Syllabus of the course of lectures on materia medica and pharmacy : delivered in the University of Pennsylvania / by George B. Wood.

SYLLABUS

H.

Notes by Prof. Lyman

OF

THE COURSE OF LECTURES

ON

MATERIA MEDICA AND PHARMACY,

DELIVERED IN

THE UNIVERSITY OF PENNSYLVANIA.

BY GEORGE B. WOOD, M. D.

PHILADELPHIA:
PRINTED BY LYDIA R. BAILEY, NO. 26 NORTH FIFTH STREET.
1840.

PREFACE.

The following Syllabus was prepared with the exclusive view of facilitating the studies of those who attend the Lectures on Materia Medica and Pharmacy, delivered in the University of Pennsylvania. It can be understood and appreciated only in connexion with these lectures; and the author therefore deprecates any judgment upon its merits as an independent essay. One of his objects in publishing it is to supply the deficiencies of the work which he has adopted as the Text Book of his lectures. In the Dispensatory of the United States, many points are omitted which are deemed essential in a course of instruction upon Materia Medica, and the arrangement of its parts is not such as is best adapted for the convenient study of the science. But by taking the Syllabus as a guide, following the course which it indicates, committing to memory the facts which it presents, and on the points which are merely hinted at referring for information to the Dispensatory, in the order pointed out in the pamphlet, the student will be enabled, in connexion with the lectures, to obtain all the elementary knowledge on Materia Medica and Pharmacy which can be deemed essential. The author, however, does not wish to be understood as recommending his pupils to confine their reading within these narrow limits. On the contrary, he strongly urges on them the propriety, after having prosecuted the course of elementary study above referred to, of perusing all the respectable treatises on these branches of medical science which may be within their reach, not neglecting those of the French and German writers. They will thus be enabled to form a more enlightened judgment in relation to the accuracy of the facts and the correctness of the opinions which they may have been taught; and will at the same time acquire a stock of additional knowledge, which cannot fail to prove useful in the practical pursuit of their profession.

smell + taste of medicine particularly important as well as the effects produced upon them by heat air moisture time to act upon them - Also the proximate principles of plants, their solubility inflammability + relation to water + alcohol

Apothecaries Weight + Measure

℔	℥	ʒ	℈	grs	cong	O	f℥	f ʒ	m	cubic inches
1 =	12 =	96 =	288 =	5760	1 =	8 =	128 =	1024 =	61440 =	231
	1 =	8 =	24 =	480		1 =	16 =	128 =	7680 =	28.875
		1 =	3 =	60			1 =	8 =	480 =	1.8047
			1 =	20				1 =	60 =	.2256

Avoirdupois Weight

℔ 1 = 16 = 256 = 7000

oz 1 = 16 = 437.5

dr. 1 = grs 27.34375

Approximate Measurement

a tea cup = f ʒ jv or 1 gill

" wine glass = " ij

" table spoon = " ss

" tea spoon = f ʒ j or 60 m

Dose for a child is in proportion to age increased by 12 + divided by age viz:

at 10 yr is 10 + 12 = 22 ÷ 10 = 5/11

" 6 " " 6 + 12 = 18 ÷ 6 = 3/9 = 1/3

{ Tinctures f ʒ contain 120 drops
{ Water f ʒ " 60 "
{ Dustin for examination

SYLLABUS OF LECTURES.

PRELIMINARY OBSERVATIONS.

Materia Medica is the science which treats of medicines; Pharmacy, the art of preparing them for use. Both are subjects of the present course of lectures; but the latter, belonging properly to a distinct profession, is considered of secondary importance, and treated of incidentally, and as subsidiary to the former.

Medicines are substances capable of producing, as an ordinary result, and by their own inherent power, certain modifications of the vital functions, which render them applicable to the cure of disease.

The proper mode of studying medicines considered. The objects of attention in relation to them are their origin; their modes of collection and preparation for market; their commercial history; their sensible properties, and chemical composition and relations; their physiological action or influence upon the bodily functions in a state of health, and, in connexion with this, their toxicological history; their effects in morbid states of the system, and the general indications they are calculated to answer in the treatment of disease; their particular applications in cases which do not fall within any general rule; and finally, their dose, mode of administration, and the extemporaneous or officinal preparation to which they may be subjected.

Observations in relation to Pharmacopœias, or codes published by authoritative bodies for the recognition of standard remedies, and the regulation of the modes of preparing them for use.

The study of Botany recommended as preliminary to that of Materia Medica; and some acquaintance with Chemistry, Anatomy, and Physiology considered essential to a thorough understanding of the subject in all its relations.

An accurate knowledge of the standard weights and measures employed in the purchase and sale, as well as in the preparation and prescription of medicines, insisted on as a necessary accomplishment of the student of Materia Medica.

These weights and measures explained. (See U. S. Dispensatory.)

Modus operandi of medicines. The operation of medicines considered as *primary* or *secondary*, the former being their immediate action upon the system, the latter that which follows their original and characteristic impression, in consequence of certain physiological laws.

Primary operation of Medicines.

In the *primary operation* of medicines, they may, *first*, extend their influence over the system or to distant parts by means of nervous communication, or *secondly*, they may enter the blood-vessels and act through the medium of the circulation, or, *thirdly*, they may act exclusively in the neighbourhood of their application.

1. The mode of operation by means of nervous communication explained and illustrated. This communication effected either by the propagation of the original impression to the brain, and its transmission thence to the part or parts operated upon, or directly through the medium of nerves connecting the part receiving the impression of the medicine with the seat of its characteristic action.

2. The operation of medicines through the route of the circulation proved by their existence in the secretions, and still more satisfactorily by their detection in the blood-vessels, after having been taken into the stomach or applied to various other parts of the body. The idea advanced that some medicines probably act in both ways, viz. by nervous communication or sympathy, and by absorption into the blood-vessels and circulation with the blood. Facts stated to show that medicines may be absorbed not from the alimentary canal only, but also from the bronchial mucous membrane, the serous surfaces, the cellular tissue, and from the skin especially when deprived of its cuticle. The rapidity of the absorption is often very great, but various according to the part to which the medicine is applied, the state of the system at the time, and the nature of the medicine itself. Said to be greatest from the air cells of the lungs, to be inversely proportionate to the quantity of cir-

culating fluids, and to be favoured by the solubility, miscibility with the blood, and freedom from corrosive properties of the substance absorbed. Some observations in relation to the mode in which absorption is effected.

3. The exclusively local action of certain medicines, or of substances applied in a certain manner, alluded to, and illustrated.

In their primary action, medicines stated to differ greatly as to the parts which they affect; each particular medicine or class of medicines having a tendency to act on some one portion of the system, some one organ or set of organs, more than upon others. This tendency often independent of the part of the body to which the medicine is applied. Explained by the possession of different susceptibilities by different components of the frame, in consequence of which one portion receives impressions from the contact of a medicine, while another is wholly impassive to its action. In this tendency to particular parts, a ground of distinction between medicines pointed out. Certain substances act especially on some one of the minor systems of the body, as the circulatory, nervous, or absorbent; and as these pervade the whole frame, and are so interwoven in their sympathies as well as position, that one cannot be deeply affected without some participation of the others, such substances may be considered as general in their action. Others have an especial affinity for some one of the organs, as the stomach, bowels, skin, kidneys, or lungs; and as these organs are distinct in situation, the medicines affecting them may be said to be local in their primary action. Both the general and local remedies may be subdivided according as they operate on some one of the systems or organs in preference to the others.

The opinion maintained that medicines differ not only as to the part which they are disposed to affect, but also in the nature of their primary action upon the same part. Another ground of classification thus afforded. But notwithstanding this difference in the essential nature of their action, medicines almost universally, in their primary operation, either produce an excitement of the system, or some portion of it, above the healthy standard, or occasion a depression of action below that standard; in other words, are *stimulant* or *sedative*. The great majority of them are stimulant, and perhaps all may be so applied as to produce a direct excitement of some part or organ of the body. But it is not deducible from this fact that there are no direct sedatives. It is a mistake to consider medicines essentially stimulant or essentially sedative under all circumstances. Medicines produce peculiar effects not only from their own peculiar nature, but in consequence also of the peculiar susceptibilities of the body or its organs. Now these susceptibilities are not the same in different parts of the frame in health, nor even in the same part in different states of health, or under different circumstances of situation. A necessary inference is, that the same medicine must operate differently in different parts of the body having these different susceptibilities, and even that its operation upon the same part may vary with its susceptibility. There can be no difficulty, therefore, in understanding that a medicine may be either stimulant or sedative, according to the part on which it acts, or to the condition of the system or some one of its organs at the time of its action. Instances illustrative of these statements adduced.

It is important to be acquainted with the various influences, which, by affecting the system, may modify the action of medicines. These influences treated of under the heads of 1. disease, 2. climate, 3. modes of living, 4. habit, 5. age, 6. sex, 7. temperament, 8. idiosyncrasies, and 9. mental operations. (See U. S. Dispensatory—Appendix.)

Secondary Effects of Medicines.

By this term are meant the changes which take place in any portion of the body, not produced by the immediate operation of the medicine, but dependent upon certain laws of the system, which determine peculiar actions or conditions as the consequence of antecedent actions or conditions. Arranged under the following heads:—

1. A state of depression following excitement;
2. Sympathetic excitement arising from local inflammation;
3. Removal of local irritations or inflammations on the principle of revulsion;
4. Cessation of diseased action in consequence of the removal of the cause;
5. Efforts made by nature to repair the damage received in consequence of the application of medicines to the body.

These effects highly important in the treatment of disease. Explained and illustrated.

Administration of medicines next considered, including, *first*, the forms in which they are used, and *secondly*, the parts with which they are brought into contact, and the modes of applying them.

Forms in which Medicines are used.

Medicines are administered, in the solid state, in the shape of *powders*, *pills*, *troches*, *electuaries*, and *confections;* in the liquid state, in the shape of *mixtures* and *solutions*. Under the head of solutions are included the officinal preparations designated by the names of *infusions*, *decoctions*, *wines*, *tinctures*, *vinegars*, *syrups*, *honeys*, and *oxymels*. Medicines

When blood vessels are full the action of medicines is lessened by previous venesection, thus promoting absorption

Dr Wood mentions case of salivation produced by external application to feet of mercurial ointment -

Infiltration of coats of blood vessels during life promoted by a peculiar vital force, prevailing over the physical

Possibly in very low state of the system, the physical may prevail over the vital force - Medicines applied to the hand may be carried to the body by veins, tho' W. thinks it is owing to absorbents terminating in the coats of the vessels - Dr Wood thinks that ~~[illegible]~~ blood vessels are supplied with absorbents, tho' it is a disputed question among anatomists & physiologists - He accounts for the appearance of poisonous substances in the blood, after having been applied to the coats of the vessels, by supposing that this very application, weakens the vital force of the coats - Digitalis soothes the action of the heart, but increases the secretion from the kidneys - Tartar Emetic has same effect when absorbed, but excites inflammatory action upon the skin producing particular eruption - Cayenne pepper produces burning sensation in throat, in fact establishes inflammation, but when inflammation already exists it has a sedative influence - In health Opii. constipates but in colic (also in gastritis, &c see Eberle Vol 1 p. 216) it relaxes the spasm, enabling purgatives to act more readily - Ol. Terebinth. relieves a burn, tho' in a healthy state it would irritate the skin

Recommends Gum Arabic dissolved sugar & water for the incorporation of powders into the pilular form - Soap sometimes used tho' incompatible with metallic salts - Dissolve Nitrate of Silver & corrosive sublimate in water, then make them up with crumb of bread -

2 Medicines often applied in enemata, to obtain their peculiar effect upon the mucous membrane of rectum itself

"For instance the relative dose of Opium. Should be regulated by habits of patient. If in habit of chewing this drug, he might even take more by the mouth perhaps, than it would be safe or prudent to administer by the rectum

Without removing cuticle, friction necessary, to force the substance thro' this coating – for instance, in the application of mercurial ointment,

Tobacco cataplasm to epigastrium, is an instance of the powerful action of medicines, sometimes, by simple contact

1– In Bubon for instance the application would be to inner side of thigh.

are also used in the form of *liniments*, *cerates*, *ointments*, *plasters*, and *cataplasms*. Each of these forms of preparation commented on. For all essential information in relation to them, the student is referred to the U. S. Dispensatory—the Index of which will point out the place where he may find them treated of. Besides the forms above mentioned, medicines are sometimes applied in the state of vapour.

Parts to which Medicines are applied, and modes of applying them.

1. The *stomach*; but on this it is not requisite to enlarge.

2. The *rectum*. To this part medicines are applied with two objects—*first*, to produce alvine evacuation, *secondly*, to obtain their peculiar impression upon the system. In the latter case, as it is desirable that the medicine should remain in the bowels, it should generally be given in a small bulk, and may often be advantageously combined with opium to prevent irritation and consequent purging. In both cases, the first impulse to evacuate the bowels should be resisted; and the operator should assist the efforts of the patient, when requisite, by pressing a warm folded towel against the part.

The quantity of medicines administered by the rectum, with a view to their peculiar action, is, as a general rule, about three times their ordinary dose; but as the relative susceptibility of the rectum and stomach is not always the same, it is best to begin with less than this proportion, when the medicine is very active. It is possible, moreover, that while the susceptibility of the stomach is diminished by the frequent use of any particular medicine, that of the rectum may remain comparatively unimpaired; so that in cases where very large doses of an active medicine are habitually swallowed, it would not be proper to hazard the administration of a triple quantity per anum.

Medicines introduced into the rectum in the solid state are called *suppositories*—in the liquid *clysters*, *injections*, or *enemata*. The mode of applying suppositories requires no comment. Enemata are either fluid, or composed of solid matter diffused in a liquid vehicle. In the latter case, it is important that the medicine, especially when irritating, should be equally diffused. Water is generally used as the vehicle. If an insoluble substance is to be suspended in it, some mucilaginous, saccharine, or other viscid body should be added. The quantity of the vehicle should vary with the nature of the medicine and the effects to be produced. If the enema is to be retained, the quantity should be as small as is compatible with convenient administration. If intended to operate upon the bowels, the bulk should be larger. One or two fluidounces in the former case, and a pint in the latter, are about the proper mean proportions for an adult.

3. The *skin*. The modes of application are numerous. As regards the skin itself, the cuticle may be retained or removed; as regards the medicine, it may be used in the form of vapour, that of liquid, or that of a soft solid, and may come in contact with the whole surface of the body or only a part.

Modes of applying vapour described.

Liquids are applied by lotion, bath, semicupium, or pediluvium. Observations on each of these modes.

Solids are applied by simple contact, in the form of cataplasms, ointments, cerates, and plasters; or by the aid of friction, in a soft or semifluid state; or to the surface deprived of the cuticle. The last is the most efficient mode of affecting the system through the surface. Almost all remedies which act in small doses, and are not very irritating or corrosive, may be used in this way. The circumstances under which it is proper to resort to the *endermic* method of administering a medicine, are, 1. an unwillingness of the patient to swallow or inability to retain it, 2. the liability to an injurious degree of irritation from its internal use, 3. the loss of the susceptibility of the stomach to its action from frequent repetition, 4. the necessity in which we may be placed of endeavouring to introduce it into the system by every accessible passage, and 5. the existence of violent or obstinate local affections, in which it is desirable to apply the medicine as near to the seat of disease as possible. The cuticle may be most conveniently removed by means of a blister, which may be from two to four inches square. The best positions are in general the epigastrium, or the inner parts of the extremities. Sometimes the immediate vicinity of the disease may be preferable; and sometimes a position over the course of the absorbents which run into the part affected. The medicine may be sprinkled on the denuded surface in the form of powder, either undiluted, or, if of an irritating nature, mixed with wheat flour or arrow-root. It may also be applied in the form of ointment, or, if in the liquid state, by means of pledgets of lint. The dose should be twice or three times that which would be requisite by the mouth.

4. *Bronchial tubes and pulmonary air-cells.* Substances applied to these parts are usually in the form of gas or vapour. Fine powders have been thrown into the lungs by being mixed with the inspired air; but this plan is not recommended.

Inhalation is effected either by diffusing the gas or vapour through the air respired by the patient, or by confining it in a bag furnished with a suitable tube through which the patient may breathe, or by means of an instrument called an inhaler.

Instruments for facilitating inhalation exhibited and described.

5. *Nostrils and adjoining cavities.* Medicines applied to this surface probably act in general by the strong sympathies which connect the organ of smell with other parts of the system. Two purposes are answered—1. a powerful excitement of the brain in cases of insensibility from want of cerebral action; 2. a strong revulsion from neighbouring parts.

The inside of the mouth is sometimes selected as a position for the application of remedies; but this is in reference chiefly to their local irritant action.

Attempts have been made to produce impressions upon the system through the *blood-vessels.* This plan not recommended.

Classification.

Advantages of classification stated.

Different plans recommended according to the object proposed. That believed to be best adapted to the wants of the medical student and practitioner, is founded on the relations which medicines bear to the human system in the healthy state. Reasons for this belief stated. The following plan, founded on this basis, is adopted in the present course of lectures.

Substances used remedially act either on the living body, or on extraneous matters contained within the body, and serving as a source of disease. The former constitute the great mass of medicines, and it is to these alone, according to the definition before given, that the term medicine is strictly applicable. The latter, however, for the sake of convenience, may be considered as medicines, and are here ranked in a distinct group. The first division, therefore, is into medicines which act upon the living body, and those which act upon foreign matters contained within the body.

Of the medicines acting on the living body, there are two divisions, viz. *general remedies* which operate on some one or more of the systems pervading the whole body, and *local remedies* acting especially on particular organs.

The *general remedies* are divided into two sets, one having a stimulant or excitant, the other a sedative influence. The former are called *stimulants*, the latter *sedatives.*

Stimulants differ in the rapidity and duration of their action, some being slow and lasting, others rapid and transient. The former are called permanent, the latter diffusible stimulants.

Permanent stimulants are found to differ in one important point, some producing a constringing or contracting effect wherever they act, others exercising their permanently stimulant influence without this effect. Hence the division into the two classes of *astringents* and *tonics.*

Of the *diffusible stimulants* some act more especially on the heart and arteries, with little comparative influence on the brain and nerves, while others, together with their influence on the circulation, conjoin a decided operation upon the cerebro-spinal system. Hence the division into *arterial stimulants*, and *cerebro-nervous stimulants.*

The latter of these classes may be separated into two subdivisions, founded upon the fact that some of them produce a decided impression upon the proper cerebral functions, while others appear to act upon the nervous system at large without special tendency to the brain. These subdivisions may be named *cerebral stimulants* or *stimulant narcotics*, and *nervous stimulants*, identical with those usually denominated *antispasmodics.*

Sedatives are divided into those which affect the heart and arteries exclusively, and those which also operate upon the nervous system. Hence the classes of *arterial sedatives* or *refrigerants*, and *nervous sedatives* or *sedative narcotics.*

Local remedies are divided into those which affect the functions, those which affect the organization, and those which are mechanical in their action.

The medicines affecting the function of a part, are 1. *Emetics*, acting on the stomach; 2. *Cathartics*, acting on the bowels; 3. *Diuretics*, acting on the kidneys; 4. *Diaphoretics*, acting on the skin; 5. *Expectorants*, acting on the lungs; 6. *Emmenagogues*, acting on the uterus; 7. *Sialagogues*, acting on the salivary glands; and 8. *Errhines*, acting on the nostrils.

Medicines which affect the organization of a part are divided into 1. *Rubefacients*, which produce inflammation; 2. *Epispastics*, which excite vesication; and 3. *Escharotics*, which destroy the life of the part, and occasion a slough.

Medicines operating mechanically, include 1. *Demulcents*, which protect surfaces from the action of irritants, or mixing with these, obtund their acrimony; 2. *Emollients*, which soften and relax the skin; and 3. *Diluents*, which act by diluting the fluids of the body.

Besides the remedies included in the above classes, there are some, belonging to the first great division, so peculiar in their action, that they cannot be conveniently classified, and therefore deserve to be considered separately. These are ergot, nux vomica, arsenic, mercury, and iodine.

Medicines acting on foreign substances contained within the body, are included in the two classes of 1. *Antacids*, which neutralize acids; and 2. *Anthelmintics*, which destroy or expel worms.

TABULAR VIEW OF THE CLASSIFICATION.

