from external border of Tendo-Achillis, obliquely outwards to external border of Fibula.	
	1. Skin and superficial Fascia.	
	2. Turn Tendo-Achillis inwards and divide deep fascia.	
	3. Seek first muscular interspace from Fibula, separate it with finger, and draw outwards. Flexor longus pollicis.	

Ligature of the Popliteal Artery.

Cases requiring. Propriety of the operation. - Ligature of Femoral generally preferred.
Position of the Patient.

1. Lower half.	1. Anatomy.	Situation and relations.
	2. Guide.	Space between heads of Gastrocnemii.
	3. Operation.	Incision. 3 to 4 inches, in median line, vertical, below knee. 1. Skin & cellular tissue, avoiding external Saphena vein, & draw aside. 2. Aponeurosis and seek space between heads of Gastrocnemii. 3. Separate heads in flexing knee, exposing nerve-vascular bundle. 4. Draw nerve and vein inwards, and pass needle from within outwards.
2. Upper half.	1. Anatomy.	Situation and relations.
	2. Guide.	Posterior or external margin of semimembranosus.
	3. Operation.	Incision. 4 inches, external to inner hamstrings. 1. Skin & cellular tissue. 2. Aponeurosis: Fascia lata. 3. Tear through adipose tissue and expose nerve. 4. Draw nerve and vein outwards and isolate artery. - Difficulty.

Ligature of the Femoral Artery.

Cases requiring. May be tied in three places. Position of Patient.

1. In middle third.	1. Anatomy.	Situation and relations.
	2. Guide.	Internal border of Sartorius.
	3. Operation.	Incision. 3 inches long, at middle third of Thigh, between Sartorius & Gracilis. 1. Skin and Cellular tissue, avoiding Saphena vein. 2. Fascia lata: expose Sartorius, which draw outwards. 3. Fascia extending from Adductor to Vastus internus & expose sheath. 4. Open sheath, avoid Nerve. * Some take the outer border of the Sartorius as guide & draw the muscle inwards.
2. In upper third.	1. Anatomy.	Situation and relations. Course indicated. Scarpa's triangle.
	2. Guide.	Inner border of Sartorius.
	3. Operation.	Incision. 3 inches long in course indicated. 1. Skin and cellular tissue, avoid Saphena vein. 2. Fascia lata, exposing inner border of Sartorius, which draw out. 3. Sheath exposed and opened - avoid nerves.
3. At Poupert's Ligament.	1. Anatomy.	Situation, relations, course indicated.
	2. Guide.	Position of Artery.
	3. Operation.	Incision. 3 inches, in centre of space between Spines of Pubis & Ilium. 1. Skin & superficial Fascia. - Tie superficial vessels if requisite. 2. Fascia lata. 3. Sheath to be opened & needle passed from within outwards.

Ligature of the External Iliac Artery.

Cases requiring.	Anatomical relations.	Position of Patient.
Guide. —	Line indicating the course of Artery. —	Spermatic Cord.
1. <i>Abernethy's Operation.</i>	<p>Incision: 3 inches in direction of Artery: about $1\frac{1}{2}$ inches from Anterior Sup. spine of Ilium, nearly tin. outside Extern^l Abdom^l ring; terminating $\frac{1}{2}$ in. above Poupart's Ligament.</p> <ol style="list-style-type: none"> 1. Skin and superficial Fascia and vessels. 2. Tendon of External Oblique to be divided. 3. Margins of Internal Oblique and Transversalis to be sufficiently divided. 4. Transversalis Fascia: exposing Peritoneum. Take care of Epigastric 5. Peritoneum to be drawn upwards and inwards, and Artery laid bare. 6. Pass needle from within outwards. — Vein outside Artery. — Care in isolation. 	
2. <i>Sir A. Cooper's Operation.</i>	<p>Incision: semi-lunar, convexity below, commencing a little above & near to the spine of Ilium, and terminating a little above inner margin of external ring.</p> <ol style="list-style-type: none"> 1. Skin and superficial Fascia and vessels. 2. Tendon of External Oblique, — which raise. 3. Spermatic Cord laid bare: pass finger under cord through the internal ring 4. Fascia transversalis. 5. Peritoneum requires very little disturbance. 	
3. <i>Bogros's Operation.</i>	<p>Incision: 2 to 3 inches; just above Poupart's Ligament: extremities at equal distances from spine of Ilium and Pubes; straight, and parallel to Ligament —</p> <ol style="list-style-type: none"> 1. Skin and superficial Fascia. 2. Tendon of External Oblique, incised parallel to Poupart's Ligament. 3. Cut through attachments of Cremaster to Poupart's Ligament, & draw inwards. 4. Fascia Transversalis at internal ring. Avoid Epigastric Artery. 	
The advantages and disadvantages of each discussed.		