- Substances which act on the living body.
  - General remedies.
    - Stimulants.
      - Permanent stimulants.
        - Astringents.
        - Tonics.
      - Diffusible stimulants.
        - Arterial stimulants.
        - Cerebro-nervous stimulants.
          - Cerebral stimulants, or stimulant narcotics.
          - Nervous stimulants, commonly called antispasmodics.
    - Sedatives.
      - Arterial sedatives or refrigerants.
      - Nervous sedatives or sedative narcotics.
  - Local remedies.
    - Affecting the functions.
      - Emetics.
      - Cathartics.
      - Diuretics.
      - Diaphoretics.
      - Expectorants.
      - Emmenagogues.
      - Sialagogues.
      - Errhines.
    - Affecting the organization.
      - Rubefacients.
      - Epispastics.
      - Escharotics.
    - Operating mechanically.
      - Demulcents.
      - Emollients.
      - Diluents.
  - Medicines insusceptible of accurate classification.
    - Ergot.
    - Nux vomica.
    - Arsenic.
    - Mercury.
    - Iodine.
- Substances which act on foreign matters contained within the body.
  - Antacids.
  - Anthelmintics.

CLASS I.

ASTRINGENTS.

General Observations.

Defined to be medicines which produce contraction of the living tissues.

Their action explained. Every living tissue is possessed of contractility which requires only the appropriate stimulus to call it into action. This is afforded by astringents. Their operation is entirely vital, and independent of chemical or mechanical laws.

Their effect in parts to which they may be directly applied is obvious. Their action may extend also over the system, but is then less evident.

General effects from astringents—greater firmness of muscle; diminished calibre and greater rigidity of blood-vessels and absorbents, and consequently a harder and more contracted pulse; diminution or closure of secreting orifices, and consequently diminution of secretion. Some assert that they render the blood thicker and its coagulum firmer.

They produce moderate and permanent excitement of the organic life, but have little influence over the nervous system, or the functions of animal life.

Indicated in unhealthy discharges from the blood-vessels, whether hemorrhagic or by secretion, and in cases generally which depend on relaxation of the tissues.

1. Unhealthy discharges.

Here they operate by closing the secreting or bleeding orifices. They are not, however, applicable to all cases indiscriminately—only to those in which the discharge depends on weakness of the blood-vessels, or in which it is merely local or sustained by habit after the disappearance of the original cause, or when it is so profuse as to render its suppression desirable at the risk of aggravating the morbid condition in which it had its origin.

Contra-indicated by the existence of any morbid condition of which the discharge is a mere effect, and which it is calculated to relieve, and by the existence of any considerable local or general excitement.

In cases of excitement, if it be desirable to suppress a discharge, the use of astringents should, as a general rule, be preceded by bleeding or other depleting measures.

The particular complaints to which astringents are applicable, under this indication, are diarrhœa, chronic dysentery, diabetes, catarrh of the bladder, excessive sweating, sometimes, perhaps, dropsical swellings depending on relaxation, and all the hemorrhages. In all these cases, however, it is necessary to bear in mind the contra-indicating circumstances already mentioned.

Explanatory remarks.

2. Disorders connected with relaxation of the tissues.

These often consist in morbid discharges, in which case they fall under the preceding head. Sometimes, however, the system is left after acute diseases in a state of relaxation, in which astringents are useful, particularly in combination with tonics, even when no unhealthy discharge exists.

In chronic complaints such a condition also occasionally exists, either original or induced—as in scrofula and rickets.

The external use of astringents is governed by the same rules with some modification.

Applicable in cases of increased mucous secretions, after the subsidence of inflammatory action, as from the urethra, vagina, rectum, and nostrils—of excessive perspiration—of hemorrhages from parts within reach—and in cases of local relaxation, as in various venous distentions, prolapsed anus, uterus, and uvula, and flabby ulcers.

Their local application is admissible under circumstances in which their internal use would not be justifiable; as, in the former mode, more of their proper astringent effect is obtained, with much less of their general stimulation.

Locally used, astringents are sometimes beneficial even in cases of actual inflammation. They probably do good by producing contraction of the capillaries, and thus expelling the blood. But for this purpose, as a general rule, they are applicable only in the commencement of the inflammation, before the excitability has been much increased, or in the latter stages after it has become in some measure exhausted.

Astringents may be divided into two sections—the vegetable and mineral, the former having a certain identity of character depending on similarity of composition, the latter agreeing only in the possession of the common property of astringency.

Don of astringent Tinctures 1c iij fz

Almost all have some tonic principle in combination

Formerly, thought very erroneously, to act chemically

In experiment upon a horse, he was fed on mush on oak bark, the blood became firmer & harder, & required two months exposure, before putrefying —

The only astringent applicable during inflammatory state is acetate of Lead

all the vegetable astringents are bitter & afterwards tonick —

It is Tannic, not Gallic acid, & the latter is but slightly astringent

Tannin precipitates most all the metallic salts in solution. There are two kinds, it varying according to the vegetable yielding it — 1st Tannin which is rendered black or blue by the per salts of iron 2d The 1st — — — — green — — — — — — The 1st most abundant found in different species of oak the second in Peruvian bark Catechu Kino &c — Colorless, a yellowish white, purely astringent, & not bitter, soluble in water & alcohol, insoluble in fixed & volatile oils — (See last page) —

White Oak bark —

Light brown fibrous texture, feeble odor rough astringent slightly bitter — Yields virtues to water & alcohol, Chief ingredients, tannin gallic acid & extractive matter

Black Oak Bark

bark externally, brownish internally, more bitter than last & gives yellowish color to saliva, owing to quercitrin, One of purest & least bitter of astringents, used internally in intermittent, chronic diarrhea & passive hemorrhage, not much used however internally — Externally, Scrofula, ulcerations, intermittent diarrhea, cholera infantum. also in poultices, to gangrene & mortification & as wash to ill conditioned ulcers & Decoction of roasted acorns directed by Hufeland in Scrofula owing probably to development of empyreumatic oil —

Galls — See last page

Kino — origin not certainly known.

Several varieties, African, Jamaica Botany Bay & East India or Amboyna — The last, the only variety purchased here — Small, brown irregular fragments, powder redder than in mass. No odor, rough & very astringent — Slightly bitter & then sweet — Water dissolves two thirds alcohol add's — Officinal alcohol destroys its astringency, & produces a coagulum — Alkalies favor its solubility, but change its nature, destroying its astringency — It is in small fragments which is not the case with the other varieties — Aqueous solution precipitated by gelatin, soluble salts of iron ~~copper~~ antimony silver & lead, permuriate of mercury, sulphuric, nitric & muriatic acids — preparations with opium should be taken immediately — Used for suppression of morbid discharges, particularly that from ulcers — Powder 10 c 30 grs — Infusion is a convenient form 3ij to ℥viij of water to ℥iij of Extract, straining when cool, Dose ℥ij — Alcohol is an objection to the tincture, so called to indolent ulcers & morbid discharges, also in Epistaxis —

The vegetable astringents owe their peculiar properties to a proximate principle called tannin or tannic acid, which is found in all of them. They differ only in the proportion of this principle, and in the character of the other ingredients with which it is associated.

The sensible and chemical properties of *tannin*, its relations with other medicinal substances, and its medical properties and applications described. Dose, 3 grains every 3 or 4 hours.

In relation to mineral astringents, as they have nothing in common which does not belong to the whole class, each being distinguished by peculiar properties, no general observations are required.

1. *Vegetable Astringents.*

WHITE-OAK BARK.—QUERCUS ALBA. *U.S.*
BLACK-OAK BARK.—QUERCUS TINCTORIA. *U.S.*

Oak bark derived from different species of Quercus. *Quercus alba* or white-oak, and Q. *tinctoria* or black-oak, the species officinally recognised in this country.

Description of white-oak bark. Its sensible properties and relations to water and alcohol.

Chief ingredient, tannin, which is most abundant in the inner bark and in that gathered in spring.

Description of black-oak bark. Its sensible properties and relations to water and alcohol.

Chief ingredients, tannin and a colouring principle called *quercitrin*.

Medical properties and internal use.

Black-oak bark less disposed to occasion constipation than white-oak bark. Sometimes even laxative. Both more used externally than internally.

Particular applications as external remedies.

Used in powder, decoction, and extract. Dose of the powder, 30 grains; of the decoction, f℥ij.; of the extract, 20 grains.

Other parts of the oak possessed of similar properties; but more feeble. The leaves and acorn cups may be substituted for the bark.

Acorn highly astringent, but also more bitter. Uses, and mode of preparation.

GALLS.—GALLA. *U.S.*

Excrescences on the young branches of the *Quercus infectoria* and other species.

Locality and description of the tree.

Mode in which the gall is produced.

Brought from the Levant and the East Indies.

General characters, including size, shape, and nature of surface.

Two varieties—*blue galls* and *white galls*. Difference between them.

Sensible properties, and relations to water and alcohol.

Most interesting ingredients, tannin and gallic acid. Virtues depend chiefly on the former.

Substances with which galls afford precipitates, and with which they are incompatible in prescriptions.

Medical properties and uses. Chiefly employed externally.

Used in powder, infusion, or decoction. Dose of the powder, 10 to 20 grains; of the infusion, made in the proportion of half an ounce to a pint, f℥ij.

A tincture directed by Ed. and Dub. Pharm.—Dose f℥j. to f℥iij. More used as a test than as a medicine.

KINO. *U.S.*

Varieties.—1. African kino; 2. Jamaica kino; 3. Botany Bay kino; 4. East India, or Amboyna kino.

Supposed source of each variety.

The East India kino most used—obviously an extract.

General characters of kino, including shape and size of the fragments, nature of the surface, colour of the powder, &c.—sensible properties—relations to water and alcohol.

Interesting ingredients, tannin and extractive. Virtues depend on the tannin, which is of the variety that affords a dark greenish precipitate with sulphate of iron.

Incompatibles same as those with galls.

Medical properties and uses. One of the vegetable astringents best adapted for internal use.

Used in powder, infusion, and tincture. Dose of the powder, 10 to 30 grains—of the infusion, made in the proportion of 2 drachms to 6 fluidounces, from f℥ss. to f℥iss.

Objection to the tincture.

CATECHU. *U.S.*

Extract of the wood of the *Acacia Catechu*—perhaps also from other sources.

Locality and description of A. Catechu.

Mode of preparing catechu, its aspect, colour, odour, taste, fracture, and other physical properties—the colour of its powder, and its relations to water and alcohol.

Impurities.

Chief ingredient, tannin like that of kino, with a little extractive.

Chemical relations same as those of kino.

Dark coloured catechu said to contain most tannin.

Medical properties and uses.

Kino preferable for internal use, as purer.

Used in powder, infusion, and tincture. Dose same as that of kino. Dose of the tincture from f℥ss. to f℥iij.

RHATANY.—KRAMERIA. *U.S.*

Root of the *Krameria triandra*.

Character of the plant and place of its growth.

Form of the root—sensible properties—difference between the cortical and ligneous portions—colour of the powder—relations to water and alcohol, and the colour imparted by it to these liquids.

Active ingredient, tannin like that of kino.

Medical properties and uses essentially the same as those of kino and catechu. Recently much used, particularly in uterine hemorrhage.

Used in powder, decoction, tincture, and extract. Dose of the powder, 20 to 30 grains—of the decoction, made by boiling one ounce in a pint, from f℥j. to f℥ij.—of the tincture from f℥j. to f℥ij.

The extract made by evaporating the infusion or tincture. Injured by long boiling. Dose, 10 or 15 grains.

LOGWOOD.—HÆMATOXYLON. *U.S.*

Wood of the *Hæmatoxylon Campechianum*.

Character of this tree and place of its growth.

State of the wood as imported, and as kept in the shops.

Sensible properties of logwood, and relations to water and alcohol. Effect of exposure on the colour.

Characteristic ingredient, a peculiar colouring principle called *hematin*.

Medical properties and uses.

Employed in decoction and extract. Dose of the decoction f℥ij.—of the extract 10 to 30 grains.

CRANESBILL.—GERANIUM. *U.S.*

Root of the *Geranium maculatum*—an indigenous perennial herbaceous plant, growing in woods.

Shape and general aspect of the root, its sensible properties, and relations to water and alcohol.

Active ingredient, tannin.

Medical properties and uses.

Given in powder and decoction. Dose of the powder 20 to 30 grains—of the decoction made by boiling one ounce in a pint and a half of water to a pint, from f℥j. to f℥ij. Some times boiled in milk.

BLACKBERRY-ROOT.—RUBUS VILLOSUS. *U.S.*
DEWBERRY-ROOT.—RUBUS TRIVIALIS. *U.S.*

Roots of the *Rubus villosus* and *R. trivialis*—similar in medical properties.

Both plants indigenous—former an erect prickly shrub—latter a creeping briar.

Shape and aspect of the roots. Virtues chiefly in the cortical part. Smallest roots, therefore, best. Sensible properties and relations to water and alcohol.

Active ingredient, tannin.

Medical properties and uses.

Usually given in decoction—made by boiling one ounce in a pint and a half of water to a pint. Dose f℥j. to f℥ij. Dose of the powder 20 or 30 grains.

UVA URSI. *U.S.*

Leaves of the *Arbutus Uva Ursi* or bear-berry, a small, trailing, evergreen shrub, indigenous in the northern parts of the old and new continents, and growing in the United States as far south as New Jersey.

Distinguishing characters of the dried leaves—colour, smell, and taste—colour of the powder—relations to water and alcohol.

Extractum Catechu — Catechu — Acacia Catechu

Formerly called Terra Japonica but erroneously - We derive it chiefly from Calcutta - In masses of every size up to lumps of nearly a pound - inodorous, astringent bitter then sweet, brittle when some resemblance to kino, almost entirely soluble in water - Chemical relations same as kino - The Alkalies prevents its precipitation by gelatin - — Gently tonic as well as astringent in dark colored mucous - Hardens chancre - Used in diarrhea dependent on debility - Dissolve a small piece slowly in mouth in irritation of fauces - good component of dentifrice - Injection in obstinate gleet &c - Epistaxis - Sometimes introduced into cutting teeth to obtund sensibility of nerve - Dose grs x &c 3ij with Sugar or Gum Arab. & water, frequently repeated -

Rhatany - Krameria triandra - Radix

Long, blackish red, spreading root, hence the name Rhatany - native of Peru - We get the root from an inch in diameter to the thickness of a small quill - Bark slightly fibrous, & easily separable, inodorous, very astringent, bitter & slightly sweetish, smallest pieces best, as they contain most bark - Powder same color - yields virtues to water, boiling alcohol, addition of tincture to decoction produces pink colored precipitate - Contains tannin lignin gum starch saccharine matter & an acid - The mineral acids & most of metallic salts give precipitate with the infusion decoction & tincture - Extract resembling kino, obtained by evaporating decoction - Medical properties very similar to kino - Gently tonic - Extract being of uniform strength is perhaps preferable - Powder little used - Dose 20 c xxx grs - Decoction 3ij c 0 - Dose 3ij ivrij - Ext. grs x c xv Tincture 3iij c 0 with addition of some aromatic Dose f3i c ij Syrup, by addition of sugar c cold infusion - has been used for children 3ij 3 strained c iij c 10 of water good in fistula in ano -

Logwood - Hæmatoxylon - Lignum

Trees from xx c xl feet dark rough bark - Sap-wood yellow interior deep red - Native of Campeachy - used in dyeing - Found in shops cut into chips or rasped - becomes dark by exposure, slight odor, sweet & astringent, no bitterness Yields color c water & alcohol - Affords precipitate with sulphuric muriatic & acetic acids, alum, sulphate, copper & iron & acetate of lead also gelatin - Chief ingredient principle coloring principle called Hematin which has some resemblance to tannin - with salts of iron, affords purple precip. whereas veg. astringents generally afford bluish black - This is the only one of the astringents which does not owe its virtues to tannin - Pills should be used immediately - Mild astringent & unirritating - Used in relaxed condition of bowels Decoction f3ij c 0 ij - Dose f 3ij - Extract - grs x c xxx -

in restraining hemorrhages, epistaxis 5 a 20 grs every hour or two — nauseating effects obviated by addition of some aromatic — In colica pictonum, relieves the constipation ~~converting carbonate~~ of lead, into inert sulphate — Topically applied in various aqueous affections Dr W. recommends saturated solution hot it highly in leech bites — Alum whey ℥ij a Oj of milk — Dose ℥ij as gargle, taking dose of salts at same time — Also for poisoned wounds received in dissections Alum curd or Cataplasm — in Ophthalmia — Rub a lump of alum in white of egg until it coagulates —

Lead Plumbum

Not officinal in its metallic state — Occurs in nature in 3 different States, as an oxide, which is rare, as a sulphuret called galena, & as salt forming native sulphate, phosphate, carbonate, chromate, molybdate & arseniate of lead = Has a perceptible taste & when rubbed a peculiar smell — Nitric acid the best solvent, but sulphuric acid destroys & muriatic acid lessens its solvent power, because their compounds with lead are nearly insoluble — It forms 4 oxides — protoxide binoxide peroxide & red oxide — The protoxide in commerce is called massicot — Litharge is also a variety of this oxide & is very much used in pharmacy — The best tests are sulphuretted hydrogen which produces dark brown precipitate, & a solution of hydriodate of potass. affording a yellow precip. Med. Prop. — Its effects are sedative & astringent — Used internally to reduce vascular action, & to restrain inordinate discharges, externally as an abater of inflammation. Introduced into system produces lead colic & palsy — Carbonate, most virulent of its preparations Sulphuric acid used internally & externally, is remedy & prophylactic for its poisonous effects —

Dr Thompson says the carb. is the only form which poisons — & if other preps. poison they must 1st be converted into carb: — Dr Wood denies this, any prep. of lead being likely to poison — with exception of sulphate

Active ingredients, tannin and bitter extractive.

Medical properties, those of an astringent and mild tonic, with a tendency to act especially on the urinary organs, but without materially increasing the secretion.

Particular applications in disease.

Used in powder and decoction. Dose of the powder, from gr. xx. to ʒj., 3 or 4 times a day—of the decoction from fʒj. to fʒij. at the same intervals.

PIPSISSEWA.—CHIMAPHILA. *U.S.*

Leaves and stem of the *Chimaphila umbellata* or wintergreen—a small, indigenous, evergreen plant, growing in the north of Europe, Asia, and America, and abundant in the United States—inhabiting the woods.

Distinguishing characters of the leaves—colour, smell, and taste—relations to water and alcohol.

Active ingredients, tannin and bitter extractive.

Medical properties, those of a gentle astringent and tonic, with a direction to the urinary organs, upon which it sometimes acts as a diuretic. Therapeutical applications.

Given in decoction, made by boiling two ounces in three pints to two. Dose, a small teacupful 3 or 4 times a day.

An extract may be given in the dose of 20 or 30 grains four times a day.

The following vegetable astringents also spoken of.

Rind of the Pomegranate.—Granatum. U.S.

Unexpanded petals of the red rose.—Rosa Gallica, U.S.—with its preparations—the confection of roses (confectio rosæ), and the compound infusion of roses (infusum rosæ compositum).

Incidental remarks on the *Rosa centifolia*, or hundred leaved rose, and its distilled water, called *rose-water* or *aqua rosæ*, with the *unguentum aqua rosæ* prepared from it.

Bark and unripe fruit of the Persimmon. Diospyros Virginiana.

Tormentil—root of the *Tormentilla erecta.*

Bistort—root of the *Polygonum Bistorta.*

2. *Mineral Astringents.*

ALUM.—ALUMEN. *U.S.*

Chemically, a sulphate of alumina and potassa.

Salts essentially similar in medical properties are formed with sulphate of alumina by ammonia and soda.

Sometimes native—more frequently prepared from ores, or by a direct combination of its constituents.

Shape of crystal—effect of exposure—colour and taste—solubility in water—effects of heat—chemical incompatibles.

Effects on the system, and therapeutical application both internally and externally.

Alum curd as a local application.

A solution containing from 15 to 20 grains to the fluidounce of water, used as a gargle.

Given internally in powder, pill, or solution.

Dose 5 to 15 grains every three or four hours, or less frequently.

Alum whey as a form for internal use.

Dried alum an escharotic.

LEAD.—PLUMBUM.

Metallic lead probably inert.

General effects of its preparations considered under the two heads—1st, of their local irritant action—2d, of their peculiar specific action.

The two in some degree incompatible; as, when lead is applied so as to occasion much irritation, its absorption is impeded, and its peculiar influence on the system thus prevented.

The preparations of lead characterized by the union of astringency with a sedative power.

Description of its effects.

Poisonous action of lead. Fatal consequences may result both from the irritant action of the preparations of lead, and from its peculiar influence upon the system. The former event is more likely to ensue from large quantities taken at once—the latter from smaller quantities gradually insinuated into the system, and applied for a considerable time.

The only preparation not poisonous is probably the sulphate, which is thought to be inert from its great insolubility..

Treatment in cases of poisoning by preparations of lead. The sulphate of soda or sulphate of magnesia is the best antidote.

Preparations of lead employed—1. semivitrified oxide or litharge, 2. carbonate, 3. acetate, 4. sub-acetate.

LITHARGE.—PLUMBI OXIDUM SEMIVITRIUM. *U. S.*—Preparation—aspect—colour—smell and taste—solubility—chemical nature—impurities. Not used internally. Chiefly employed in the preparation of the *lead plaster*, *Emplastrum plumbi*, *U. S.*

Preparation of the lead plaster. Explanation of the chemical agencies concerned. Description. Uses.

CARBONATE OF LEAD.—PLUMBI CARBONAS. *U. S.*—Also called *white lead*, formerly *cerusse*. Preparation—general aspect—sensible properties—solubility. One of the most poisonous salts of lead. Most common source of painters' colic. Seldom or never used internally. External employment. Modes of application. A plaster officinal under the name of *Emplastrum Plumbi Carbonatis*.

ACETATE OF LEAD.—PLUMBI ACETAS. *U. S.*—Called also *sugar of lead* or *saccharum saturni*. Preparation—chemical composition—shape and appearance of crystals—effects of exposure—sensible properties—solubility in water and alcohol—appearance upon solution in common water, its cause, and mode of prevention.

Incompatible substances numerous—the most important, sulphuric, muriatic, and phosphoric acids and their soluble salts, the soluble carbonates, the alkalies, lime-water, vegetable astringents, and certain mucilages.

May be given safely in moderate doses not too long continued. In large quantities it is an irritative poison, in smaller, too long persevered in, it produces the peculiar poisonous effects of lead.

Diseases in which it is most useful, hemorrhage from the lungs and uterus, diarrhœa and dysentery. An advantage, that it is at the same time astringent and sedative. Hence given in the early stages. Usefully combined with opium. Dose, half a grain to three grains every hour, two, or three hours. Given in pill made with crumb of bread, or dissolved in water with the addition of vinegar.

Much used externally. Applied in this way, has the double effect of restraining discharges, and directly reducing inflammatory action—and hence may be used when other astringents are contraindicated. Complaints in which it is used externally. Employed in the state of solution. For application to the mucous surfaces, from 1 to 2 grains may be dissolved in a fluidounce of water, to the sound skin, ʒij. in Oj.

SOLUTION OF SUBACETATE OF LEAD.—LIQUOR PLUMBI SUBACETATIS. *U. S.*—Also called *Goulard's extract of lead*. Preparation, chemical nature and sensible properties. Decomposed by whatever decomposes the acetate, and in addition by carbonic acid, gum, and starch. Effects of exposure to the air.

Employed externally to reduce inflammation. Said to have produced local palsy. Diluted before application—fʒij. or fʒiij. to a pint of water.

The cerate of subacetate of lead—Ceratum Plumbi Subacetatis, U.S.—commonly called *Goulard's cerate*, prepared from this solution. An excellent application to inflamed and abraded surfaces. The best remedy for blisters indisposed to heal.

Besides the preparations of lead, those of some other metals are astringent—as of *zinc* and *iron*—but they are possessed also of other properties which classify them elsewhere. Thus also with *sulphuric acid*, and with some of the preparations of *lime*.

Litharge Plumbi Oxidum Semivitreum

It is obtained in the process for extracting Silver from argentiferous galenas, - Small, brilliant vitrified scales, some Red some yellow, devoid of taste or smell It attracts carbonic acid from the air - In commerce Sometimes contaminated with iron & copper. Identical in composition with protoxide of lead. Never used internally - Combined with olive oil it forms the Lead plaster, which is the basis of most plasters - Used extensively in the arts -

Carbonate of Lead Plumbi Carbonas

Heavy opaque insoluble powder, pure white color, inodorous & nearly insipid - Used as application to ulcers & inflamed surfaces - Has been recommended in facial neuralgia, This is considered the most virulently poisonous of all the preparations of lead - Sulphate of magnesia good antidote, formed an inert Sulphate of lead

Acetate of Lead Plumbi Acetas

A white salt chrystalized in needles, taste sweet then astringent, soluble in water & alcohol - Incompatible; decomposed by all acids & their soluble salts, which produce with protoxide of lead insoluble compounds. By lime water ammonia potass & soda, hard water, Sulphuret hydrogen & acetate of ammonia — In medicinal doses powerfully astringent & sedative - Administration rendered more safe by being mixed with vinegar, also by combination with Opium - Dose from 1 to 2 grs in form of pill every two or three hours, Solution 1/4 oz a pint of water & its turbidness may be removed by the addition of a little acetic acid - Turbidness owing to Carb. acid of water -

Solution of Sub Acetate of Lead - Liq. Plumb. Sub. Acetat.

Take acetate of lead & Semivitrified oxide of lead each ℥ viij Distilled water two pints, mix, boil 20 minutes & filter - Colorless Sweetish & astringent, one of its most striking properties is its facility of decomposition - Carbonic acid throws down white precip. of carbonate of lead - Affords precip. also with alkalies, alkaline earths & their carbonates, Sulph & muriatic acids, hydro sulphuric acid & Solutions of all the neutral salts also gum tannin most veg. coloring principles - Should be kept in well Stopped bottles & is used externally is astringent & sedative - Highly useful in inflammation from Sprains bruises &c, but should be diluted is applied by means of cloths, removed as they become dry - ℥ ij or iij in pint of water & still weaker if cuticle is removed - Paralysis said to have been produced by its local action - It is commonly called Goulards extract -

Ceratum Plumbi Sub Acetatis - Goulards Cerate -

Take of above Solution ℥ iij Yellow Wax ℥ iv Rose oil ℥ ij Camphor ℥ j, used to dry up excoriations & relieve inflammations & cutaneous eruptions, also to blistered surfaces indisposed to heal -

Iron of the tonic tinctures f℥j c f℥ij

Iron of the mineral tonic Tinct. of Muriate of Iron ♏ 10 c 30

" " " tonic infusions f℥j c f℥ij

made generally with ℥j c Oj Exceptions are quassia

℥ij c Oj & Gentian & Columbo ℥ss c Oj

Tonics in Substance 10 c 30 grs Exception quassia

20 c 60 grs ~~Gentian~~ 15 c 45 grs cloves 5 c 10 grs nutmeg 5 c 20

Extract of Cinchona & Gentian 5 c 30 grs. of Quassia 2 c 5 grs

When the healthy excitability is entirely gone, there is no use in giving tonics - for they are worse than useless — Like forcing a rotten vessel off a sand bank, you are sure to break it to pieces

'Add a bitter to neutral salt or lemon & great activity is given to the operation' "Chapman"

CLASS II.

TONICS.

General Observations.

Medicines which produce a gentle and permanent excitement of all the vital actions, though their influence is more observable in the functions of organic life, than in those of animal life.

Differ from astringents in the more general diffusion of their action, and in the want of any especial direction to the organic contractility.

The term "permanent" in relation to their action is not strictly correct. No medicine is permanently stimulant in the healthy state. All over-excitement ultimately produces a diminution of excitability; and, as every vital action is sustained by the influence of stimuli upon excitability, a diminution of healthy action results. Tonics operate slowly in exalting the functions, and their impression is more durable than that of the diffusible stimulants; but even the excitement produced by tonics, if given in the healthy state, is followed by a corresponding depression.

Tonics, therefore, are injurious if given in the healthy state, or in diseases of excitement. They may do harm in two ways, 1. by inducing an irritation which may result in inflammation; 2. by diminishing excitability or natural healthy power. These effects more fully explained. Diseases induced by the abuse of tonics. A good rule never to give these medicines in a state of sound health, with the view of increasing strength, or of rendering the system less accessible to disease.

Tonics indicated in cases in which the vital actions are depressed below the standard of health, in other words, in cases of debility. Here they produce increase of action, and if the excitability has not been materially impaired, place the system in a condition to recover and sustain itself. But even in debility, they should not be very long continued, as their ultimate effect might be an increase of the state they are given to remedy. A general rule, that tonics are applicable in debility without permanent loss of healthy excitability. Illustrations of this rule.

The mode by which tonics invigorate the system is two-fold—1. they increase the energy of the stomach and digestive organs when enfeebled, and thereby enable more nutriment to be thrown into the system; 2. they exercise a direct influence either by means of nervous communication, or through the medium of the blood-vessels, over the whole frame, producing an elevation of all the vital actions independently of any increase in the quantity of the blood.

Tonics differ in the degree of their stimulating property, and many of them also have individual peculiarities which serve to distinguish them prominently from the other members of the class. They may be divided into four sections; 1. the purer bitters; 2. bitters somewhat peculiar in their properties; 3. aromatics; and 4. mineral tonics.

1. *Pure bitters.* Bitterness possessed by all true vegetable tonics. At one time thought to be essentially the tonic power, and to reside in some peculiar principle. But the mineral tonics are not bitter, and the property belongs to many distinct vegetable principles. But still there seems to be some connexion between bitterness and the tonic property. Perhaps the same arrangement or shape of particles which produces the bitter taste when the medicine is applied to the tongue, is calculated to produce the tonic impression when it is applied to the stomach. Different substances may have this same arrangement or shape of particles, and in some it may be associated with other properties, which may enable them to operate with great energy on the system in a manner distinct from the tonic action, and calculated to conceal it. In this view of the subject every bitter substance may be tonic, though, from its possession of other more energetic properties, it may not display any tonic effect in its actual operation. This point further illustrated.

The pure bitters closely analogous in their effects, and used for the same purposes. Less stimulant than the others, and more purely tonic.

Effects on the system. They increase appetite—invigorate digestion—exert little influence over the circulation unless in large doses—offer little evidence of action on the nervous system—in large doses are apt to purge, and in very large doses sometimes vomit.

2. *Bitters peculiar in their properties.* Peculiar either by the inherent constitution of their bitter principle, as in Peruvian bark, or in consequence of its association with other

principles which modify its action, as in serpentaria, with a volatile oil, and in wild cherry bark, with prussic acid. In general, this division is more stimulating than the purer bitters, but not universally so.

3. *Aromatics.* Depend for their peculiarity on the presence of volatile oil. More stimulating than the bitters, they approach nearly to the diffusible stimulants, with which they might be associated without violence.

Pleasant to the taste and grateful to the stomach.

Employed to cover the taste of other medicines, to render them more acceptable to the stomach, or to increase their stimulant effect. Also used as anti-emetics and carminatives.

4. *Mineral tonics.* These have nothing in common but the tonic property, each having decided peculiarities which serve to distinguish it from the others.

1. *Pure Bitters.*

QUASSIA.

Wood of the *Quassia excelsa* and *Quassia amara.*

Locality and general character of these trees.

Character of quassia as imported and as kept in the shops—weight—texture—colour—odour and taste—solubility in water and alcohol—colour imparted to these menstrua.

Active ingredient, a peculiar principle called *quassin.*

Incompatibles.

Effects on the system, and medical applications.

Powder seldom used. Dose, 20 to 60 grains, 3 or 4 times a day.

Infusion most used. Proportions ʒij. to Oj. of cold water. Dose, f ʒij. 3 or 4 times a day.

Extract, a powerful and excellent tonic. Has more tonic power in a small bulk than any other preparation of the pure bitters. Dose, 2 to 5 grains.

Tincture officinal. Dose, f ʒj. to f ʒij.

SIMARUBA BARK.

Bark of the *Quassia Simaruba.*

Essentially the same in properties as Quassia.

GOLD THREAD.—COPTIS. *U. S.*

Root of the *Coptis trifolia.*

Locality of this plant—general character—appearance of the root.

Closely analogous in properties to Quassia.

GENTIAN.—GENTIANA. *U. S.*

Root of the *Gentiana lutea*, and perhaps other species.

Locality and general character of this plant.

Shape, size, and general aspect of the root—colour externally and within—texture—colour of the powder—odour and taste—relations to water and alcohol.

Medical properties and uses.

Forms of administration numerous. Powder—dose, 10 to 40 grains. Infusion, made with half an ounce to a pint of water—dose, f ʒj. to f ʒij. Compound infusion officinal. Tincture—dose, f ʒj. to f ʒij. Remarks on the danger of giving tonic tinctures. Extract—dose, 5 to 20 or 30 grains.

Several plants belonging to the family of the Gentianeæ have properties analogous to those of gentian. Among these are the *lesser centaury* of Europe, *Erythræa Centaurium*, and the following.

AMERICAN CENTAURY.—SABBATIA. *U. S.*

Sabbatia angularis. Whole plant used.

General appearance—place of growth—season at which collected—sensible properties and relations to water and alcohol.

Medical properties and uses. Given in infusion, made with an ounce to a pint of water. Dose, f ʒij.

COLUMBO.—COLOMBA. *U. S.*

Root of the *Cocculus palmatus.*

General character of the plant, and place of growth.

Mode of preparing the root for market, and whence imported.

Quassia — Lignum

Two varieties, Excelsa & amara, the former is now officinal. The excelsa, is as its name imports a lofty tree inhabiting Jamaica & the Caribbean Isles, where it is called "Bitter Ash" — The amara or Bitter Quassia is a small branching shrub a native of Surinam. Comes in cylindrical billets of various sizes, from one inch to a foot in diameter, (looks to me like logs of Lyca hion) wood yellowish — Purest of the pure bitters. inodorous, & not excelled in the intensity & permanency of its bitter taste — Yields all its active properties & yellow color to water & alcohol — Active ingredient, Quassin — Nitrate of silver & acetate of lead, alone of all the reagents in common use, produce precipitates with its solution — It is one of the best of the tonics — Given in debilitated state of digestive organs — Infusion most convenient. Zij to Oj of water. Extract has advantage of great tonic power in small bulk — gss ij c. v. Dose of powder Ziss c zj — Tincture f Zij c ij

Simaruba Bark — Dr Wood thinks it might be abolished from the dispensatory, without its loss being felt

Gold Thread — Coptis trifolia — Radix

Evergreen resembling Strawberry plant in size & aspect — Native of northern latitudes abounds in Canada & New England, inodorous, purely bitter, yields virtues to water & alcohol, forming bright yellow Tinctures — Med. prop. similar to Quassia — Dose powder gr x c xxx Tinct f zj

Gentian — Gentiana lutea — Radix

Thick long branching root, erect stem rising to height of 3 or 4 feet — Grows among mountains of Europe & is imported from Germany. Spirally twisted roots, with annular ones to distinguish it when met with. grayish brown externally yellow or red dish within, soft & spongy texture. Odor the feeble is decided & peculiar ~~odor & taste~~ taste nauseously bitter & not nauseous powder yellowish, yields virtues to water & alcohol, Gentianin active ingredient liable to ferment owing to the sugar in it. Deriving its name from Gentius king of Illyria — Possessing in high degree the tonic powers of the simple bitters, in large doses apt to oppress the stomach in prescribing, the condition of the stomach & the nature of the disease must be considered — Acetate of lead alone produces precipitate — An ingredient of the celebrated Portland powder — Dose tinctures, apt to produce nausea

abundant in quinia & cinchonia -

Pale Barks are distinguished by absence of quinia cinchonia - The other varieties differ little except in proportion of quinia & cinchonia - Gum which is found in pale kind is the only constituent which is not found in all

Cinchonia is white chrystalline substance soluble ~~partly~~ in boiling water, insoluble in cold water very soluble in boiling alcohol, slightly so in ether & the fixed & volatile oils & them three last are very bitter - Its alkaline character very decided, neutralising the strongest acids - Salts of cinchonia are soluble in hot water or alcohol - Sulphate is the only salt which has been employed to any extent in a seperate state

Quinia is whitish & flocculent not crystalline, is more bitter than cinchonia, almost insoluble in water, very soluble in alcohol, ether, fixed & volatile oils. Unalterable in the air not even like cinchonia absorbing carbonic acid - Only important artificial salt is the Sulphate. This alkali cannot be procured from the Calisaya varieties of the bark for the process see the Dispensatory. p. 962 - It becomes, strongly by exposure to the air - is but slightly soluble in water, very soluble in alcohol tho' it may be dissolved in water by the addition of a little sulphuric acid - Neither purges or constipates as the bark sometimes does. Impure Sulph. can be detected by placing the suspected article, ~~on~~ paper, if pure it will all be removed, if impure a residue will be left - Med. prop. & uses - When taken into stomach it excites sense of weight & uneasiness in Epigastrium attended by some gastric & intestinal irritation, its effects on the nervous system proved by singing in ears & deafness, Besides its tonic property it appears some other & specific effect on the system, by which when during the intervals of paroxysms of intermittents it breaks up the chain of morbid associations. It may used in all morbid conditions in which a permanent corroborant effect is desired; but before prescribing however it is necessary to ascertain that there is no local excitement or inflammation which might be aggravated by its use - May be used to advantage in all cases where the disease puts on the intermittent form, Dr Wood believes it would prevent the occurrence of the fever altogether (in "general observations" on tonics page 115 -

It is sometimes considered wrong to administer bark when there is any coexisting visceral disease - Dr W thinks otherwise & says that the viscera

Shape, size, general aspect, and consistence of the pieces—difference between the cortical and central portion—colour—odour—taste—colour of the powder—relations to water and alcohol.

Active ingredient, a peculiar principle called *colombin*. Besides this, a large proportion of starch, according to Planche 33 per cent.—also mucilage, and a little volatile oil.

Nothing incompatible chemically, which is likely to be associated with it in prescription, unless, perhaps, iodine.

Medical properties and uses.

Frequently combined with other tonics, purgatives, aromatics, and antacids.

Used in powder, infusion, and tincture. Dose of the powder, 10 to 30 grains—of the infusion made in the proportion of ℥ss. to Oj., from f℥j. to f℥ij.—of the tincture, f℥j. to f℥ss. The infusion soon undergoes spontaneous change from the presence of starch.

Numerous other bitters analogous to those mentioned; but at present little used, and not wanted.

2. *Bitters of peculiar or modified properties.*

These may be subdivided into 1. those having a peculiar alkaline principle, as Peruvian bark, 2. those in which the bitter principle is modified by combination with a sedative principle, as wild-cherry bark, and 3. those in which it is associated with a stimulant principle, usually a volatile oil, as serpentaria.

PERUVIAN BARK.—CINCHONA. *U. S.*

Bark of different species of *Cinchona*—natives of the Andes—and extending from La Paz in Bolivia, to Santa Martha on the North Coast.

Not certainly known from what particular species the different varieties of bark are derived. The classification of the British Pharmacopœias in this respect entirely erroneous.

Three officinal varieties; 1. *pale bark* (cinchona pallida), 2. *yellow bark* (cinchona flava), and 3. *red bark* (cinchona rubra).

All the varieties strictly officinal are brought from the Pacific Coast of South America. Those brought from the northern ports are considered inferior, and thrown together under the name of *Carthagena barks*.

1. *Pale bark*. Embraces the commercial varieties called Loxa and Lima barks. Named from the colour of the powder. Called *gray bark* by the French.

Description of the pale bark—colour of the powder—sensible properties.

2. *Yellow bark*. This is the variety denominated in commerce *Callisaya bark*. Wholly different from the common yellow, which is a variety of Carthagena bark, and should not be considered as properly officinal. Called by the French writers *royal yellow bark*.

Description of the yellow or Callisaya bark. Two varieties, the *quilled* and the *flat*—differences between them—colour of the powder—sensible properties of yellow bark.

3. *Red bark*. Quilled and flat—description—colour of the powder—sensible properties.

Of these varieties the most efficient are the yellow and red—the least disagreeable, the pale.

Carthagena barks. Varieties—signs by which distinguished.

Active ingredients of bark, two alkaline principles called *quinia* and *cinchonia*, combined with kinic acid. Other principles of bark.

Difference in composition between the pale, yellow, and red barks.

Quinia. Description of its properties—outline of the mode of preparing it—sulphate of quinia one of the officinal preparations of bark.

Cinchonia. Differences between it and quinia.