TABLE CVI.

Ligature of the Internal Iliac Artery.

Cases requiring.	Anatomical relations.	Course indicated.
	Position of the Patient.	
1. <i>Stevens's Operation.</i>	<p>Incision: 4 to 5 inches long, parallel to, and $\frac{1}{2}$ inch outside of, course of Epigastric Artery, terminating 1 inch above Poupart's Ligament —</p> <ol style="list-style-type: none"> 1. Skin and superficial Fascia. 2. External Oblique tendon. 3. Internal Oblique and Transversalis Muscles; taking care of Cord. 4. Fascia Transversalis. 5. Draw upwards and inwards the Peritoneum with Retractor. 6. Isolate Artery and pass needle from within outwards. 	
2. <i>Sir A. Cooper's Operation.</i>	That for the External Iliac slightly modified. <i>Liston's Operation.</i>	

Ligature of the Common Iliac Artery.

Cases requiring. Anatomical relations. Course indicated.

Operation the same as for the External Iliac and Internal Iliac, the incisions requiring to be made higher up and not so low down.

Liston has one general Incision for all three Operations, and modified to suit each particular case.

Amputations.

General remarks on history and literature of the subject.

1. Cases requiring. — { 1. Primary Amputation, when requisite.
2. Secondary Amputation, when requisite.
* Difference between Hospital practice & Field of Battle.
1. Compound fractures. — { 2. Extensive contused and lacerated wounds.
3. Part carried away by a Cannon-ball.
4. Mortification.
5. Diseased Joints, where excision is inapplicable.
6. Extensive disease of bone.
7. Tumours involving a bone or joint.
8. Deformity. "Opérations de complaisance".


2. Objects in view. — { 1. Sufficient soft parts to cover bone.
2. Prevent projection of bone.
3. Obtain a speedy and firm cicatrix.
4. Have a stump well cushioned.
* Recollect Skin and Muscle retract and bone remains as divided.

3. Methods. — { 1. Circular. — { 1. Cheselden's Operation. { 1. Incision through skin, & reflect.
2. Alanson's — " — { 2. Muscles straight to bone.
3. B. Bell's — " — { 1. Skin, and reflect.
2. Divide muscles obliquely.
4. Portal's — " — { 1. Skin, and reflect.
2. Muscles straight to bone.
3. Detach muscles from bone to 1 inch.
5. Valentine's — " — { Divide muscles in different position: Flexors during flexion, Extensors in extension & Adductors in adduction.
6. Hey's — " — { Exactly the opposite. Make each tense before division.
7. Brunninghausen's. { Oblique incision of muscles. Modification of Portal, but more simple.
{ Leave nothing but integument to cover stump.
{ If circumference of limb be 3, the diam. is 3; reflect flap 1 1/2 in.
General summary & remarks.
2. Single flap. — { to requisite size & completed with semicircular incision.
{ 1. Lateral flaps: by Transfixion. Vermeil's Operation.
2. Antero-posterior flaps: by Transfixion.
3. One flap formed by Transfixion & cutting out; the other of same size, but formed by semicircular incision from the surface, obliquely towards the bone. Either way may be commenced.
4. Both flaps formed by cutting obliquely from the surface towards the bone. — Langenbeck's Operation.
3. Double flap. — { 4. Oblique, or Oval. — merely a modification of the Circular.

General Rules in Amputation.

1. *Instruments &c.* {
 1. Tourniquet and wet roller.
 2. Knives, Saw, Bone forceps, Artery forceps, Tenaculum.
 3. Ligatures, Sponges and cold water.
 4. Sutures, Needles, Lint, Strapping and Rollers.
2. *Position of the Patient.*
3. *Position of Assistants:* number and their separate duties.
4. *Position of the Operator.* — Rule. Place yourself so that the left hand may grasp the upper part of limb.
5. *Command the Artery.* {
 1. The Tourniquet and its application.
 2. Compression of Artery by assistance.
6. *Always plan the operation.* The method and precise point of section of bone.
7. *Operation.* — {
 1. Incisions.
 2. Section of Bone.
 3. Ligature of vessels and their disposal.
 4. Adaptation of flaps &c. Dressing of Stump.
8. *After consequences.* {
 1. Spasms of Stump.
 2. Secondary hæmorrhage.
 3. Protrusion of Bone.
 4. Bulbous enlargement of Nerves.

General Rules when Amputating at Joints. (Malgaigne.)

1. *Recognise the Joint.* {
 1. Intimate Anatomical knowledge of joint and Ligaments.
 2. Seek osseous tuberosities in vicinity {
 1. Look for side, where most prominent.
 2. Render them more prominent by position.
 3. If fat or œdema masking them, make pressure.
 4. Trace bone to its extremity.
 3. The folds of skin either over or near the joint.
 4. Make prominent the tendons inserted near the joint.
 5. Distances and relations to neighbouring prominences.
 6. Find joint by motion of bone, above and below.
 7. If still not recognized, make the necessary incision and run knife along, in direction of the joint, until found.
2. *Traverse the Joint.* {
 1. Index and thumb must remain applied to the two extremities of diameter of joint, until replaced by the knife.
 2. In attacking dorsal surface of joint, semi-flex the limb.
 3. In general, divide principle bonds of union before opening the joint; cut from without inwards.
 4. In irregular joints, as Tarsus, commence externally or internally, & if stopped, withdraw knife and carry it further over joint.
 5. Rule. — Joints, to the Surgeon, offer four aspects, the Ligaments whereof he has to cut.
 6. The dorsal and lateral ligaments cut, joint easily entered, except where there is an inter-osseous ligament, which divide by Anatomical knowledge.
 7. It is useless to luxate forcibly. — "Arte non vi".
3. *Make the flap.* — {
 1. Circular. Can only count on the skin, therefore have sufficient & raise like sleeve.
 2. Oval. By tracing on dorsal surface an inverted V. and uniting extremities by a semicircular incision, thus .
 3. Flap — either one or two — made first, or after traversing joint.

Amputations of the Upper Extremity.

I. Phalanges.

Sometimes requisite.

Operations. — { 1. Circular, best; — allow 3 lines for reflecting skin.
2. Double flap.

TABLE CXI.

II. Phalangeal Joints.

1. Anatomy.

2. Guides.

- { 1. Palmar aspect, articular interline { 1. In 1st and 2nd joints it is on level with joint, not quite transverse } 2. In 2nd and 3rd — it is half a line below
2. Dorsal aspect: a fold; and half a line below is the interline. If absent, flex & observe dorsal prominence; cut half a line below.
3. Laterally. — look for termination of palmar bend; — joint half a line below.

3. Operations.

- { 1. Circular. — 3 to 4 lines below interline. Ancient.
2. Double flap. — { 1. Dorsal and palmar of equal length.
2. Lateral.
3. Single flap. — { 1. Dorsal semicircular flap, small. Open joint.
2. Cut lateral ligaments; — each separate.
3. Make palmar flap in finishing.
* May transfuse and form palmar flap first.

TABLE CXII.