Both alkalies form salts of difficult solubility with tartaric, oxalic, and gallic acids.

Incompatibles. All substances which occasion precipitates with bark are not incompatible in prescription, as the substance precipitated is frequently not the active principle. The alkalies and alkaline earths and astringent infusions, may be considered as incompatible—the former precipitating the alkaline principles in a separate state, the latter forming with them insoluble compounds.

Effects of bark on the system. At the same time that it is tonic, it exerts an influence peculiar to itself, and this influence is found to be incompatible with the existence of periodical or intermittent diseases. There are, therefore, two different and highly important properties of bark, therapeutically considered, viz. the anti-intermittent and tonic. Explanations on this point.

Diseases to which bark is applicable as anti-intermittent, and speculations on its mode of action. Therapeutical applications as a tonic.

Bark most powerful in substance. Disadvantages of this mode of administration. Only given in cases where a powerful anti-intermittent operation is required. Power increased by combination with opium and aromatics. Dose, ℥j. repeated so frequently that from ℥j. to ℥ij. may be taken between the paroxysms. Best mode of administering bark in sub-

stance. Objections to wine as the vehicle. Sometimes used in quilted jackets. If it purge, combine with opium, if it constipate, with rhubarb.

Infusion. ℥j. to Oj. of boiling water.

Decoction. ℥j. to Oj.—boil ten minutes in a covered vessel. Objections to both these forms. Dose, f℥ij. 3 or 4 times a day, or in acute cases every hour or two.

Cold infusion with sulphuric acid. A good form—℥j. to Oj., with f℥j. of aromatic sulphuric acid. Advantages. Dose, f℥ij.

Tincture. Very strong. Dose, f℥j. to f℥ss.

Compound tincture. Ingredients. Advantages. Dose, f℥j. to f℥ss.

Extract. Mode of preparation. Dose, 10 to 30 grains.

Sulphate of quinia. Value—mode of preparation—character of crystals—composition—effects of exposure—taste—solubility in water, alcohol, and dilute acids.

Comparative powers with those of bark itself. In what respects preferable.

Ten to 14 grains equivalent to ℥j. of good bark.

Dose, as anti-intermittent, 1 grain every hour or two. In intermittent diseases, 12 to 18 grains in the interval between the paroxysms. In enema, 12 grains, with half a grain of opium, every 6 hours. Endermic application. As a mere tonic, one quarter to half a grain, 3 or 4 times a day.

Given in pill or solution. Preparation of these.

Impure sulphate of quinia. Source—character—uses. Dose, double that of the pure. Modes of administration the same.

Adulterations of sulphate of quinia, and mode of detecting them.

Sulphate of cinchonia. Character as a remedy. Dose and mode of administration the same as those of sulphate of quinia.

Various substitutes for Peruvian bark have been proposed, among which may be mentioned the *Caribean bark*, the barks of the *Swietenia febrifuga* and *S. Mahogani*, the *horse-chesnut bark*, that of different species of *willow*, and the bark of the common *dogwood* of this country. None used to any extent at present. The dogwood as a native of this country merits a brief notice.

DOGWOOD BARK.—CORNUS FLORIDA. *U. S.*

General character of the tree. Bark from the stem and root. The latter preferred.

Aspect of the bark—colour of the powder—odour—taste—relations to water.

Used in powder or decoction. Dose and mode of treatment similar to those of Peruvian bark.

WILD-CHERRY BARK.—PRUNUS VIRGINIANA. *U. S.*

Bark of the *Prunus Virginiana*, an indigenous tree. General character of the tree. The fruit and its uses.

Bark obtained from the stem, branches, and root.

Appearance of the bark—colour—colour of the powder—odour—taste—relations to water and alcohol—colour of the infusion and tincture—effects of heat upon them.

Active principle hydrocyanic acid, with tannin and perhaps bitter extractive.

Taken internally, it is tonic to the digestive organs, and at the same time sedative in its direct general influence. Applicable to diseases in which debility co-exists with irritation of the circulatory and nervous systems. Diseases in which it is employed.

Used in powder and cold infusion, generally in the latter form. Dose of the powder ʒss. to ʒj., of the infusion f℥ij., 3 or 4 times a day, or more frequently.

CHAMOMILE.—ANTHEMIS. *U. S.*

Flowers of the *Anthemis nobilis.*

Character of the plant, and place of growth.

All parts of the plant are active, but the flowers are most agreeable in flavour, and exclusively officinal. Imported from Europe.

Character of the flowers—difference between the single and double—sensible properties—relations to water and alcohol.

Active principles, bitter extractive and volatile oil.

Effects on the system, and medical uses.

As a tonic, best employed in cold infusion. Dose, f℥ij. several times a day. As adjuvant to emetics, in hot infusion. Large draughts.

The docoction and extract objectionable preparations. The powder may be used in the dose of ʒss. to ʒj.

THOROUGHWORT.—EUPATORIUM PERFOLIATUM. *U. S.*

Often called *boneset.* An indigenous perennial herb. General character of the plant. Whole herbaceous part used.

Sensible properties, and relations to water and alcohol.

by first curing the fever – Red bark is
the best in intermittents, the decoction of which is of a
Salmon color – Pale in intermittents, is apt more
or less, according according to circumstances –
An extract is prepared by evaporating an infu
sion & decoction separately to the consistence of honey
& then mixing the two – – –
Decoction always turbid – owing to tannate of Stud.
Sulph is chiefly sparingly a disulphate
Considered the active intermittent prop of bark as
residing in this sulph.

Quinia increases the spinal force "Jackson" –

Dogwood *Cornus Floridus* Cortex

Small indigenous tree, 15 or 20 feet high, slow growth, spreading
branches, drupes ripen in September – flowers in May, all
over the United States, bark rolled, pawn col^d epidermis
reddish gray powder, odor feeble, taste bitter astringent & slight
ly aromatic, yields virtues to water & alcohol, flowers same
bitter taste tho' not officinal – before introduction of quinia
sometimes substituted for Peruvian bark in intermittents, dried
bark not so likely to affect the stomach –

Wild Cherry bark *Prunus Virginiana* Cortex

In Ohio it is one of the largest productions of the forest, smaller
in Atlantic States, rough blackish bark & the circular in place
of the longitudinal fibres will serve as mark of distinction
flowers in May, drupes when ripe are size of pea & blackish
purple color & is much used & important flavor to spirituous liquors
as it is somewhat astringent & bitter – bark deteriorates by keeping that
from root is most active – Found in shops destitute of epidermis, lively
cinnamon color brittle reddish gray fracture, pawn col^d powder
when fresh emits odor like peach leaves, aromatic, with flavor of
bitter almonds, yields virtues to water, (which should be cold or spt
of volatile oil) producing clear reddish infusion like Madeira
wine – The volatile oil may be obtained by distilling pawn portion
of water in several portions of bark successively is of light straw colo
properties like those of the volatile oil of bitter almonds – two drops will
kill a cat. The active ingredient is hydrocianic acid. Recommend
wild cherry bark very highly in Phthisis – used chiefly in cold infu
sion –

Chamomile *Anthemis nobilis* – Flores –

Several species, the unofficinal may be distinguished by their
want of smell – Herbaceous plant perennial root native of
Europe, pruning fragrant odor aromatic taste – The flowers
become double by cultivation, but as the disc contains the essen
tial properties in the greatest degree & as this disc is not fully de
veloped in the double flowers the single of course are more powerful
The whitest flowers should be gathered – Still white infuse

Olea Volatilia –

Sometimes called distilled from much in which they are procured, sometimes essential, or forming in concentrated state the properties of the plants from which they are procured – They exist in all odoriferous vegetables, sometimes in one part sometimes another, & sometimes two varieties found in same plant but in different parts – Of various colors, usually yellowish, strong odor similar to, but less agreable than plant from which they are procured, taste hot & pungent, the greater number lighter, but some heavier, than water – Rise in vapor at ordinary temperatures & by heat are completely volatilized – Boiling point various, generally as high as 320° F. – Most of them mix readily with the vapor of boiling water – Heated in open air they take fire, burn with bright flame & much smoke – By exposure, they absorb oxygen, becoming darker, more consistent less odorous & all at last converted into resin, influence of light hastens this change – Very slightly soluble in water, agitated with this fluid they render it milky but seperate on standing leaving water impregnated with their odor & taste, Trituration with sugar or magnesia renders them more soluble, presenting more extensive surface to action of solvents, very soluble in alcohol, & more so as it is pure from water – Readily dissolved by ether – dissolve fixed oils, soft resins camphor & some of the vegetable alkalies – Like fixed oils they are composed of two distinct principles, solid matter called stearoptene & fluid matter eleoptene – The ultimate constituents are carbon oxygen & hydrogen, some as oils of Turpentine & Copaiba have only carbon & hydrogen – Often adulterated, with fixed oils or resinous substances or alcohol, fixed oils leave a permanent stain on paper which the volatile oils disappear entirely when exposed to heat, Fixed also are not so soluble in alcohol – Dilute alcohol by shaking with water, alcohol will unite with water, & the oil accompy her & part – Resins will be deprived if triturated with alcohol. Procured by distillation

Oils heavier than water – Gaultheria 1.17 – Sassafras 1.094 – Cinnamon
Cloves Pimento –
Dose 3 ss to 6 gtt. Exceptions Cubebs 10 to 20 Turpentine 5 to 20 &
Ol. Succini (Amber) 5 to 15 – Copaiba 5 to 15

Oils heavier than water – Sassafras one of the heaviest 1.094
Cinnamon, Cloves, Pimento & gaultheria or Partridgeberry

Dose generally from 3 to 10 drops – Cubeb is an exception for the dose is from 10 to 20 drops – & Ol Turpentine 5 to 20 drops but

Medical properties and uses.

As a tonic, used in powder or cold infusion. Dose of the powder, 20 or 30 grains, of the infusion, f℥ij. repeated 2, 3, or 4 times daily.

As a diaphoretic, used in the state of warm infusion. Dose, f℥ij. every 2 or 3 hours.

As emetic, a small bowlful of the infusion may be taken warm.

VIRGINIA SNAKEROOT.—SERPENTARIA. *U.S.*

Root of the *Aristolochia Serpentaria*, and perhaps other species of Aristolochia.

The plant indigenous, herbaceous, perennial. General character—place of growth—place where the root is collected.

Character of the root—colour—colour of the powder—odour—taste—relations to water and alcohol.

Active ingredients, a bitter principle and volatile oil.

Adulterations.

Effects on the system—medical uses.

Used in powder and infusion. Dose of the former, 10 to 30 grains, of the latter, f℥j. to f℥ij. every 2 or 3 hours. Tincture officinal, dose, f℥j. to f℥ij. Decoction objectionable.

Bitters resembling Virginia snakeroot in combining a bitter principle with volatile oil, and possessing stimulant properties, are *wormwood* (Artemisia Absinthium), *tansy* (Tanacetum vulgare), and *horehound* (Marrubium vulgare). Remarks on each of these. None of them much used.

MYRRH.—MYRRHA. *U.S.*

Exudation from ~~the *Amyris Myrrha*~~—the *Balsamodendron Myrrha* ~~of some writers.~~

Character of the plant, and place of its growth.

Two varieties of myrrh, India and Turkey, the former from the East Indies, the latter from the Levant, both probably originally from the same source. Difference between these varieties.

Properties of myrrh—size and shape of the pieces—translucency—colour—colour of the powder—fracture—odour—taste—chemical nature—relations with water and alcohol—influence of alkalies on its solubility—result of distillation.

Active principles, resin and volatile oil.

Effects on the system, and therapeutical application.

Used in powder, pill, emulsion, and tincture. Dose in substance, 10 to 30 grains—of the tincture f℥ss. to f℥j. The tincture seldom used internally. Reason why the tincture of myrrh and other gum-resins are better made with alcohol than with diluted alcohol.

ANGUSTURA BARK.—ANGUSTURA. *U.S.*

Bark of the *Gallipea officinalis*, a small tree growing in South America.

Whence brought—shape and size of the pieces—colour—colour of the powder—smell—taste—relations to water and alcohol.

Active constituents, bitter extractive and volatile oil.

Effects on the system, and therapeutical application.

Used in powder, infusion, and tincture. Dose of the powder 10 to 30 grains, of the infusion f℥ij., of the tincture f℥j. to f℥ij.

False Angustura bark described, and its poisonous properties alluded to. Its active ingredient, an alkaline principle called *brucia*.

CASCARILLA. *U.S.*

Bark of the *Croton Eleutheria*, and possibly of the *C. Cascarilla*—shrubs growing in the West Indies.

Whence imported. Two varieties. General characters, as size, shape, colour, &c.—smell—odour when burnt—taste—relations to water and alcohol.

Active ingredients, extractive and volatile oil.

Medical properties and uses.

Used in powder and infusion. Dose of the former 20 to 30 grains, of the latter f℥ij.

3. *Aromatics.*

Substances having a fragrant odour, and a pleasant spicy taste, with little admixture of disagreeable flavour. Owe their distinguishing properties to volatile oils.

Volatile, essential, or distilled oils.—Odour—taste—volatility—point of ebullition—how affected by boiling water—inflammability—solubility in water, alcohol, ether, and fixed oils—composition—effects of exposure—adulterations and modes of detection—mode of preparation.

Aromatics more stimulant than tonics in general—more local in their action than the diffusible stimulants—produce a peculiar cordial influence on the stomach—obviate sickness—expel flatulence—relieve spasmodic pains of the stomach and bowels.

Often combined with other medicines, which they render more acceptable to the palate and stomach, and less disposed to gripe.

Decoctions and extracts of aromatics objectionable preparations.

ORANGE PEEL.—AURANTII CORTEX. *U.S.*

Oranges, fruit of the *Citrus Aurantium*—two varieties—difference in the rinds—virtues in the outer portion.

Sensible properties of orange peel and relations to water and alcohol.

Usually employed in infusion, made in the proportion of half an ounce to a pint.

The confection and distilled water are officinal preparations. Uses of these.

CINNAMON.—CINNAMOMUM. *U.S.*

Prepared bark of the *Laurus Cinnamomum.*

General character of the tree—place of growth—mode of preparing the bark. Two commercial varieties—*Ceylon cinnamon* and *China cinnamon* or *cassia.* Whence imported.

Properties of the bark—shape—size—colour—colour of the powder—consistence—fracture—odour—taste. Difference in these respects between the two varieties.

Active principle, volatile oil, with tannin. Two varieties of the oil. Sensible properties of oil of cinnamon.

Medical uses those of aromatics in general. Especially applicable to cases requiring astringents.

Dose of the powder, 10 to 20 grains. In infusions of other medicines, employed in the proportion of one or two drachms to the pint.

Cinnamon water—Aqua Cinnamomi—mode of preparing—uses.

Tincture and compound tincture of cinnamon, officinal. Dose f℥j.

Cinnamon enters into numerous officinal preparations.

CANELLA. *U.S.*

Bark of the *Canella alba*—a native of West Indies—derived from the branches, freed from the epidermis—shape and size of the pieces—fracture—colour—colour of the powder—odour—taste—relations to water and alcohol.

Active ingredients, volatile oil and bitter extractive.

Medical uses—ingredient in the *Powder of Aloes and Canella.*

Winter's bark—from Drymis Winteri—place of growth—similar in properties to canella—never used here.

CLOVES.—CARYOPHYLLUS. *U.S.*

Dried unexpanded flower-buds of the *Eugenia caryophyllata.*

General character of the tree and place of growth.

Properties of cloves—shape—size—colour—colour of the powder—odour—taste—relations to water and alcohol.

Chief active ingredient, volatile oil, called oil of cloves—Oleum Caryophylli—mode of preparation—sensible properties—specific gravity.

Used in powder, infusion, and oil. Dose of the powder, 5 to 10 grains—of the infusion, made with two drachms to the pint, f℥ij.—of the oil, 2 to 5 drops.

Cloves enter into numerous officinal preparations.

NUTMEG.—MYRISTICA. *U.S.*

Kernel of the fruit of the Myristica moschata.

General character of the tree, and place of growth—description of the fruit—mode of preparing the *mace* and nutmeg.

Shape of nutmegs—size—character of the surface—colour—appearance when broken—mode of reducing them to powder.

Interesting ingredients, a volatile and a fixed oil, the former of which is the active principle. Mode of preparing the *volatile oil*—colour—specific gravity.

Fixed oil called *oil of mace*—mode of obtaining it—colour and consistence—uses.

Mace—shape—colour—odour—taste—ingredients as in nutmegs—uses.

Nutmegs said to combine narcotic with aromatic properties.—Dose of the powder, 5 to 20 grains—of the volatile oil, 2 or 3 drops.

Orange Peel Aurantii Cortex

Fruit of Citrus Aurantium - Rind double, the outer part contains the volatile oil fruit sweet. In the other variety or the Seville orange is sour and bitterish - The Havana oranges are sweetest & best flavored of them we get. Rind yields soluble properties to water & alcohol - chiefly used with other medicines as bitters &c - As tonic the rind of Seville orange is best Confection & distilled water, chiefly used as grateful aromatic vehicles

Cinnamon Laurus Cinnamomum Cortex

Twenty to 30 ft high thick rough scabrous bark, native of Ceylon & neighboring islands, bark is pulled when bush reaches height of 4 or 5 feet - That exported from China is called Cassia all kinds indeed entered at our Custom House by that name. Ceylon cinnamon comes in numerous quills large enclosing smaller Chinese cinnamon or cassia comes in single tubes - Yields virtues wholly to alcohol & partially to water - The oil of cinnamon has not the astringency of the substance but is in other respects similar - Among the most grateful and efficient of the aromatics - Carminative & astringent also owing to Tannin being one of its active principles - Cinnamon water prepared by addition of magnesia to water & then filtering the solution - Should be used with caution in all inflammatory diseases

Canella — Canella alba Cortex

Erect tree 50 ft high branching only at the top, whitish bark, native of west Indies, Bark of branches is the part employed in Medicine after removal of Epidermis - Comes dry partially quilled & of various sizes, pale orange yellow color, aromatic odor similar to cloves & warm bitterish very pungent taste brittle fracture & gives a yellowish white powder. Yields virtues partly to boiling water & wholly to alcohol forming bright yellow tinctures Acts as local stimulant & gentle tonic & is useful as addition to tonic or purgative medicines in debility of digestive organs - Employed as condiment by West Indians in soups -

of Malabar Capsules when ripe are picked & dried over a gentle fire, & separated from foot stalks by rubbing with hands. The seeds being most aromatic should be separated from capsules - Odor fragrant, taste warm, highly aromatic. Seeds virtues (which depend on volatile oil) to water & alcohol - The oil is colorless of a weak odor, strong burning camphorous, slightly bitter taste, & does not keep long - Seeds kept best in capsule - Are heating & stimulating than some of the aromatics - Employed as ingredient in other preparations

Fennel Seed Foeniculum Semina

Oblong, oval flat on one side convex on the other 3 or 4 lines in length, of grayish green color aromatic odor & taste dependent on vol. oil, yield virtues to hot water, more abundantly to alcohol, oil obtained by distillation, colorless or yellowish, Specif. grav not uniform - Principally as carminative

Caraway Carum Carvi Semina

Essential oil afforded largely by distillation yield virtues readily to alcohol, slowly to water. Carminative tho' volatile oil is most employed.

Coriander Coriandrum Semina -

All parts of the fresh plant are expendingly fetid when bruised, while the seeds become fragrant by drying Volatile oil obtained by distillation, yields virtues to alcohol by maceration less readily to water - Have ordinary virtues of aromatics

Anise Anisum Semina

Support to increase the secretion of milk, much used to flavor liquors - Carminative

Lavender Lavandula Flores

Spikes should be cut when they begin to bloom - Aromatic stimulant & tonic, useful in certain conditions of Nervous debility, but seldom given in crude state

Compound spirit of lavender, preparation - this is a delightful compound of spices, much used as an adjuvant & in gastric emazing flatulence &c - 30 drops on lump of Sugar

Rosemary Rosmarinus Carminat

Balsamic odor, taste bitter & camphorous, quite stimulant & perhaps emmenagogue

BLACK PEPPER.—PIPER. *U.S.*

Dried berries of the *Piper nigrum*.

General character of this plant and place of growth. The berries deprived of their outer covering, constitute *white pepper*.

Constituents of black pepper, volatile oil, an acrid concrete oil, and a white crystalline principle called *piperin*, formerly thought to be the active principle, but now known to be inert when pure.

Therapeutical uses of black pepper.

CUBEBS.—CUBEBA. *U.S.*

Dried fruit of the *Piper Cubeba*, a vine growing in the East Indies.

Shape and size of Cubebs—colour and character of the surface—internal structure—odour—taste.

Active ingredient, a volatile oil, obtained by distillation. Sensible properties of the oil—consistence.

Effects of time and exposure on cubebs. The powder an improper form for keeping.

Medical properties, those of an aromatic and diuretic—effect on the urine—therapeutical applications.

Dose of the powder, ʒss. to ʒiss. 3 or 4 times a day—of the volatile oil, 10 to 20 drops.

PIMENTO.—PIMENTA. *U.S.*

Berries of the *Myrtus Pimenta*—a handsome tree growing in the West Indies, particularly in Jamaica, and hence called *Jamaica pepper*.

Size, shape, and sensible properties. Origin of the name of *allspice*.

Active properties supposed to reside in a volatile and fixed oil. Colour of the volatile oil. Dose of the oil, 3 to 6 drops.

CARDAMOM.—CARDAMOMUM. *U.S.*

Fruit of the *Alpinia Cardamomum*—a plant growing in Malabar.

Shape and size of the fruit—colour—relative virtues of the capsule and seeds—the former rejected in powdering—odour—taste—relations to water and alcohol. The virtues of the medicine reside in a volatile oil. It should be kept in capsules, not powdered.

Much used as an addition to other medicines, particularly infusions, in the proportion of one or two drachms to the pint. Enters into numerous officinal preparations.

Compound tincture of cardamom, one of the most agreeable aromatic preparations. Dose, fʒj.

FENNEL SEED.—FŒNICULUM. *U.S.*

Seeds of the *Anethum Fœniculum*—a perennial herb—native of Europe—cultivated in this country. The whole plant possessed of aromatic properties.

Shape and size of the seeds—colour—relations to water and alcohol.

Volatile oil—*Oleum Fœniculi*—mode in which obtained—colour—specific gravity.

Infusion prepared in the proportion of 2 drachms to a pint.—Dose of the oil, from 5 to 15 drops.

Other Aromatic Seeds, less used.

CARAWAY—CARUM, *U.S.*, from the *Carum Carui;*

CORIANDER—CORIANDRUM, *U.S.*, from the *Coriandrum sativum;* and

ANISE—ANISUM, *U.S.*, from the *Pimpinella Anisum*.

These are used in the same way, and for the same purposes, as the preceding. The oil of caraway is occasionally used in a dose varying from 1 to 10 drops.

An aromatic fruit called *star aniseed*, derived from the *Illicium anisatum* of China, is often substituted for the true aniseed.

LAVENDER.—LAVANDULA. *U.S.*

Flowering spikes of the *Lavandula vera*—a native of the South of Europe, but cultivated in our gardens.

Their virtues reside in a volatile oil, which is separated by distillation, and used as a perfume. Dissolved in alcohol, it forms *spirit of lavender*. Uses.

Compound spirit of lavender—preparation—uses.—Dose, fʒss. to fʒj.

ROSEMARY.—ROSMARINUS. *U.S.*

Tops of the *Rosmarinus officinalis*—a shrub growing on the shores of the Mediterranean.

Their virtues reside in a volatile oil, which is separated by distillation, and is colourless.

The spirit of rosemary and the volatile oil are officinal.—Chiefly used as external remedies.

PEPPERMINT.—MENTHA PIPERITA. *U.S.*

Whole herb officinal—native of Europe—cultivated and naturalized in this country.

Description of the plant—sensible properties—relations to water and alcohol.

Volatile oil—mode in which it is prepared—colour, odour, and taste—specific gravity—adulteration with alcohol—mode of detecting the adulteration.

Uses as a remedy, internal and external. The infusion made in the proportion of from 2 to 4 drachms to a pint.—Dose of the oil, 1 to 3 drops—mode of administering it.

Essence of peppermint. Mode of preparing it.—Dose, 10 to 20 drops.

Peppermint water—Aqua Menthæ Piperitæ, U.S.—Mode of preparing it—uses.

SPEARMINT.—MENTHA VIRIDIS. *U.S.*

Common mint—a native of Europe—cultivated and naturalized here. How distinguished from the former species. In nature, properties, and uses, closely allied to it. Preparations the same, and given in the same dose.

Other herbaceous Aromatics.

PENNYROYAL.—HEDEOMA. *U.S.* Botanically *Hedeoma pulegioides*—an indigenous herb—wholly different from the European pennyroyal, which is the *Mentha Pulegium*, and is not used here. In virtues, medical applications, and pharmaceutical treatment, similar to the preceding plants.

BALM.—MELISSA OFFICINALIS. An herbaceous plant—native of the south of Europe—cultivated in the United States. When fresh, aromatic—scarcely so when dried—used in infusion as drink in fevers.

ORIGANUM. Botanically *Origanum vulgare.* Common marjoram. Indigenous in Europe and the United States. Possessed of the usual aromatic properties, which reside in a volatile oil. The plant little used. The oil chiefly employed as an external application.

PARTRIDGE-BERRY.—GAULTHERIA. *U.S.* Botanically *Gaultheria procumbens*—an evergreen, indigenous plant. All parts aromatic—virtues in a volatile oil, which is separated by distillation. Heaviest of the volatile oils. Used to impart flavour. An ingredient in the syrup of sarsaparilla of the United States Pharmacopœia.

GINGER.—ZINGIBER. *U.S.*

Root of the *Zingiber officinale*—an herbaceous perennial—indigenous in the East Indies—cultivated in the West Indies.

Character of the recent root—mode of preparing it for market—commercial varieties. Distinguishing characters of the *black* and *white* or *Jamaica* ginger.

Odour of ginger—taste—relations to water and alcohol—effects of time and exposure.

Chief ingredients, volatile oil, an acrid resin, extractive matter, and starch. Virtues in the first two.

Medical uses, internal and external.

Employed in powder, infusion, tincture, and syrup. Dose of the powder, 10 to 30 grains—of the infusion, made in the proportion of an ounce to a pint, f℥ij.—of the tincture, f℥j. or f℥ij. The syrup used chiefly for its flavour.

SWEET FLAG.—CALAMUS. *U.S.*

Root of the *Acorus Calamus*—an indigenous plant, growing also in Europe and Asia.

Character of the root—state in which it is kept in the shops—sensible properties—virtues in a volatile oil.

Uses, modes of administration, and doses, similar to those of ginger.

4. *Mineral Tonics.*

IRON.—FERRUM. *U.S.*

Relative importance. In the red globules of the blood. Its preparations closely analogous in medical effects. Unites tonic and astringent properties. Employed chiefly in reference to the former.

Perceptible effects. In small doses, improves the appetite—promotes digestion—favours more complete chylification, thus rendering the stools less frequent and more solid—renders the blood redder and more coagulable—invigorates the whole nutritive process—renders the pulse rather more frequent and firmer, and increases general warmth—said to act as an astringent on the portal circle and spleen—causes black stools.

Influence on the nervous system—not immediate like that of quinia, but gradual—possibly through increased organic actions.

Tendency of the uterine system.

Long used, induces a plethoric state with tendency to inflammations and hemorrhage.

Peppermint - Mentha Piperita Herba

Perennial herbaceous plant, creeping root erect hairy stems - Odor is penetrating & grateful, resembling Camphor. Taste aromatic warm camphorous, bitterish - Vol: oil obtained by distillation, camphor rises with the oil, Yields virtues to water & more readily to alcohol, grateful aromatic, nausea, flatulence - Oil is of greenish yellow color, distilled, (heavier than water) adulterations with alcohol, detected in the usual way, is only for administration rub it up with Sugar, then dissolve in water. For example dissolve gij in pint of alcohol - Prepared in same way as Cinnamon water (ie Peppermint water) -

Spearmint Mentha Viridis Herba

See opposite page

Pennyroyal Balm &c See opposite page

Ginger Zingiber Radix

Root - dug up when a year old, cleaned, scalded in boiling water to prevent germination, then rapidly dried, in this state called Black or East India Ginger Jamaica or white ginger the roots are deprived of epidermis & dried in the sun. Preserve made by boiling young roots in Syrup. This is most valuable. The whole root is about one inch in length, externally light ash color, circular rugae, internally flushy & yellowish white - East Indian or black ginger, has dark ash colored, wrinkled epidermis, internally whitish farinaceous portion, odor aromatic & penetrating, taste spicy hot & biting - Yields virtues to water & alcohol, loses properties when long exposed - Grateful stimulant & carminative - when chewed irritates the mouth & produces copious flow of saliva. Externally rubefacient -

Sweet Flag Calamus Radix

Perennial jointed root several feet in length - Roots washed freed from fibres & dried, shrink in drying but improves by it in odor & taste - Odor strong & fragrant taste warm bitterish & aromatic - Yields active principles to boiling water, Volatile oil, is at first yellow, then red stimulant tonic & carminative -

stricture of urethra, also in passive hemorrhages as a styptic in cancer.

Tartrate of Iron & Potassa — *Ferri et Potassae Tartras*

Take ferrocisp. carb. of iron ℥ij Sup. Tart. Potass ℥ij Distilled water one pint — Dissolve powder of sweetish & greenish taste becomes moist in a damp atmosphere & is soluble in 7 times its weight of water. Incompatible with astringent vegetable infusions, strong acids, lime water & acetate of lead — One of the most agreeable preparations of iron, from its slight taste & easy solubility it is one of best of the ferruginous preparations for exhibition to children

Phosphate of iron — *Ferri Phosphas*

Take of sulphate of iron ℥ss Phos. Soda ℥vij Water 1 gallon
The resulting compound is an insoluble powder of a bright slate color — It has the general properties of the chalybeates used in amenorrhoea & some forms of dyspepsia

Iodide of Iron — *Ferri Iodidum*

Take Iodine ℥ss Rasped Ferri (perfectly pure) ℥ss distilled water f℥xiij — By standing some iodine is set free & oxide of iron precipitated — This defect is remedied by keeping iron filings in it — Greenish black color & austere astringent taste. Acts as tonic & alterative when it is desirable to stimulate the absorbent system

Sulphate of Copper — *Cupri Sulphas* — **Blue Vitriol**

It occasionally exists in nature & generally in solution in the waters which flows thro' the mines — Obtained in 3 ways — 1st by evaporating these waters, 2d by roasting the native sulphuret, when by absorbing oxygen it passes into the sulphate (the roasted mass lixiviated & evaporated to form it into crystals) 3d or French method is by wetting sheets of copper, sprinkling them with sulphur, heating them to redness, & while hot plunging them into water — Sulphuret is first formed which by action of the heat & air passes into a sulphate — Crystals obtained as above.
Generally obtained in this country by direct combination of old scraps of copper with sulphuric acid — Crystals are large, transparent — rhomboidal prisms, color a rich deep blue, effloresces slightly in air, chemical nature one equiv. protox. copper, 1 of sulph. acid & 5 of water — Soluble in four parts cold & two of boiling water, insoluble in alcohol, strong metallic styptic taste, when heated it first melts in its water of crystallization then dries & becomes white next undergoes igneous fusion, & if further heated loses its acid protoxide being left. Incompatible, as alkaline carbonates & many important salts such as ba. ac. acetate & sub acet of lead, acet. of iron nitrate of silver, corrosive chloride of mercury tartrate of potassa & muriate of lime & all astringent vegetable infusions.
In small doses astringent & tonic in large may be prompt emetic, which effect is useful in discharging poisons from stomach particularly opium also in croup (discharging the false membrane). Used in chronic diarrhoea. Externally used as a stimulant to ulcers, as an escharotic has a styptic. As a collyrium in purulent ophthalmia of infants. In case of poisoning by copper the antidote is the white of eggs.

Used in dyspepsia without inflammation, and in all complaints consequent upon or sustained by debility of stomach. Also in chronic diseases of general debility, and particularly when associated with disorders of menstruation. In amenorrhœa when not attended with excitement. In deficient sanguification. In various nervous affections, as neuralgia and epilepsy.

Acts probably through the medium of the circulation.

Numerous preparations—unnecessarily multiplied.

Uncombined iron not destitute of activity. Possibly oxidized in the stomach. Used in the form of *filings—ramenta ferri*. Mode of purifying. Dose, 5 to 20 grains.

Scales of iron. Squamæ ferri. Mode of preparing—chemical nature—mode of purifying—colour of the powder—mode of preparing the powder—dose, 5 to 20 grains.

Prepared Carbonate of Iron.—Ferri Carbonas Præparatus, U.S.—Rust of iron.—Rubigo ferri. Mode of preparing—chemical nature—colour—taste—insolubility in water. Uses and dose the same as those of the following.

Precipitated Carbonate of Iron.—Ferri Carbonas Præcipitatus, U.S. Mode of preparing—chemical changes and nature. Form—colour—taste—smell—insolubility in water—solubility in water with carbonic acid. One of the best chalybeates. Preferable to the preceding. Mild and effectual. Dose, 5 to 20 grains, in pill or powder—in neuralgic cases from ʒss. to ʒj. 3 times a day and gradually increased.

Protocarbonate of Iron.—Vallet's Ferruginous Pills. Mode of preparing—chemical composition—influence of saccharine matter in their preservation. Advantages over other chalybeates. Dose.

Sulphate of Iron.—Ferri Sulphas, U.S.—Green vitriol—in commerce *copperas.* Mode of preparing—chemical nature—colour of crystals—taste—effects of exposure—solubility in water—insolubility in alcohol—effects of exposure on the solution—effects of heat—colour and form of the dried sulphate. Incompatibles. Medical uses. Unsafe in large doses—effects of over doses. Dose of the crystallized, from 1 to 5 grains—of the dried, from ½ grain to 3 grains, 3 or 4 times a day. If given in pills, the dried preferred—reason of this. *Compound mixture of iron. Mistura Ferri Composita, U.S.* Uses.

Tincture of the Muriate of Iron.—Tinctura Ferri Muriatis, U.S. Mode of preparing—chemical nature—form—colour—odour—taste—incompatibles—medical uses. Dose, 10 to 30 minims, 3 or 4 times a day.

Tartrate of Iron and Potassa.—Ferri et Potassæ Tartras, U.S. Mode of preparing—chemical nature—form—colour—taste. Solubility in water—effects of exposure. A mild chalybeate. Dose, 10 to 30 grains.

Phosphate of Iron. Ferri Phosphas, U.S. Mode of preparing—chemical nature—form—colour—insolubility in water—medical uses. Dose, 5 to 10 grains.

Iodide of Iron. Mode of preparing. Used in a solid form and in solution. Latter usually preferred. Effects of exposure on solution, and mode of obviating. Particular application. Dose, in substance, 2 to 5 grains.

Besides these chalybeates, the *Ferrocyanate of iron, Acetate of iron, Ammoniated iron, and Tartrate of iron*, are sometimes used.

COPPER.—CUPRUM. *U.S.*

In small quantities, the preparations of copper have little sensible effect on the system. It may be inferred, from their effects in disease, that they exercise a general tonic influence, which is extended especially to the nervous system. In larger quantities they act as poisons. It is probable that, in this case, their action is local, consisting, according to the amount taken, of irritation, inflammation, or disorganization of the part acted on. It is doubtful whether they can be introduced into the system by way of absorption in quantities large enough to prove greatly detrimental, without producing at the same time dangerous or fatal local disorganization. Hence in the administration of copper, it is necessary to guard chiefly against inflammation of the stomach and bowels.

It is not certainly determined whether copper, in the metallic state, has any influence on the system. Cases are recorded in which little or no injury has resulted—others in which it has proved detrimental. It is probable that, in the latter cases, it was oxidized, or formed saline combinations in the stomach.

Poisonous effects from copper vessels in cookery—from mineral-water fountains.

The following preparations are officinal in this country;—

Sulphate of copper.—Cupri Sulphas, U.S.—Blue vitriol. Mode of preparation—character of the crystals—colour—effects of exposure—chemical nature—solubility in water—insolubility in alcohol—colour of the solution—taste—effects of heat—incompatibles.

Effects in moderate doses on the system—on the stomach—poisonous effects—appearance on dissection—treatment—antidote—therapeutical application, both internally and externally.

Dose, one quarter of a grain, 2, 3, or 4 times a day, gradually increased, and omitted or reduced when irritation of stomach is occasioned. Given in pill.

Ammoniated Copper.—Cuprum Ammoniatum, U.S. Mode of preparation—phenomena and rationale of the process—chemical nature—colour—odour—taste—solubility in water—incompatibles.

Therapeutical applications. Dose, half a grain twice a day, gradually increased.

ZINC.—ZINCUM. *U.S.*

The preparations of zinc are mild tonics, thought to have an especial direction to the nervous system. They are similar to the preparations of copper, but much less energetic.

Zinc in the metallic state is inactive.

Sulphate of Zinc.—Zinci Sulphas, U.S.—White vitriol. Mode of preparing—chemical composition—shape and colour of the crystals—taste—solubility in water and alcohol—effects of exposure—effects of heat—incompatibles.

Effects on the system and on the stomach—effects of over doses. Therapeutical applications, internal and external. Dose as a tonic, from half a grain to 2 grains, in pill or solution. As a local application, used in solutions, containing, when applied to mucous surfaces, from 1 to 2 grains to the fluidounce—when to cutaneous eruptions, from 5 to 10 grains—when to ulcers, in order to change the action of their surface, from 10 to 20 grains.

With acetate of lead as an external application—proportions, 2 grains of sulphate and 3 grains of acetate to f℥j. of water—chemical changes. *Acetate of zinc* sometimes used in the pure state—1 or 2 grains to f℥j. of water.

Oxide of Zinc.—Zinci Oxidum, U.S. Mode of preparation—form—colour—odour—taste—relations to water and alcohol—effects on exposure.

Therapeutical applications, internal and external. Dose, 5 grains. Ointment officinal under the name of *Unguentum Zinci Oxidi, U.S.* Uses.

Impure Oxide of Zinc.—Tutty.—Tutia. Used in the form of ointment.

Carbonate of Zinc.—Zinci Carbonas, U.S.—Calamine. Source—preparation—chemical nature—form—colour—taste—relation to water. Used externally in the form of cerate—*Turner's cerate. Ceratum Zinci Carbonatis, U.S.* Applications.

BISMUTH.—BSIMUTHUM. *U.S.*

Sub-nitrate of Bismuth.—Bismuthi Subnitras, U.S.—White oxide of bismuth.—Magistery of Bismuth. Mode of preparation—chemical nature—form—colour—taste—smell—effects on the system—local effects of over doses. Therapeutical applications—effect on the stools. Dose, 3 to 10 grains in powder or pill.

SILVER.—ARGENTUM. *U.S.*

Nitrate of Silver.—Argenti Nitras, U.S.—Lunar caustic. Mode of preparing it—chemical nature—forms in which it is kept in the shops—consistence—colour—fracture—solubility in water and alcohol—taste of the diluted solution—effects of light—effects of heat—incompatibles—influence of common salt.

Effects on the system—effects on the stomach—poisonous effects—proofs of absorption—effects on the skin—explanation—effects when externally applied. Therapeutical applications.

Dose, an eighth of a grain, 3 times a day, gradually increased to 3 or 4 grains. Caution necessary. Given in pill. Mode of preparing the pill—treatment in cases of over doses—antidote.

Several *preparations of gold* have been used, but not generally adopted. Complaints to which they have been applied.

SULPHURIC ACID.—ACIDUM SULPHURICUM. *U.S.*

Formerly *oil of vitriol.* Not used in its concentrated state. Incompatibles.

Effects on the system. In small doses sufficiently diluted, increases the appetite, promotes digestion, and acts at the same time as a general astringent and refrigerant. Larger doses occasion uneasiness or pain in the stomach—still larger, inflammation or disorganization. Concentrated, a violent corrosive poison. Mode of treatment and antidotes.

Remedial applications, internal and external. Used in the following forms.

Diluted Sulphuric Acid.—Acidum Sulphuricum Dilutum, U.S. Preparation—sensible properties—much diluted when taken—swallowed through a quill. Dose, 10 to 30 drops, 3 times a day, or more frequently, in f℥iij. or f℥iv. of plain or sweetened water.

Aromatic Sulphuric Acid.—Acidum Sulphuricum Aromaticum, U.S.—Elixir of vitriol. Preparation—colour—odour—taste. More used than the preceding. Dose and mode of administration the same.