III. Metacarpo-phalangeal Joints.

1. One Finger

- { 1. Anatomy. Recollect the articular head belongs to the Metacarpus.
2. Guides. — { 1. Palmar: — joint, 10 to 12 lines above digital commissure.
2. Dorsal: — sensible depression on drawing extended finger forwards whilst pushing metacarpal bone backwards.
3. Operations: { 1. Circular. — { 1. At palmar groove, on level with commissure.
2. Divide all soft parts down to bone.
3. Exarticulate.
2. Double flap. — { 1. Flex at angle of 45°. Commence on dorsum 3 lines beyond joint, divide tendon & descend obliquely towards digital commissure; depress & carry knife back towards palm.
2. Detach flap, open joint, traverse joint.
3. Luxate finger and cut 2nd flap in coming out.
* For index and little fingers make a larger flap on free side.
3. Oval. — { 1. Commence on dorsum, oblique incision to commissure; then along palmar groove & terminate on dorsum.
2. Dissect round, open joint on dorsum & exarticulate.
* Operation for Thumb the same, only there are 2 palmar grooves, take the lower.

2. The four Fingers.

- { 1. Anatomy. — Heads of 2nd & 4th Metacarpus on same level; the 3rd 1/2 of a line beyond; that of 5th 1/2 a line behind
2. Guides. — same as last.
3. Operations. { 1. Circular. — { 1. Hand supine. Semicircular incision along digito-palmar groove, cutting through all tissues.
2. Pronate, complete circular on dorsum, on level with commissure, opening joints.
3. Luxate Phalanges
2. Single flap. — { 1. Convex, semicircular dorsal incision; dissect back.
2. Open joints on dorsum & divide lateral ligaments.
3. Cut palmar flap in completing, along palmar grooves.
* The same for two or three Fingers.

Amputations of the Upper Extremity, continued.

IV. Metacarpal Bones.

- | | | |
|---------------------------|-----------------------------------|--|
| 1. One Metacarpal bone | { 1. Anatomy.
{ 2. Operations. | { 1. Double flap. { 1. As described in last Table, modified to suit.
{ 2. May transfix and cut flaps, first on one side & then on the other, and saw bone.
{ 2. Oval. — same as described in last table. |
| 2. Four Metacarpal bones. | { Operations. | { 1. Single flap: — taken from palmar surface.
{ 2. Double flap: — palmar and dorsal.
{ 3. Circular. |

TABLE CXIV.

V. Carpo-metacarpal Joints.

- | | | |
|--|--|---|
| 1. Thumb. | { 1. Anatomy of Tissues and Joint: direction of Joint.
{ 2. Guide — Externally, the prominence of base of Metacarpal Bone, rendered during adduction.
{ 3. Operations. | { 1. Single flap. { 1. Abduct. Carry knife boldly from Commissure down to Trapezium.
{ 2. Incline knife obliquely and traverse joint.
{ 3. Turn and cut along radial border of bone, forming external flap, to level with Commissure.
{ 4. Tie radial Artery.
{ * May transfix and form outside flap first.
{ * Velpeau makes a palmar flap after a dorsal incision.
{ 2. Oval. — { 1. Commence 1 line above joint and carry incision to commissure on inside of phalanx of thumb. —
{ 2. then carry knife along upper groove of palmar surface to dorsum and terminate at starting point.
{ 3. Open joint, luxate, and detach tissues close to bone. |
| 2. Little Finger. | { 1. Anatomy.
{ 2. Guide: — Joint immediately below Unciform process. Can ascertain articular interline on dorsal surface, by varied movements of bone.
{ 3. Operations. | { 1. Single Flap. { 1. Grasp, transfix & form inner flap.
{ 2. Draw tissues out, transfix and cut along outside to digital Commissure.
{ 3. Open joint from inner side and luxate?
{ 2. Oval. — { 1. Commence 1 line above joint, cut along inside, as far as digito-palmar groove.
{ 2. Pass round base of finger on to dorsal aspect, and terminate at starting point.
{ 3. Divide tissues close to bone, and luxate. |
| 3. Index, Middle and Ring Fingers, rarely required. Importance of study of Joints. | | |
| 4. The four Fingers | { 1. Anatomy: — Study Joints.
{ 2. Guides: — On inner side — that of little finger, which see.
{ On outer side — on dorsum — the point where the 2 first Metacarpal bones meet.
{ 3. Operation. | { 1. Semilunar dorsal flap; which raise.
{ 2. Open joint and luxate.
{ 3. Finish with palmar flap. |

Amputations of the Upper Extremity, continued.

VI. Wrist Joint.

1. *Anatomy.* — Joint just below Styloid processes: — a curve. — Motion of wrist to be studied.
1. Forcibly bend hand back, point of angle with Fore-arm indicates the joint.
 2. Anteriorly can feel transverse prominence of Radius. Joint 1 line below to 5 lines above cutaneous bend.
2. *Guides.* —
3. Well determine apex of Styloid processes; draw transverse line between them, and the middle of joint will be $2\frac{1}{2}$ lines above it.
 4. Styloid process of Radius only recognised; that of Ulna will be 2 lines lower down: the middle of joint will be 3 to 4 lines higher up than it.
3. *Operations.* —
- | | | |
|-----------------|---|--|
| 1. Circular. | { | <ol style="list-style-type: none"> 1. Assistant to draw skin forcibly upwards. 2. Circular incision round base of thenar & hypothenar eminences, reflect skin. 3. Divide tendons &c. 4. Exarticulate. |
| 2. Double flap. | { | <ol style="list-style-type: none"> 1. Ordinary: — <ol style="list-style-type: none"> 1. Dorsal semicircular flap, which raise. 2. Divide tendons, open joint & exarticulate. 3. Finish by forming palmar flap. 2. Lisfranc: — <ol style="list-style-type: none"> 1. Transfix anteriorly and form palmar flap. 2. Cut semicircular dorsal flap, and raise it. 3. Divide tendons and exarticulate. |

VII. Fore-arm.

1. *Anatomy.* — as regards relative proportion of muscular and tendinous tissue.
2. *Place to be selected and position of limb.* —
1. Circular incision of skin and cellular tissue: retract.
 2. Cut Muscles equally in whole circumference.
 3. Divide Muscles left uncut, and periosteum, the interosseal tissues, &c.
 4. Retract tissues & saw Radius and Ulna together, taking care to divide the Ulna last.
 5. Tie the Arteries: —
 1. Radial.
 2. Ulnar.
 3. Anterior interosseal.
 4. Posterior interosseal.
3. *Operations.* —
- | | | |
|---|---|--|
| 1. Circular. | { | <ol style="list-style-type: none"> 1. Anterior semicircular flap. 2. Semicircular incision of posterior part. 3. Raise flap; isolate bones & saw. |
| 2. Single flap. | { | <ol style="list-style-type: none"> 1. Transfix and form anterior flap. 2. Transfix and form posterior flap. 3. Isolate bones and saw. |
| 3. Double flap. | { | <ol style="list-style-type: none"> 1. Transfix and form anterior flap. 2. Transfix and form posterior flap. 3. Isolate bones and saw. |
| | | <p>* The Double flap methods, 3 & 4, mentioned in TABLE CXVII are also applicable.</p> |
| <p>4. Oval or Oblique as recommended by Baudens, — disadvantageous.</p> | | |

Amputations of the Upper Extremity continued.

VIII. Elbow Joint.

1. *Anatomy.* — Joint oblique from without to within, and from above to below. It is much below external and internal tuberosities of condyles. Irregularity. Ligaments &c.
2. *Guide.* — { 1. Externally — Head of Radius felt, having slight angle between it and condyle.
2. Internally.
3. *Operations.* — { 1. Single flap — { 1. Flax fore-arm one third, and supine completely.
2. Transfix from within to without and cut anterior flap.
3. Terminate with posterior semicircular incision.
4. Open joint between Radius and Humerus, and either saw through Olecranon or exarticulate entire.
2. Circular — { 1. Circular incision three fingers breadth below joint.
2. Reflect and cut muscles &c.
3. Open joint anteriorly and luxate.

IX. Upper-arm.

1. *Anatomy.*
2. *Place to be selected and position of limb.*
3. *Operations.* — { 1. Circular — { 1. Circular, through skin to fascia, and retract.
2. Muscular tissue.
3. Deeper structures; Musculo-spiral nerve, &c.
4. Saw bone.
5. Tie brachial, and bleeding branches.
2. Double flap — { 1. Antero-posterior flaps: — either by Transfixion or otherwise.
2. Lateral flaps: Velpeau.
* In upper third, the Single flap and Oval Operations recommended by some.