Ointment of Sulphuric Acid. Made in the proportion of ℥j. of acid to ℥j. of lard. Mutual decomposition. Applied in scabies and other eruptions.

NITRIC ACID.—ACIDUM NITRICUM. *U.S.*

Directed in the Pharmacopœia of sp. gr. 1.5, but never so strong in the shops. Two

Ammoniated Copper Cuprum Ammoniatum

Take of Sulph Copper ℥ss Carb. ammonia ℥ij Pulverize in a glass mortar until effervescence ceases, wrap in paper & Dry with gentle heat. The water of crystallization rendering mass moist & the escape of carbonic acid gas from Carb of ammonia occasions the effervescence - It is of a fine blue color odor of ammonia & metallic styptic taste - Soluble in water, incompatibles are potassa lime water & the acids - It is tonic & has been much employed in epilepsy chorea hysteria & worms - Overdoses produce vomiting & primary effects of copper, tho not so apt to nauseate as the other preparations

Zinc Zincum Much used in arts. With copper forms brass, being soluble in weakest acids should never be employed for culinary vessels - In metallic state never used as medicine

Sulphate of Zinc Zinci Sulphas White Vitriol

Take Scraps of Zinc ℥ij Sulph acid ℥vj Distilled water four pints, after the effervescence has ceased filter thro' paper, boil till pellicle begins to form & set it aside to crystallize - Unless the acid is added by degrees, the effervescence of hydrogen from the water is apt to occasion caustic to overflow - Crystals are rhomboidal prisms, metallic styptic taste soluble in 2½ times its weight of cold & less than its weight of boiling water insoluble in alcohol effloresces slightly in dry air - If heated it dissolves in its water of crystallization, the acid is expelled & oxide of zinc is left. Incompatible with alkalies alkaline carbonates hydrosulphates lime water & astringent vegetable infusions - Tonic astringent & antispasmodic, a prompt & emetic - In intermittents is valuable adjuvant to quinine - Internally principally used in spasmodic diseases & epilepsy chorea &c. As styptic to bleeding surfaces -

Oxide of Zinc Zinci Oxidum

Take of Sulphate of Zinc ℥ij Water of Ammonia ℥ss Distilled water ℥iv - Produces a bulky white powder insoluble in water or alcohol - Very difficult of fusion being neither decomposed or volatilized by heat, if heated moderately obtains a permanent yellow tint - Used as an escharotic & excoriated surfaces generally in form of ointment

Carbonate of Zinc Zinci carbonas Calamine

Found in Europe & U.S. Particularly abundant in England - Compact earthy masses or concretions of a dull appearance - Sometimes found crystallized - Calcined & reduced to impalpable powder before being used the crystallized is anhydrous. Color variable gray ish white or brownish yellow Lamar's Cerate is mildly astringent & used as an escharotic -

Bismuth Bismuthum

The only known locality of this metal in the United States is near New Haven Conn. The ancients confounded it with lead. Brittle & brilliant granular yellowish white color crystalline texture not used in uncombined state Subnitrate is the only officinal preparation This is an insipid inodorous powder of a pure white color. Tonic antispasmodic & blackens the stools - Overdose produces alarming gastric distress for which bland mucilaginous drinks are the remedies. Used in affections of stomach dependant on disordered digestion

Nitrate of Silver Argenti Nitras Lunar Caustic

An anhydrous salt consisting of one equivalent of nitric acid & 157 oxide of silver - Soluble in its weight of cold water & four times its wt of boiling alcohol - Incompat. with common water soaps the fixed alkalies & their carbonates lime water sulph. mur. & tart. acids ether salts & astringent vegetable infusions Common salt converts it into chloride of silver & is the antidote when an overdose has been taken - Internal tonic & antispasmodic in too long continued apt to weaken the stomach gives the skin a blackish tinge Externally stimulant & escharotic

Muriatic Acid (Chlorhydric acid) Acidum Muriaticum
Obtained by action sulphuric acid on Chloride of Sodium
It is a pure transparent colorless liquid, corrosive taste &
suffocating odor - Spec. gravity varies with its
strength, when of proper medicinal strength it is ⊕1.16 -
Incompatible with alkalies & most earths, with oxides &
their carbonates, sulphuret & hydrate of potassa
tartar emetic, tartarized iron, nitrate of silver & sub. acetate
of lead

Nitro Muriatic Acid Acidum Nitromuriaticum
Consists of Nitric acid one part & Muriatic acid two
parts (by measure).

Resulting fluid Nitric acid, water & chlorine
Said to produce ptyalism - Chronic hepatic
& diseases - Dropsy - Indigestion
Give evil to render a wine glass full Acidity sour
Likes vapor of chlorine in bronchial inflammation - Has a good effect on lining membrane

forms in the shops, distinguished as *nitric* and *nitrous acids*. The former colourless or slightly yellowish—the latter of a deep orange. The latter consists of nitric acid with some deutoxide of nitrogen, and by dilution is converted into nitric acid—therefore as taken is not different from the former. Incompatibles.

Effects on the system, those of a tonic and refrigerant. Concentrated, a corrosive poison. Treatment of the poisonous effects. Therapeutical applications. Dose of the strongest acid, 2 to 5 minims in a wineglassful or more of water, which it renders decidedly but agreeably sour. The acid often weak in the shops. Its strength judged of by its taste when diluted. Dose gradually increased—if too large, produces cramps in the stomach.

Hope's mixture of nitrous acid, camphor water, and laudanum, given in dysentery, diarrhœa, and cholera infantum. External use of nitric acid, diluted or in the form of ointment. It should never be given in silver.

MURIATIC ACID.—ACIDUM MURIATICUM. *U.S.*

Mode of preparing the officinal acid—form—colour—specific gravity—odour—taste when diluted. Incompatibles. Effects on the system. Therapeutical applications. Dose, 5 to 20 drops, in f℥iij. or f℥iv. of sweetened water, frequently repeated. In gargles, f℥j. to f℥vj. of water.

NITROMURIATIC ACID.—ACIDUM NITROMURIATICUM.

Mode of preparing—chemical changes—composition of the resulting fluid. Proofs that reaction has taken place. Advantage of adding sulphuric acid when the nitric and muriatic are feeble.

Effects on the system. Therapeutical applications. Dose, 2 to 10 drops, 3 or 4 times a day, in sufficient water—to be gradually increased as the stomach will bear it. Modes of external application—in wooden vessels. Strength for external use, f℥j. to Cong. j. for bath —f℥ij. to Cong. j. for footbath. Temperature 96° F.

Water of chlorine—nature—therapeutical applications. *Chlorine* itself inhaled in affections of the chest. Great danger from its incautious use. It should always be very largely diluted with atmospheric air.

CLASS III.

ARTERIAL STIMULANTS.

General Observations.

Medicines which excite the circulation, with little comparative influence on the nervous system.

Applicable to cases of great prostration, when sufficient energy of system remains to sustain it at the point to which it may be elevated. Much care is requisite in their use even in cases of prostration. When this depends on external violence, as in concussion of the brain, or occurs in the first stage of acute diseases, as in the chill of fevers, caution is necessary, in consequence of the danger of the subsequent reaction. In such cases, their internal use is to be avoided unless essential to life, and external stimulation is greatly preferable. When the debility occurs in the course of an acute disease, they may be used more freely, as there is less danger from reaction. The existence of inflammation is not always an obstacle to their use. In such a case when called for by great depression of the vital actions, more care is demanded than in the absence of inflammation. In the suppurative or gangrenous stage of inflammation, they may be used freely if called for by the symptoms. The tendency here is to health, and stimulants support the vital actions till the requisite changes have been accomplished.

The number belonging to this class is very large, but most of them possess other properties also, which rank them in other classes. Those only are mentioned here which are used chiefly in reference to their stimulant properties.

CAYENNE PEPPER.—CAPSICUM. *U.S.*

Fruit of the *Capsicum annuum*, and other species. An annual plant, cultivated but not indigenous in this country.

Character of the fruit—shape—nature of the surface—colour—internal arrangement—colour of the powder—effect of exposure—odour—taste—relations to water and alcohol.

Active ingredient, a peculiar acrid principle called *capsicin*, not volatile.

Effects on the system—therapeutical applications.

Used in substance, infusion, and tincture. Dose of the powder, 5 to 10 grains, given in pill—of the infusion, made with two drachms to half a pint of boiling water, f℥ss.—of the tincture, f℥j. or f℥ij. Mode of preparing Cayenne pepper as a gargle.

OIL OF TURPENTINE—OLEUM TEREBINTHINÆ. *U.S.*

Often called *spirit of turpentine*. Source and mode of preparing it.

Properties—form—colour—odour—taste—specific gravity—solubility in water, alcohol and ether—chemical constitution—effects of exposure—mode of separating the resin.

Effects on the system. Therapeutical applications with a view to its stimulant properties.

Dose, 5 to 20 drops every half hour, hour, or 2 hours, in acute cases—2 or 3 times a day in chronic cases—to be suspended if it induce strangury. Best given in emulsion with gum Arabic, loaf sugar, and cinnamon water or mint water. If it purge, laudanum may be added, when not contra-indicated by disease of the brain.

PHOSPHORUS.

A powerful stimulant, perhaps the most powerful. Dangerous. Seldom proper to prescribe it. Should never be given in substance. Best administered in oleaginous or ethereal solution. Dose, one-twelfth of a grain.

CARBONATE OF AMMONIA.—AMMONIÆ CARBONAS. *U.S.*

Improperly called *volatile alkali*, as this name belongs to pure gaseous ammonia. Mode of preparing it—properties—form as it is kept in the shops—colour—translucency—smell—taste—solubility in water and alcohol—effect on vegetable blues—precise chemical nature—change on exposure in appearance and composition—signs of goodness.

Effects on the system. Increases the circulation and invigorates generally the vital functions, without any decided tendency to the brain. Operates upon the nervous system in general more than any other medicine placed in this class, and might be ranked with

Cayenne Pepper Fructus Capsicum annuum

Light-pendulous pod like berry, color bright-scarlet-orange or sometimes yellow, containing numerous flat-kidney shaped whitish seeds. Powder is of a bright-red color fading upon exposure to light, peculiar aromatic odor, biting burning taste, slightly soluble in water & vinegar, very soluble in alcohol, bitterness depends on peculiar principle capsicin. It is a powerful stimulant - highly useful in correcting the putrescent tendency of certain vegetables - Most important application is in treatment of malignant sore throat & scarlet fever both internally & as a gargle - Externally it is a powerful rubefacient -

Oil of Turpentine Oleum Terebinthinae.

Obtained by distillation from turpentine, colorless limpid & penetrating odor hot pungent-bitterish taste much lighter than water, having specific gravity of 0.86, slightly soluble in water, less so in alcohol than most of the volatile oils readily soluble in ether, consists of carbon & hydrogen deposits a white solid matter (camphine) on exposure absorbs oxygen & becomes thicker & yellowish - It is stimulant diuretic anthelmintic in large doses cathartic & externally rubefacient - Differs from most volatile oils in not dissolving in water - Wood

Carbonate of Ammonia - Ammoniae Carbonas

Muriate of ammonia & Carb. of Lime Disp.

It is not properly a volatile alkali, this name belonging to pure gaseous ammonia. It is in white translucent masses of a crystalline appearance, pungent smell & sharp penetrating taste - Soluble in four times its weight of cold water, is decomposed by boiling water with the effervescence of carbonic acid gas, & dissolves abundantly in diluted alcohol - Changes turmeric paper to brown - It consists of 3 equiv. of carbonic acid, two of ammonia & two of water - By exposure passes into the state of bicarbonate & becomes opaque & friable. In choosing it should choose that which is most translucent

the *nervous* stimulants; but its effects on the sanguiferous system are most obvious. Has some tendency to increase the secretions, particularly that from the skin and lungs. Is also antacid.

Therapeutical applications. One of the best stimulants in low forms of fever. Reasons for its preference over others. Also used in typhoid pneumonia, retrocedent and atonic gout, dyspepsia with acidity and without inflammation, chronic rheumatism, bites of poisonous animals, intoxication, &c.

Dose, 5 to 10 grains every half hour, hour, or 2 hours. Reason for such short intervals. Best administered in solution with sugar and gum to obtund its acrimony. Sometimes given in bolus.

Another preparation of ammonia sometimes used as a stimulant, viz. the *aromatic ammoniated alcohol;* but also used for other purposes, and described elsewhere.

CLASS IV.

NERVOUS STIMULANTS.

General Observations.

Medicines which to the power of stimulating the heart and arteries, superadd an influence of an excitant character over the nervous system. They exhibit no especial tendency to the brain, but appear to act equally over the whole nervous system which controls the functions of relation. Their action upon the nerves is not attended with any very obvious phenomena in the healthy state. Perhaps the imagination and the mental faculties generally may be somewhat excited, and the flow of spirits may be brisker. But their influence is powerfully exhibited in certain deranged conditions of the nervous system. They are applicable to all cases of this kind not connected with inflammation or arterial excitement, and particularly to such as are associated with general debility.

One of the modes in which nervous derangement is exhibited is spasm. When this arises from irregular distribution of the nervous influence, dependent upon debility or any other cause not connected with inflammation, it may often be controlled by these medicines. Hence the name of *antispasmodics*. Reasons for considering this an improper designation.

Many other symptoms of nervous derangement besides spasm relieved by nervous stimulants. Among these may be mentioned morbid vigilance, restlessness, dejection of mind, hypochondriasis, and even mental derangement.

It is true that all these effects are also obtained from the cerebral stimulants or narcotics; but these, in addition to their general nervous influence, act with especial energy on the brain, and on this account cannot always be given safely in cases which call for the nervous stimulants. They are, besides, less powerful, as a general rule, than the latter class, in the general influence alluded to.

Remarks on the modus operandi of this class of medicines.

MUSK.—MOSCHUS. *U. S.*

Product of the *Moschus moschiferus*. Native country of this animal. Its general character and habits. Part from which the musk is obtained. Countries from which it is imported. Appearance externally and internally of the pods in which the musk is contained. Modes of adulteration, and substances with which it is adulterated. Mode of discovering adulterations. Relative value of the commercial varieties of musk.

Properties of musk as in the shops—form—consistence—colour—odour—taste—relations to water and alcohol—complexity of its chemical composition—evidences of good quality—mode of keeping.

Effects on the system. Therapeutical applications.

Given in pill, or suspended in the form of emulsion. Medium dose, 10 grains; but the dose varies from 5 grains to ʒj. To children often advantageously given in enema.

Artificial musk. Mode of preparing.

CASTOR.—CASTOREUM. *U. S.*

Product of the *Castor fiber* or beaver. Part of the animal from which it is derived. Sensible properties. Little used. Dose in substance, 10 to 20 grains—in tincture, fʒj. to fʒij.

ASSAFETIDA.—ASSAFŒTIDA. *U. S.*

Inspissated juice of the *Ferula Assafœtida*—an herbaceous umbelliferous plant of Persia. Mode in which the juice is obtained and hardened. Rout by which it is sent into the market.

Shape in which it is kept in the shops—consistence when fresh—effects of time on its consistence—colour externally—colour and general aspect of the fracture—effect of exposure on the colour—odour—taste—effects of time on the smell and taste—effects of heat—chemical nature—relations to water and alcohol—influence of water on the tincture.

Active ingredients, resin and volatile oil.

Effects on the system. Therapeutical applications. Dose, 5 to 20 grains or more. Given in pill or emulsion. *Mixture of assafetida.* Dose of the gum-resin in enema, ʒss. to ʒij. with Oss. of water. Dose of the tincture, fʒj. Sometimes used externally as a plaster.

Nervous Stimulants – Most of this class are volatile & of an unpleasant, even foetid odor – Dr W. laughs at the idea entertained by some of their action being derived from their influence on the nostrils, for they produce their effect when given as enema or disguised in pill

Musk Moschus (Moschifera)

Native of central Asia inhabiting the mountainous regions it is active & timid, seeking its food by night. The chief supply to this country is imported from China – It is obtained from the male only It is found enclosed in a small sac between the umbilicus & prepuce – This sac called pod is dried with its contents – Lined internally by a smooth membrane dividing it into cells, Adulterated by removing portions of the pod & substituting dried blood which is readily it precisely in color. may be detected by examining for the opening which has been either sewed & glued up. Musk is in contracted lumps, soft & unctuous to the touch of reddish brown color, strong powerfully diffusive odor, bitter disagreeable acrid taste & inflammable, only partially soluble in water & alcohol. If black of feeble odor or burning with difficulty it should be rejected – Kept in glass bottles. Musk is stimulant & antispasmodic, increasing the circulation & nervous energy without any especial tendency to the brain – It is an excellent remedy in obstinate hiccough, & infantile convulsions produced by spasm of the bowels

Valerian Valeriana officinalis Radix

The root consists of long slender cylindrical fibres issuing from a tuberculated head - The best comes from England Externally yellowish or brown internally white - Powder yellowish gray - Odor in fresh root slight in dried root strong & highly characteristic & like asafoetida & borneo & disagreable to others - Taste bitterish at first then bitter & aromatic Gives virtues to water & alcohol - The oil of valerian is of a pale greenish color becoming yellow & acid by exposure Cats are strongly attracted by this plant. - It is gently stimulant, with especial direction to nervous system but no narcotic effect. Has been much used in hemicrania, it is too feeble to be of much use in epilepsy or chorea & is at best a very uncertain remedy -

Amber Succinum

Is found chiefly in Prussia on Baltic coast or underneath the bed of the sea Found in small irregular solid masses of vitreous fracture, generally yellow translucent & susceptible of brilliant polish, no taste & is inodorous unless heated, when it gives a peculiar aromatic smell - Water & alcohol scarcely act on it - When heated it softens melts slowly & at last inflames - Yields by distillation oil of amber & succinic acid - The oil of amber is obtained by distilling the amber with an equal weight of sand in a glass retort. The oil when rectified is impure of a dark color & empyreumatic odor. The oil is rectified by distilling it with six times its measure of water - When quite pure it is much thinner as fluid as alcohol even, & is colorless, with a strong peculiar unpleasant odor & a hot acrid taste, & yields them properties partially to water without being itself dissolved - Entirely soluble in absolute alcohol - By exposing it to light & air it will become ultimately black & solid -

Stimulant & antispasmodic, promotes the secretions occasionally particularly the urine - Has been used in amenorrhea & various spasmodic & convulsive affections. Externally employed the oil is rubefacient.

GALBANUM.—SAGAPENUM.—AMMONIACUM.

These are all gum-resins, and possess properties as nervous stimulants analogous though much inferior to those of assafetida. Neither of them, however, is at present employed in reference to these properties. *Galbanum* is occasionally used in plasters, and *ammoniac* as a stimulant expectorant.

VALERIAN.—VALERIANA. *U.S.*

Root of the *Valeriana officinalis*—an herbaceous perennial, indigenous in Europe.

Shape and aspect of the root—colour—colour of the powder—odour—taste—relations to water and alcohol.

Active ingredients, a volatile oil, and a volatile acid called the *valerianic*, which rises with the oil in distillation.—Sensible properties of the oil of valerian.

Effects on the system. Therapeutical applications. Administered in powder, infusion, tincture, and oil. Dose of the powder, 30 to 90 grains—of the infusion, f℥ij.—of the tincture, from f℥j. to f℥iv.—of the oil, from 4 to 6 drops—each dose to be repeated 3 or 4 times daily. Decoction and extract objectionable.

OIL OF AMBER.—OLEUM SUCCINI. *U.S.*

Origin of amber—shape—size of pieces—translucency—colour—fracture—nature of the surface—taste—odour—relations to water and alcohol—effects of heat—products of distillation.

Mode of preparing oil of amber—appearance of the impure oil—mode of purifying.

Consistence of the pure oil—colour—odour—taste—effects of heat—relations to water and alcohol—effects of exposure.

Effects upon the system. Therapeutical applications, internal and external. Dose, from 5 to 15 drops, in emulsion.

Various other vegetable products exert a stimulant influence over the nervous system. Among them are the following;—

GARLIC.—ALLIUM. *U.S.* Much used externally to relieve or obviate spasm, and to allay nervous irritation. The *bruised bulbs* applied in poultices to the feet, and with hot brandy as a lotion to the spine, chest, and abdomen. Treated of more fully in another place.

TEA and COFFEE also, together with tonic and astringent properties, possess those of a powerful stimulant to the nervous system. Effects upon the system. Therapeutical applications.