X. Shoulder Joint.

1. *Anatomy.* — Obstacles - Acromion and Coracoid processes, and Capsular muscles.
2. *Guide.*
3. *Operations.* — { 1. Single flap — { 1. Transfix below Acromion, cut close along bone, and form outer flap.
2. Raise flap, divide capsular muscles and open joint.
3. Exarticulate and cut on inside of Humerus to level of Axillary border.
* May make a semicircular incision from without inwards, passing from Acromion down towards insertion of Deltoid, then carried upwards to Coracoid process.
2. Double flap — { 1. Arm raised outwards, transfix from posterior border of Axilla to inside of Acromion process, and cut posterior flap of 3 inches.
2. Exarticulate and finish anterior flap.
3. Oval — { 1. Vertical incision from below Acromion to 1 inch below neck of Humerus divide down to bone.
2. Two oblique incisions from this, along anterior & posterior borders of Axilla.
3. Reflect and exarticulate.
4. Circular — { 1. Circular 4 fingers breadth below Acromion, and retract.
2. Divide muscles obliquely towards joint.
3. Exarticulate.

Amputations of the Lower Extremity.

I. Phalanges. — Never requisite. Same as for the fingers.

II. Phalangeal Joints. — Not employed, Great toe excepted, then same as fingers & thumb.

III. Metatarso-phalangeal Joints.

1. One Toe. — { 1. Anatomy — same as Hand. Take care, the great toe has two or three Sesamoid bones.
2. Guide. — do —
3. Operation. — do — Oval Operation preferred. Question of removal of head of bone.
2. Five Toes. — { 1. Anatomy. — same as Hand. 1st and 3rd Metatarsal bones on level, 2nd 1/2 of line in front, 4th 1/2 a line behind, 5th still more posterior, varies sometimes.
2. Guide. — same as Hand.
3. Operations. — { 1. Flap Operation. See Metacarpo-phalangeal Joints. TABLE CXXI.
2. Circular. — Ditto
- * The same for two, three or four Toes.

TABLE CXXI.

IV. Metatarsal Bones.

1. One Metatarsal Bone. — Anatomy and Operation the same as for Metacarpus.
2. The five Metatarsal Bones. — { Single flap. — taken from plantar surface, either before or after making semicircular dorsal incision.

TABLE CXXII.

V. Tarso-metatarsal Joints.

1. Great Toe. — { 1. Anatomy. — Articular ends of bone expanded. Four ligaments.
2. Guides. — { 1. Finger passed along at base of Metatarsus from before backwards, feel a tuberosity, a depression & a second prominence: joint between the two.
2. Finger passed along from behind forwards, touch in front of Malleolus is the tuberosity of Scaphoid, the joint is 13 to 14 lines in front.
3. Flex foot on leg, and trace tendon of Tibialis anticus, inserted into first Metatarsal bone.
4. Transverse line across foot, from tuberosity of 5th Metatarsal bone; joint 1/2 in. in front.
3. Operations. — { 1. Single flap. — { 1. Draw integument inwards, pierce 2 lines behind joint & cut flap, terminating beyond Metatarso-phalangeal articulation.
2. Cross bone a little obliquely, pass between Metatarsal bones, thro' to plantar surface, and cut up to commissure.
3. Exarticulate.
2. Oval. — { 1. Commence 2 lines behind joint, pass obliquely from within to without, to commissure of toes.
2. Run round base of 1st phalanx, following plantar groove.
3. Mount along inside and carry incision to point of starting.
4. Reflect skin, divide tendons, open joint and exarticulate.
2. Little Toe. — Similar Operations may be performed.
3. Each of other Toes. — The same; but oval method preferable.
4. Two Metatarsal Bones together. — Modification of Oval method. Beclard's Operation.
5. Metatarsus wholly. — { 1. Anatomy. — Articulation oblique. Internal side of lines anterior to the external.
Direction. — The 5th & Cuboid, double obliquity. 4th Curved. 3rd nearly transverse. 2nd lodged in kind of tenon & mortice. — 1st Oblique.
Study bones and ligaments.
2. Guide. — { 1. Internally. — See guides for great toe.
2. Externally. — Tuberosity of 5th Metatarsal bone, hollow behind, there the joint.
3. Operation. — Single flap. — { 1. Semilunar dorsal flap, reflect & cut tendon.
2. Open joints, first on one side then on other, afterwards on dorsum.
3. Exarticulate, & some little force requisite.
4. Cut plantar flap

Amputations of the Lower Extremity, continued.