SKUNK CABBAGE.—DRACONTIUM. *U.S.* Root of the *Symplocarpus fœtidus.* An indigenous plant. Place of growth—character of the plant—odour of the recent root—effects of time and exposure—influence on the system—therapeutical application.

CLASS V.

CEREBRAL STIMULANTS. Diffusible

General Observations.

Medicines which, with a stimulating influence over the circulation and the general nervous system, conjoin a peculiar determination to the brain. Called *narcotics* from the stupor which they produce in large doses. Reason for abandoning the old class of narcotics. The only points of resemblance between individuals composing the class of *cerebral stimulants*, are those mentioned in the definition. In all other respects they differ more or less from one another. They differ in the degree of their power, in the relative degree to which they affect the different systems or organs respectively, in the precise manner of affecting these systems or organs, and in their several local tendencies. Illustrations of these statements. The different character of the cerebral symptoms produced by the different individuals, is partly perhaps ascribable to a direction to different parts of the brain. Illustrations.

Cerebral stimulants, like all others, are followed by prostration proportionate to the previous excitement. Caution is requisite not to confound this prostration, which is a secondary effect of the medicine, with that apparently sedative influence upon certain functions which attends its primary action. Explanation.

In very large doses, the cerebral stimulants exert a less stimulant influence over the circulation, and a greater energy of action on the brain, which they disable from receiving and transmitting due impressions. Life is destroyed by the cessation of respiration consequent upon the want of cerebral influence. Proofs of this fact.

Suggested that these medicines may act partly through the medium of the brain and nerves, partly in consequence of absorption and entrance into the circulation. Perhaps the different symptoms produced by them in different stages of their action may be ascribed partly to this cause.

They produce their peculiar effects on the system to whatever part they may be applied.

Their influence is diminished by habit more rapidly than that of any other class of medicines. Having no corrosive power, and in many instances no decided tendency to excite local inflammation, they may be given, in gradually increasing doses, till an enormous amount may be taken at one time with present impunity. It is necessary gradually to increase their dose in order to obtain from them the same impression. When the susceptibility to one is lost or very much diminished, another of analogous properties may be advantageously substituted.

These medicines require to be given with caution. Besides the immediate danger of an overdose, they produce, when long continued, conditions of system which often result fatally. They wear out healthy susceptibility, and consequently produce ultimately a state of general debility, while, by the over excitement of particular organs, they give rise to local inflammation.

As therapeutical agents, they are more powerful than any other class in supporting the system under a temporary failure of its powers. Reason for this stated. They may be made to act as substitutes for the purely nervous stimulants, by reducing the dose, as in this way their general influence over the nervous system is obtained, with less of their action on the brain. Illustrations of this fact. Difference in their mode of action, in cases of nervous disorder, as nervous stimulants and cerebral stimulants.

Different names given to the medicines belonging to this class, in reference to different effects which they produce. Thus they are called *narcotics* from the stupor they occasion, *anodynes* from their influence in relieving pain, and *soporifics* or *hypnotics* from their effect in inducing sleep.

ALCOHOL. 52

Product of vinous fermentation. Explanation of this process. Different fermented liquors. Distillation of these affords the spirituous or distilled liquors. Proof spirit. Different spirituous liquors. Proportion of alcohol in these liquors. By redistillation, officinal alcohol of sp. gr. .835 obtained. Alcohol cannot be obtained entirely pure by distillation. Absolute alcohol not used in medicine. Officinal alcohol or rectified spirit contains 15 per cent. of water. Uses of officinal alcohol in pharmacy and medicine. *Diluted alcohol* of the

Alcohol

Alcohol

Mixture of water sugar & any fermenting sub-
stance, exposed to summer heat. The alcohol ex-
erated by distillation - Proof Spirit is of a Specific
gravity of 0.920 - If lighter the Spirit is above
proof if heavier, it is ad to be below proof - This proof
Spirit is not pure however. The officinal alcohol is obt-
ed by redistillation or rectification - To obtain it
entirely pure must - throw in some substance having a
powerful affinity for water - lime for instance - - Al
used in any case internally, not often even, when dilute
Alcohol has never been analyzed - It is a very powerfu
diffusible stimulant & the intoxicating ingredient in all
liquors which have undergone the vinous fermentation. Bra
dy often used in the sinking stages of typhous fever

Opium

The white poppy is annual plant smooth erect glaucous stem, flowering (in United States) in summer mo. The capsule is round smooth & glaucous from 2 to 4 inches in diameter, numerous minute white seeds escaping when perfectly ripe thro' small openings beneath the Stigma - The black poppy differs only in the character of the fruit, the capsule being smaller & more globular & seeds of a brown or blackish color. Cultivated in Turkey Egypt India & Europe - The narcotic juice is most abundant in the capsules when they are half ripened - Capsules are scarified in the evening the exudation scraped off in the morning, exposed to the sun & kneaded by the hand, formed in cakes, wrapped in leaves & sent to market - Seeds sometimes used as food & of common oil not narcotic, they yield by expression a bland oil, similar to olive oil, which is used for culinary purposes painting, making soap &c - Imported to U. S. from Turkey which is generally thought the best. Smyrna opium is of various sizes & shape owing to its original softness, covered externally with a dust of red, blackish & dries in the air granulated fracture - This is the most valuable of the 3 Turkish varieties It is of strong virous odor - Constantinople opium is in small flattened tolerably regular lumps about 2 inches in diam. & always covered with a poppy leaf - Weaker than the Smyrna variety. It blackens also & dries in the air Egyptian opium is in lumps similar to last but rather larger & of a very clean surface, vestiges only of the leaf remaining - May be distinguished by its red color & its softness instead of hardening in the open air & by its shining adherent surface - This variety is the least valuable & should never be used internally - It is only fit for making morphia. Recognize bad opium by its empyreumatic odor, liquorice or saccharine taste, or when it leaves a dark black trace on paper - Opium has strong narcotic odor & a bitter somewhat acrid taste. Long chewing irritates the lips & tongue & soon blisters the mouth - lighted taper readily inflames it. Partially soluble in water & alcohol - Morphia exists in combination with meconic acid & extractive - Narcotina, solid white tasteless inodorous silky flexible needles, fusible at moderate temperature, insoluble in cold water, soluble in 400 parts boiling water, & very soluble in ether, dissolved by most of the acids, must therefore be ranked among the vegetable alkalies - Wood does not believe that this principle is the cause of the unpleasant effects of opium, in fact considers it nearly inoperative on human system - It may be obtained by digesting opium in sulphuric ether - Opium is a stimulant narcotic, suspending the secretions & composing the general nervous irritation - In large dose the excitement is shorter, & the soporific effects more sudden & of longer duration - In quantities sufficient to destroy life it scarcely produces any sensible increase of the general powers of the system - Contra indicated in high inflammatory excitement, or in strong determinations of blood to the head - Given by enema in obstinate vomiting, strangury, dysenteries &

Pharmacopœia consists of equal measures of officinal alcohol and water. Uses of diluted alcohol. Importance of knowing whether a tincture is prepared with *alcohol* or *diluted alcohol*.

Distilled liquors sometimes used internally. Brandy preferred. Circumstances which justify its employment. External use.

Fermented liquors generally preferable as stimulants. Reasons for this preference.

Wines. Origin and composition. Proportion of alcohol existing in them. Madeira, Teneriffe, or Sherry, generally preferable as stimulants; Port wine, when an astringent is indicated. Disadvantages of the light wines. *Wine whey.* Mode of preparation. Uses. Mode of preparing *spiced wine.* Uses.

Malt liquors. Peculiarity of composition. Under what circumstances preferable to wine. Porter or ale better than beer.

Therapeutical applications of alcoholic liquors. Evidences of their favourable and unfavourable action.

SULPHURIC ETHER.—ÆTHER SULPHURICUS. *U.S.*

Mode of preparation. Process for purification. Called, when purified, *rectified sulphuric ether.*

Form—colour—specific gravity—taste—odour—facility of evaporation—effects of evaporation—point of ebullition—inflammability—practical caution—relations to water and alcohol.

Effects on the system. Consequences of its inhalation. Therapeutical applications. Dose, from f℥ss. to f℥j. with sweetened water. Mode of incorporating it with water by means of spermaceti. Mode of inhaling the vapour Circumstances under which it may be usefully inhaled. External uses of ether.

Spirit of Sulphuric Ether. A mixture of ether and alcohol—officinal—seldom used.

Compound Spirit of Sulphuric Ether. Anodyne Liquor of Hoffmann, or more briefly, *Hoffmann's Anodyne.* Mode of preparation. Odour. Mode of ascertaining its genuineness. Therapeutical uses. Dose, from 30 drops to f℥j. in a wineglassful of sweetened water or mucilage.

OPIUM.

Concrete juice of the capsule of the *Papaver somniferum*, and probably also the *P. orientale.* General character of the poppy. Varieties, *black* and *white poppy.* Where cultivated.

Shape and size of the mature capsules—consistence—internal structure—taste—uses—modes of preparation.

Seeds destitute of narcotic properties. Fixed oil obtained from them. Uses of the oil.

Countries in which the poppy is cultivated for the sake of opium. Mode of obtaining opium. Whence imported into the United States. Commercial varieties of opium. Smyrna opium generally used.

Smyrna opium. Shape and size of the masses—external appearance—consistence—colour of the surface—colour when broken—fracture in the soft and perfectly dry state—odour when broken—relative value.

Constantinople opium. Shape of the pieces—relative value.

Egyptian opium. Shape and size—external appearance—colour—fracture—odour—quality—relative value.

Properties of opium—odour—taste—effect of long chewing—colour—mode of pulverizing—character of the powder—inflammability—relations to water and alcohol—signs of inferiority.

Chemical constitution of opium. Most interesting ingredient, *morphia.* State in which this exists in opium.

Narcotina, another ingredient. Its form—sensible properties—effects of heat—relations to water, alcohol, and ether—influence of its combination with acids—effects on the system—mode of separating it from opium or morphia.

Besides these principles, opium contains at least one other alkaline substance named *codeia*, gum, extractive, resin, caoutchouc, a volatile principle, &c.

Effects of opium on the system. Duration of its primary action. Secondary effects. Influence over the secretions, the peristaltic motion, pain, spasm, and other forms of nervous irritation. Effects in very large doses. Poisonous effects. Treatment of these. Peculiar effects of opium on certain constitutions. Therapeutical indications which it is capable of answering. Contra-indications. Circumstances modifying the dose. Cases in which the medicine is best given by the rectum, or applied to the skin.

Given in substance, tincture, or in the form of some preparation of morphia. When in substance, usually in the form of pill. Mode of preparing the pill. Medium dose, 1 grain.

Tincture of Opium.—Tinctura Opii, U.S.—Laudanum. Thebaic tincture. Advantages

of this form. Mode of preparation. Dose, equivalent to one grain of opium, 13 minims or 25 drops. Caution in relation to laudanum long kept. Mode of applying it externally.

Camphorated Tincture of Opium.—Tinctura Opii Camphorata, U. S.—Paregoric elixir. Ingredients. Sensible properties. Two grains of opium in every fluidounce. Advantages of this preparation. Dose, for the purposes for which it is ordinarily given, f℥j.

Acetated Tincture of Opium.—Tinctura Opii Acetata, U. S. Substitute for the old *acetum opii* or *black drop.* Mode of preparation. Advantages. Dose, equivalent to one grain of opium, 10 minims or 20 drops.

Morphia. Mode of preparation—form—colour—taste—effects of heat—relations to water, alcohol, ether, the fixed and volatile oils, the acids, and the inorganic alkalies—tests—state of combination in which it is employed.

Sulphate of Morphia.—Morphiæ Sulphas, U. S. Mode of preparation—form—colour—solubility in water.

Acetate of Morphia.—Morphiæ Acetas, U. S. Form—solubility in water.

Peculiar physiological effects of morphia and its preparations. Cases in which they are preferable to opium. Dose, one-sixth of a grain, equivalent to one grain of opium. Given in pill or solution. There is an officinal solution of the sulphate.

Solution of Sulphate of Morphia.—Liquor Morphiæ Sulphatis, U. S. Proportion of the sulphate to water, 1 gr. to f℥j. Dose, from f℥j. to f℥ij.

External use of the sulphate and acetate of morphia. Mode of application. Quantity applied.

Muriate of Morphia sometimes used. Effects and dose the same as of the other salts.

LACTUCARIUM. *U. S.*

Inspissated milky juice of the *Lactuca sativa*, or garden lettuce. Mode of collection. Properties—form—colour—odour—taste—relations to water—chemical constitution. Effects on the system. Practical application. Dose, 2 or 3 grains.

HENBANE.—HYOSCYAMUS. *U. S.*

Hyoscyamus niger—a biennial, herbaceous plant—indigenous in Europe. *Leaves* and *seeds* the officinal parts. Leaves of the second year preferred.

Odour of the recent and of the dried leaves—taste—relations to water and alcohol.

Virtues ascribed to a peculiar alkaline principle called *hyosciamia*, but uncertain.

Shape, size, and colour of the seeds.

Effects of hyoscyamus on the system. Points in which it differs from opium. Effects of overdoses. Effect on the pupil. Therapeutical applications. Dose of the leaves, 5 to 10 grains. These rarely used. The medicine is most commonly employed in the form of extract.

Extract of Henbane.—Extractum Hyoscyami, U. S. The inspissated juice. Mode of preparation—consistence—colour—odour—taste. Dose, 2 or 3 grains, repeated frequently till the medicine produces some effect.

Tincture sometimes used. Dose, f℥j.

HOPS.—HUMULUS. *U. S.*

Fruit or strobiles of the *Humulus Lupulus.* General character of the plant. Indigenous in Europe and North America. Mode of collecting and preparing the strobiles for market.

Properties of hops—form—colour—structure—texture—powder about the base of the scales—odour—taste—relations to water and alcohol.

Active ingredients, a volatile oil and a peculiar bitter principle found most abundantly in the powder about the base of the scales. The powder is called lupulin.

Lupulin. Mode of collection—form—colour—odour—taste—effects of heat.

Effects of hops on the system. Remedial applications internal and external. Given in infusion and tincture. Dose of the infusion, made with half an ounce to a pint of water, f℥ij.—of the tincture, from f℥j. to f℥ss.

Lupulin used in substance and tincture. Dose, 6 to 12 grains, given in the form of pill —of the tincture, f℥j. to f℥ij.

CAMPHOR.—CAMPHORA. *U. S.*

Product of the *Laurus Camphora*—an evergreen tree, indigenous in China and Japan. Mode of obtaining the camphor. State in which it is brought into market. Mode of refining. Form of the resulting cakes.

Properties of camphor—colour—translucency—texture—feel—effects of alcohol on the facility of pulverization—odour—taste—specific gravity—volatility—effects of heat—inflammability—relations to water, alcohol, ether, volatile and fixed oils—reaction of water upon the tincture—effects of union with resins and fats—chemical nature—mode in which it is best kept.

Tincture of Opium made by macerating 3iij of Opii in Oij of dilutid alcohol for fourteen days & then filtering
Camphorated Tincture of opium or Elixir Paregoric is composed of Opii Benzoic acid Ol of anise aa 3j ~~Liquorice~~ 3jss clarified Honey 3ij Camphor Dij dilutid alcohol Oiij
Agitated Tincture of Opium - Take opii 3ij Vinegar fℨxij Rub them together & add Alcohol Oss - Better than laudanum only because the morphia exists in it in the State of an acetate
Morphia made by macerating opii with alcohol & water of Ammonia - small colorless shining crystals, inodorous & bitter, loses its crystalline form by a moderate heat then melts & at last burns - Insoluble in cold water, slightly in cold & freely in boiling alcohol, dissolved by fixed & volatile oils & not by ether, restores the blue of litmus reddened by acids, turns the yellow of turmeric to brown - Forms soluble salts with the acids which are decomposed by the alkalies one of its tests is salts of iron with which it produces blueish green - This is the case with all vegetable salts.
Sulphate of morphia - Mix morphia with water & then add sulph acid until it is entirely dissolved - White minute feathery crystals soluble in twice their weight of boiling water - Acetate of morphia is same process, with the exception of acetic acid in place of sulphuric, it crystallizes in slender needles, readily dissolved by water.
Morphia & its preparations the chief narcotic principle of opium, differing however from it somewhat in its action, as it stimulates, counteracts & evacuates much less - Narcotic effect sometimes unpleasant producing dreams this is obviated by increasing the dose, Applied over blistered surfaces in triple the ordinary dose, produces same effects as when taken internally
Lactucarium Lactuca Sativa Succus concretus called Lettuce opium. contains free acid & peculiar narcotic principle but is destitute of morphia - It resembles opium in color taste & smell. Soluble in its weight of water It has the properties of opium without being followed by its injurious effects. Used to allay cough & nervous irritation
Henbane Hyoscyamus - Folia -
Native of Europe, found in Northern & Eastern parts of the United States, grows among rubbish & in uncultivated places Leaves of 2d year are best & should be collected immediately after the plant has flowered - Fresh leaves have a strong disagreable narcotic odor, resembling tobacco When dried have little smell or taste - when fresh taste is mucilaginous & slightly acrid - Yield virtues to water & alcohol - The seeds are small irregular brown or ash colored
This a narcotic but differs from opium in being laxative in place of constipating - Overdose irritate the alimentary canal & brain producing alarming symptoms. Rarely used unless when opium is inadmissible. Dilates the pupil & The extract is made by moistening the leaves bruising, expressing the juice & evaporating to proper

Thorn apple leaves Stramonii folia } Jamestown Weed
Thorn apple seeds Stramonii Semen }

This offensive weed is found every where in the vicinity of Cultivation, on dung heaps, common roadsides &c. all parts medicinal The leaves when bruised emit a fetid narcotic odor, which is lost upon drying, Taste bitter & nauseous Seeds are small & kidney shaped (resemble this) almost black color, inodorous, taste bitter & nauseous - The seeds are the most powerful - Extol virtues & water & alcohol - Powerful narcotic & when taken in poisonous dose produce the ordinary effects of this medicine Smoking the leaves, a favorite remedy in Chronic asthma - This is used externally as ointment in irritable ulcers, inflamed tumors swelling of mamma Hemorrhoids & like belladonna to dilate the pupil by Surgeons

Bittersweet Dulcamara Caulis

This & Conium may be considered as sort of connecting link between Cerebral Stimulants & arterial Sedatives Climbing plant bright-scarlet berries common in Europe & North America, twigs an of thickness of goose quill externally wrinkled, of a gray ish ash color, pithy internally inodorous, taste first bitter afterward sweet, gives the name yield all their virtues to boiling water. Has narcotic properties & power of increasing the secretions especially from kidneys & skin. Narcotic effects not obvious unless in large doses - Its use confined now mostly to treatment of Cutaneous eruptions & mucous tendency to ulceration

Conium Hemlock Folia

Native of Europe, naturalized in United States growing in waste grounds & near old settlements - when in flower has fetid odor, said to be similar to urine of cats, most active in hot warm & warm climates. Leaves collected when in flower quickly dried & kept in close excluded from air & light or by pulverizing & keeping powder in opaque bottles - Dried leaves have strong heavy narcotic odor, taste bitterish & nauseous, color is fine green which is retained in the powder. Active principle insoluble in water, soluble in alcohol & ether - It is narcotic without being decidedly stimulant or sedative (see Dulcamara) - Poisonous effects similar to cerebral stimulants generally - Used in cancerous & scrofulous tumors & ulcers & various cutaneous diseases - Recommended by Dr Eberle in Goitre.

Effects on the system—poisonous effects—therapeutical applications.

Medium dose, 5 to 10 grains—but the dose may vary from 1 to 20 grains. Given in the form of bolus or emulsion. Objection against the former. Modes of preparing the emulsion. Given also in solution. Camphor water—*Aqua Camphoræ, U.S.*—an officinal preparation. Mode of preparing it. Strength of the solution. Purposes for which it is used. Dose, f℥j. or f℥ij. or more. Camphor is used also in tincture. Strength of the tincture. Dose, 5 drops to f℥j.

External use of camphor. Applied in spirituous or oleaginous solution. Officinal preparations, 1. *Camphorated Tincture of Soap—Tinctura Saponis Camphorata, U.S.*—2. *Camphorated Soap Liniment—Linimentum Saponis Camphoratum, U.S.*—commonly called *opodeldoc;* 3. *Camphor Liniment—Linimentum Camphoræ, U.S.*

DEADLY NIGHTSHADE.—BELLADONNA. *U.S.*

Atropa Belladonna—a perennial herb, indigenous in Europe. Whole plant narcotic. Leaves only recognised by the United States Pharmacopœia.