VI. *Medio-tarsal Joint*;— called *Chopart's Operation*.

1. *Anatomy*. — Direction of articulating surfaces.
2. *Guides*. — { 1. Internally. — Run finger from Malleolus, 1st tuberosity belongs to Scaphoid, joint immediately behind.
 2. Externally. — ————— Calcis, ————— in front.
 or lines behind tuberosity of fifth Metatarsal bone is the joint.
3. Middle of dorsal surface. — Extend foot. — can feel head of Astragalus at junction of external third with middle third.
3. *Operation*. — { Single flap. — { 1. Semilunar dorsal flap, reflect and cut tendons.
 2. Open joints and exarticulate.
 3. Cut plantar flap following concavity of Tarsus, — sufficient length.
 * May make the flap first.

TABLE CXXIV.

VII. *Ankle Joint*.

1. *Anatomy*. — Ligaments. Relation of Malleoli. Relation of soft parts to Os Calcis.
2. *Guide*. — The Malleoli.
3. *Operation*. — { 1. Perpendicular to sole of foot, and in front of extremities of Malleoli, make a semicircular incision, starting from one Malleolus round sole of foot to the other, — like a stirrup.
 2. Reflect flap, keeping close to Os Calcis.
 3. Semilunar dorsal incision. reflect. Divide tendons and open joint.
 4. Exarticulate and saw off ends of Malleoli.
4. *Advantages and disadvantages*.

TABLE CXXV.

VIII. *Leg*.

1. *Anatomy*.
2. *Place of Operation*. — Three fingers breadth below tuberosity of Tibia.
 Disadvantages of operating lower down.
3. *Operations*. — { 1. Circular. — { 1. Circular incision. reflect skin like a sleeve.
 2. Divide Muscles straight to bone.
 3. Clear bones and interosseal space by figure of 8 movement of knife?
 4. Saw bones together, taking care to finish Tibula first.
 5. Tie Arteries. — { 1. Anterior Tibial.
 2. Posterior Tibial.
 3. Peroneal.
 4. Muscular.
2. Single flap. — { 1. Transfix & form posterior flap of sufficient length.
 2. Semicircular incision anteriorly, and reflect.
 * May form the latter first.
 3. Complete Operation as in Circular.
3. Double flap. — { 1. Transfix and form posterior flap.
 2. Make anterior flap, of same size, by semicircular incision, & reflect.
 3. Proceed as in Circular.
 * May make two lateral flaps of equal length, — commencing at anterior border of Tibia. — semicircular convex incisions.
4. Oval or Oblique.

Amputations of the Lower Extremity, continued.

IX. Knee Joint.

1. *Anatomy.*

2. *Operation generally rejected.*

- | | | |
|----------------------|--|--|
| 3. <i>Operations</i> | 1. Single flap. | 1. Limb extended. - Anteriorly. - Semicircular incision below Patella, extending to posterior part of Condyles of Femur. |
| | | 2. Flex limb and open joint. Exarticulate. |
| | | 3. Cut posterior flap of sufficient size. |
| | 2. Circular. | ? Remove patella or leave it. |
| | | 1. Circular: 3 to 4 fingers breadth below Patella, without involving the Muscles. Reflect. |
| | | 2. Open joint and cut tissues on level. |
| 3. Oval. | 1. Commence 3 fingers breadth below Sig. Patella at spine of Tibia, carry incision obliquely back from below upwards to Popliteal space. | |
| | 2. Continue round, and carry knife from above downwards to terminate 2 fingers breadth below Sig. Patella. | |
| | 3. Reflect integument, open joint and cut tissues on level. | |

X. Thigh.

1. *Anatomy.* — Relation of muscular tissue: Superficial and deep layers.

- | | | | | | | |
|--|---|--|------------------------------|--|-----------------------------------|--------------------|
| 2. <i>Operations.</i> | 1. Circular. | 1. Circular and reflect skin to 2 inches. | | | | |
| | | 2. Make section of Muscles in two cuttings. | | | | |
| | | 3. Saw bone 4 inches above cutaneous incision. | | | | |
| | | 4. Tie Arteries. | | | | |
| | 2. Double flap. | <table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td style="vertical-align: middle; padding-right: 5px;">{</td> <td>1. Femoral.</td> </tr> <tr> <td>2. Superficial and deep Muscular.</td> </tr> <tr> <td>3. Perforating &c.</td> </tr> </table> | { | 1. Femoral. | 2. Superficial and deep Muscular. | 3. Perforating &c. |
| | | { | 1. Femoral. | | | |
| | | 2. Superficial and deep Muscular. | | | | |
| | 3. Perforating &c. | | | | | |
| | 3. Single flap. | 1. Antero-posterior | | | | |
| | | 2. Lateral flaps. | | | | |
| 4. Oval. | <table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td style="vertical-align: middle; padding-right: 5px;">{</td> <td>1. Both made by transfixing.</td> </tr> <tr> <td>2. Posterior flap made by transfixing & anterior by semicircular incision.</td> </tr> </table> | { | 1. Both made by transfixing. | 2. Posterior flap made by transfixing & anterior by semicircular incision. | | |
| | { | 1. Both made by transfixing. | | | | |
| 2. Posterior flap made by transfixing & anterior by semicircular incision. | | | | | | |
| Not in use. | | | | | | |

Amputations of the Lower Extremity continued.

XI. *Hip Joint.*

1. *Anatomy.* — {
1. Soft structures. {
 1. Anteriorly. — Terminations of Psoas and Iliacus, part of Rectus and Pectineus Muscles: Femoral vessels.
 2. Posteriorly & internally, an enormous mass of muscles.
 3. Externally. — Thin layer of skin, chiefly occupied by bone.
 2. Femoral Artery. — Its relations to the joint and neck of Femur.
 3. Osseous prominences {
 1. Trochanter major, directed upwards and backwards, slightly curved.
 2. Trochanter minor, lower border $\frac{1}{2}$ longer than upper, varied angles.
 3. Tuber ischii, 15 lines in advance of Acetabulum in recumbent position.
2. *Approximate Guides.* {
- Joint deeply placed, anterior part only to be felt.
1. From Ant. sup. spine of Ilium vertical line 15 lines, joint 6 lines internal to its lower end.
 2. — — — — — inf. — — — — — 6 lines, its extremity corresponds to upper part of joint.
 3. — — Spine of Pubes transverse line $2\frac{1}{4}$ inches and another of $\frac{1}{4}$ inch descending at right angles from extremity of first will fall on the joint.
 4. — — lateral & superior border of Trochanter major a perpendicular line $\frac{1}{4}$ in. upwards, from this another drawn at right angles 1 inch inwards, falls on outer part of head.
3. *Operations.* {
1. Single flap. {
 1. Semilunar incision from superior and external part of Trochanter major to tuberosity of Ischium: cut down to bone.
 2. Raise flap, carry limb inwards and rotate: open joint.
 3. Flex limb on Abdomen: exarticulate.
 4. Having traversed joint, make anterior and internal section, of 4 to 5 fingers breadth.
 2. Double flap. {
 1. Antero-posterior {
 1. Pierce 1 inch above apex of Trochanter, perforating at opposite point on inside: cut anterior flap close to bone, and about 3 inches below joint.
 2. Open capsule: exarticulate.
 3. Form posterior flap, descending 3 in. below joint.
 - * May make the posterior flap first.
 2. Lateral flaps recommended by Lisfranc.
 3. Oval. — recommended by Larrey, Cornuau &c variously modified.
 4. Circular. — Abernethy's Operation.