Shape of the leaves—colour when dried—odour—taste—virtues said to reside in an alkaline principle called *atropia.*

Effects on the system. Poisonous action. Treatment of its poisonous effects. Therapeutical applications. Used in substance, infusion, or extract.

Dose of the powder, gr. j. night and morning—of the infusion, made with one scruple to ten fluidounces of water, f℥j. or f℥ij.—of the extract, which is the inspissated juice, and is much more employed in the United States than any other preparation, one-fourth or one-half a grain twice a day. Reasons for beginning with a small dose. The quantity to be gradually increased, if necessary, till some effects upon the system are produced. Evidences of these effects.

External use in the form of plaster, and as an application to the eye and the os uteri.

THORN-APPLE LEAVES.—STRAMONII FOLIA. *U.S.*
THORN-APPLE SEEDS.—STRAMONII SEMEN. *U.S.*

Leaves and seeds of the *Datura Stramonium*—an annual plant, growing wild in all quarters of the world. Situations most favourable to its growth.

Leaves. Odour in the recent state—taste.

Seeds. Shape—colour—odour—taste—relative activity—relations to water and alcohol.

Virtues of Stramonium ascribed to an alkaline principle called *daturia*, the existence of which, however, is doubtful.

Effects on the system. Poisonous action. Evidences of this action and mode of treatment. Therapeutical applications. Dose of the seeds, one grain—of an extract prepared from the seeds, from one-fourth to half a grain—of the powdered leaves, 2 or 3 grains—of the officinal extract or inspissated juice of the leaves (Extractum Stramonii, U.S.), one grain night and morning, gradually increased till the system is affected.

External use of stramonium. Employed in the form of an ointment (Unguentum Stramonii, U.S.)

BITTERSWEET.—DULCAMARA. *U.S.*

Stem and branches of the *Solanum Dulcamara* or *woody nightshade.* Character of the plant, and places of growth.

Shape and size of the twigs—structure—nature of the surface—colour—odour—taste—relations to water.

Virtues ascribed to a peculiar alkaline principle called *solania.*

Effects on the system. Therapeutical applications. Usually given in decoction, which is officinal. Dose, f℥ij. four times a day. An extract may be given in the dose of from 5 to 10 grains.

HEMLOCK.—CONIUM. *U.S.*

Conium maculatum—a biennial, umbelliferous plant, indigenous in Europe, and naturalized in this country. Sometimes called *cicuta*, but improperly. The whole plant narcotic. Most so in warm latitudes. The leaves are officinal. Mode of collecting and preserving them.

Properties of the leaves—colour—colour of the powder—odour—taste—relations to water, alcohol, and ether.

Active principle, probably a peculiar volatile alkali called *conia.*

Effects on the system. Poisonous properties. Therapeutical applications. Dose of the powdered leaves, 3 or 4 grains—of the extract or inspissated juice of the leaves (Extractum conii, U.S.), 3 grains, repeated 2 or 3 times a day. The dose to be gradually increased till some effect on the system is produced. Evidences of such effect. Caution in relation to the use of different parcels of the medicine.

CLASS VI.

ARTERIAL SEDATIVES.

General Observations.

Sedative medicines are those which by their immediate influence produce a reduction of the vital actions. Some of these are directed more especially to the circulatory system, reducing the action of the heart and arteries, without any immediate influence upon the nervous power. These are called *arterial sedatives.* Others reduce at the same time arterial and nervous power; and these, for the sake of convenience, we call *nervous sedatives.*

The arterial sedatives, though in their primary action confined to the circulatory system, undoubtedly affect the nervous system also; but only in a secondary manner. The two systems are so closely connected by sympathy, that any great disturbance of the one seldom exists without inducing disorder in the other.

Though sedative in their general influence, these medicines may be stimulant in relation to particular functions or organs, and in large quantities often act as local irritants.

An obvious indication for the use of the arterial sedatives is afforded by increased vascular action, resulting from an increased display of the vital energies. Hence their use in all inflammatory diseases attended with fever, and not complicated with typhous tendencies; and in all fevers in which the grade of action is above the healthy standard.

Refrigerant medicines belong to this class. They act in general by reducing the excited action either of the heart or of the capillaries, from which the incresed heat arises.

ANTIMONY.—ANTIMONIUM.

Even in quantities too small to produce obvious effects, the antimonials are not without influence on the system. They occasion some modification of the vital actions, which, though so slight as to escape notice in health, is yet important in some cases of disease. Medicines which act in this way are called *alteratives.*

In large quantities, given so as to operate upon the system, without producing nausea, they depress the movement of the heart and other parts concerned in the circulation, as indicated by a slower and weaker pulse, and a less vigorous impulse of the heart when examined by a stethoscope. At the same time the surface becomes cooler and paler, and respiration less frequent. Sometimes, by proper management in the increase of the dose, and in the regulation of the diet, this depressing influence may be exhibited in a powerful degree without any especial action on the stomach.

Usually, from doses calculated to produce a decided sedative impression on the circulation, nausea or sickness of stomach also results, which, by its own depressing agency upon the circulatory function, very much increases the sedative influence of the antimonial. This combined action is sometimes desirable when great relaxation is to be produced; but the local impression on the stomach should be avoided in cases of inflammation or great irritation of that viscus.

In still larger doses, the antimonials usually vomit. Of this effect, more will be said under the head of emetics.

These preparations are apt also to irritate the bowels, and to occasion purging, especially if not thrown off from the stomach by vomiting. Very large doses sometimes occasion violent vomiting and purging, with great and dangerous prostration.

While operating as general sedatives to the circulatory forces, the antimonials appear to stimulate the secretory functions, being directed to one or another of these functions, according to the circumstances under which they are given, or the mode of administration.

The effects of antimonials upon the heart and arteries, and upon the secretions, probably depend upon their entrance into the blood-vessels by means of absorption. On the stomach they probably act by an immediate irritation, though they appear to have a peculiar tendency to this organ, as, even when introduced into the system by other routes, they are said to act as emetics.

Applied in large quantity to any part of the body, they produce local irritation or inflammation. Thus, tartar emetic, when applied to the skin, gives rise to a pustular eruption, and on a surface unprotected by the cuticle is capable of acting as a caustic.

Metallic antimony, administered in very fine powder, is capable of producing all the

Precipitated Sulphuret of Antimony
Antimonii Sulphuretum Precipitatum

Made by boiling the common sulphuret in a solution of caustic potass, & precipitating while hot with Sulph Acid - This is probably a mixture of Kermes mineral & golden sulphur of antimony -

Kermes Mineral is obtained by allowing the solution first to cool without adding the acid - & is an insipid inodorous powder, of brownish shade.

Golden Sulphur is formed by the addition of an acid to the liquor which remains after precipitating the Kermes & is a golden yellow powder

The precipitated sulphuret is an orange colored insoluble powder, inodorous & of a slightly styptic taste, when heated readily catches fire - If it effervesce with dilute sulphuric acid, its adulteration with chalk may be suspected — Kermes is more active than the other

Antimonial Powder is prepared with sulph of Antim. & as much again by wt of Hartshorn shavings, of dull white color, tasteless inodorous & insoluble in water - Dr Wood says only Tartar Emetic from which may be obtained the effects of all other preparations
chem. relations - phos. of lime & oxydized antimony - Rheumatism & cutaneous affections

Nitrate of Potassa Potassæ Nitras Nitre Saltpetre

Imported principally from India - The soil is lixiviated & the lixivium evaporated to crystallization - Artificial beds are formed, by heaping up animal & vegetable remains & sprinkling with urine, which contains large quantity of nitrogen. As imported is in crude state & is refined by boiling 2 parts with 1 of water, the insoluble portion is common salt. The solution is clarified with glue & cooled & crystallizes in long striated semitransparent prisms, white, sharp cooling taste - dissolves in 4 times its wt of cold & 1/2 of boiling water, insoluble in alcohol, apt to hold a portion of liquid mechanically - Fuses by heat. Refrigerant antiphlogistic powerfully antiseptic, prevents the generation of worms & vermin - Often combined with Tartar

general effects of its preparations; but its activity probably depends upon chemical changes which it undergoes in the stomach, and its operation is too uncertain to be depended on.

The preparations which have at different times been employed are very numerous. It is sufficient to notice three—viz. 1. *tartar emetic*, 2. the *precipitated sulphuret*, and 3. the *antimonial powder*.

TARTRATE OF ANTIMONY AND POTASSA.—ANTIMONII ET POTASSÆ TARTRAS. *U. S.—Tartar emetic. Tartarized antimony.* Chemical nature. Mode of preparation. Reason why it should always be crystallized.

Shape of the crystals—colour—effect of exposure—odour—taste—relations to water and alcohol—effects of time upon the aqueous solution—incompatibles.

The best of the antimonials. In small doses, used as an alterative in chronic cutaneous diseases, scrofulous affections, chronic pulmonary complaints, &c.; in somewhat larger doses, as a refrigerant or arterial sedative in febrile and inflammatory complaints, particularly bronchitis and pneumonia, and in hemorrhages. Employment of very large doses in pulmonary inflammations. Acts in this way doubly, 1. as a sedative, 2. by revulsion to the stomach and bowels. Dangers of this mode of using tartar emetic. Poisonous effects. Resemblance to malignant cholera. Treatment.

Dose of tartar emetic as an alterative, from one thirty-second to one-sixteenth of a grain, dissolved in a large proportion of water, and repeated so that from one-fourth to one-half a grain may be taken daily;—as a sedative, from one-twelfth to one-sixth of a grain or more.

Antimonial Wine.—Vinum Antimonii, U. S. Solution of tartar emetic in wine in the proportion of 2 grains to f℥j. Advantages of this preparation, and of wine as a solvent. Caution necessary in the choice of wines. Disadvantages of the inferior varieties. This preparation should be used only in cases requiring small doses of the antimonial.

PRECIPITATED SULPHURET OF ANTIMONY.—ANTIMONII SULPHURETUM PRÆCIPITATUM. *U. S.* Mode of preparation. Mode of preparing *Kermes' mineral* and *golden sulphur of antimony*. Difference between these and the officinal precipitated sulphuret. Colour of the three. Relations to water and alcohol.

Operation upon the system. Therapeutical applications. Dose as an alterative, 1 or 2 grains—as an emeto-cathartic, 5 to 20 grains.

ANTIMONIAL POWDER.—PULVIS ANTIMONIALIS. An imitation of *James's powder*. Mode of preparation. Chemical nature. Colour—taste—smell—insolubility in water. Uncertainty of medicinal effect. Therapeutical applications. Dose, 3 to 8 grains.

SALINE SUBSTANCES.

Almost all the *neutral alkaline salts*, and those in which the acid predominates, are sedative in their influence on the circulation. Usually called refrigerants. They produce this effect independently of their purgative action or influence upon the secretions. But they are chiefly used in reference to these latter effects, and only incidentally as refrigerants or sedatives. Therefore more properly treated of under other heads. One of them only so prominently sedative as to require consideration here.

NITRATE OF POTASSA.—POTASSÆ NITRAS. *U.S.—Nitre. Saltpetre.* Whence imported. Mode in which prepared. Artificial nitre beds. State as imported. Mode of refining.

Shape of crystals—colour—odour—taste—solubility in water—insolubility in alcohol—absence of water of crystallization—water mechanically present—effects of heat.

In moderate doses repeated frequently, lessens the force and frequency of the pulse, and diminishes animal heat. Suggestion as to its modus operandi. Stimulates the secretory functions, particularly that of the kidneys—in some measure also that of the skin. Diminishes the energy of the stomach, and causes indigestion. In large doses, it often occasions purging. In very large quantities, poisonous. Effects as a poison. Treatment of its poisonous effects. Given in inflammatory diseases, in which the action is above the standard of health, and in which inflammation of the alimentary mucous membrane is absent. Particular applications. Dose, 5 to 10 grains every hour or two hours. Given in powder or solution.

Often combined with tartar emetic, in the proportion of 5 or 10 grains of nitre to one-twelfth or one-sixth of a grain of the antimonial, in solution. Often also with calomel in addition. Composition of the *nitrous powders*.

VEGETABLE ACIDS.

Most of these are refrigerant or sedative to the circulation. Useful, when properly diluted, as drinks in febrile complaints. Too largely given, diminish the vital forces, occasion indigestion, and cause emaciation. Those chiefly used are the citric and acetic acids, in the form of lemonjuice or vinegar. Former usually preferred.

Citric acid contained also in limes, sour oranges, and tamarinds, which are therefore equivalent in effect to lemonjuice.

Modes of preserving lemonjuice. *Citric acid* in solution may be advantageously substituted. Mode of preparing citric acid. Form of crystals. A solution made with ℥j. to Oj. of water, may be used for lemonjuice. Oil of lemons is a good addition, in the proportion of 4 drops to the pint. Mode of mixing. For lemonade, ℈j. of acid may be dissolved in Oj. of water.

Citric acid is best purchased in crystals. Adulterated with tartaric acid. Mode of detecting the latter.

Used as a refrigerant, also as a preventive and cure of scurvy.

Emetic & Cathartic forming Nitrous powder – Sometimes
mistaken for Epsom Salts, & causes nitrous stain in Stomach
vomiting &c it is to be treated with mucilaginous & demulcent
drinks Laudanum & cordials Nitrous Powders

Nit. Potass ℥j
Ant. et Potass Tart. gr j
Hydrarg Chlorid mitis ℔ss vj
in chartulas sex dividendus

Citric Acid

Saturate the juice by Carb. of Lime in fine powder & let
the citrate of Lime subside – Wash with water &
decompose by dilute Sulph. acid – Strain. Sulph of Lime
subsides & citric acid remains in liquor which is
transferred to other vessels Cooled & Chrystallized – Large
rhomboidal prisms – If any tartaric acid be in the
Juice, the addition of Carb. of Potassa, will produce
the bitartrate of Potass. (cream of tartar)

Foxglove Digitalis Folia

Large hitped leaves, (when dried of a dud pale green) They are ovate pointed 5 about 8 inches long crinkled velvety surfaces of a fine dusk green color. gathered in 2d year & dried separately in the sun. Select those of full size without the foot stalk & midrib. Inodorous in recent state, faint narcotic odor when dried, taste bitter & nauseous powder fine dusk green. Yield virtues to water & alcohol

Narcotic sedative & diuretic. Has sedative action upon the heart. Produces sense of fullness in head, vertigo, dimness, & confusion of mind & over does produces nausea, delirium, convulsions &c. & can best counteracted by brandy, volatile alkali, opium &c. It is accummulative, not a substitute for but good adjuvant to the lancet. Recommended strenuously in comb. both of the medicines in phthisis

Tobacco Tabacum Folia

Yields color odor & taste to water & alcohol, but long boiling destroys their properties, extract of course inert. Nicotin is pure liquid colorless, odor similar to but more disagreeable than tobacco, acrid burning taste & is a most violent poison. A single drop will kill a dog. Empyreumatic oil is of a dark brown color, acrid taste & peculiar smell as imitated by an old tobacco pipe. This also a violent poison. Primary action is on brain, for injection into a decapitated animal has no effect on heart. The nauseating & distressing nausea interferes with its internal use & is chiefly used to produce relaxation of spasm & its action is purely, in form of ointment or cataplasm or ointment. Less dangerous by the stomach than rectum, for in former case it is soon thrown out rejected. The emetic effect may be obtained by applying cataplasm to epigastrium. Ointment used in cutaneous affections.

CLASS VII.

NERVOUS SEDATIVES.

General Observations.

Medicines which, in their primary operation, reduce at the same time the nervous power, and the force of the circulation. All of them obviously affect the functions which belong especially to the brain, and rank with those medicines usually called narcotic. It is doubtful whether their influence on the heart is exerted immediately, or through the intervention of the nerves. They are applicable therapeutically to complaints attended with nervous disorder and unhealthy excitement of the heart and arteries.

FOXGLOVE.—DIGITALIS. *U.S.*

Leaves of the *Digitalis purpurea*—a biennial herbaceous plant, indigenous in Europe, and cultivated in this country. Said to be strongest when it grows in sunny exposures.

Shape of the leaves—size—character of the surface—colour—separation of the footstalks—mode of drying—appearance as prepared by the Shakers—means of judging of the quality—odour in the recent and dried state—taste—colour of the powder—relations to water and alcohol.

Effects upon the system. Influence on the pulse. Direction to the kidneys. Symptoms produced by an overdose. Treatment of its poisonous effects. Permanence of its influence. Disposition to act with accumulated force. Practical inferences. Not to be relied on as a substitute for the lancet. Reason of this. Useful as an adjuvant. Particular therapeutical applications.

Given in substance, infusion, or tincture—most certain in substance. Dose of the powder in chronic cases, 1 grain night and morning—in acute cases, one-half or one-fourth of a grain every 3 or 4 hours. Administered in pill. The *infusion* officinal. Made in the proportion of ℥j. to Oss. of boiling water, with f℥j. of the tincture of cinnamon. Dose, f℥ss. Dose of the tincture, 10 drops, about equivalent to a grain of the leaves. Cautions in relation to the increase of the dose, and perseverance with the medicine.

TOBACCO.—TABACUM. *U.S.*

Leaves of the *Nicotiana Tabacum*—an annual plant—probably a native of tropical America—cultivated in all quarters of the world.

Sensible properties—relations to water and alcohol—effects of long boiling.

Activity thought to reside chiefly in a volatile alkaline principle called *nicotia*. Form, colour, odour, and taste of this principle, and effects upon the system. Another odorous principle. *Empyreumatic oil*, resulting from the destructive distillation of tobacco. Form, colour, taste, and odour of this oil, and its effects on the system.

General effects of tobacco as a nervous sedative. Poisonous action. More dangerous when given by the rectum than when swallowed. Reason of this. Treatment of its poisonous effects. Diuretic, nauseating, and emetic properties.

Seldom given by the stomach. Cases in which it is used as an enema. Given in this way in the form of infusion made with ℥j. to Oj. of water, of which one-half is to be given at once, and the other half in half an hour if necessary. Cases in which tobacco may be used by smoking it. External application in the form of cataplasm, or of cerate made with snuff. Use of tobacco ointment.

HYDROCYANIC ACID.—ACIDUM HYDROCYANICUM. *U.S.*

Also called *prussic acid*. Plants in which it exists. State in which it is obtained from them, and mode of obtaining it. *Cherry laurel water*. Uncertain, and little used here. *Oil of bitter almonds* may be substituted for the diluted hydrocyanic acid. Advantages of the oil.

The concentrated acid is too powerful for use. Also very susceptible of decomposition. The officinal acid is prepared in a diluted state. Mode of preparing it.

Form of the officinal hydrocyanic acid—colour—taste—odour—effects of exposure—mode in which it may be best kept.

Effects on the system. Poisonous effects. Remedial measures. Therapeutical appli-

cations. Dose of the officinal hydrocyanic acid, to begin with, 1 drop every 2 or 3 hours, to be gradually increased if necessary till evidence of its influence is afforded.

Of the strong acid not more than one-twelfth of a drop should be taken at once.

Cyanuret of Potassium. Mode of preparation. Becomes hydrocyanate of potassa when dissolved. This is decomposed by any acid, even the carbonic acid of the air. Hydrocyanic acid is thus liberated. As the cyanuret when dry keeps well, it is a good substitute for the officinal acid. Given in solution with a little vinegar. Dose, one-fourth of a grain gradually increased to a grain.

Prussic Acid

Hydro Cyanic Acid Acidum Hydrocianicum

Though usually a product of art, it is found in the cherry laurel, bitter almond & peach & is separated from them by distillation with water & is combined with volatile oil - The advantage of the oil of bitter almonds is that the acid in the oil is not so liable to decomposition as in other forms, remaining several years unaltered if in well stopped bottles - The officinal acid is prepared by dissolving Cyanuret of mercury in distilled water & saturating the solution with Hydro Sulphuric acid, filter, & then add enough Carb. of Lead. to saturate any excess of the Hydro Sulph. acid & filter again - A transparent colorless somewhat volatile liquid, taste at first cooling, then irritating odor resembling that of bitter almonds, upon exposure to air soon decomposed - Bottle shoulder painted black or covered with paper - Incompatible with nitrate of silver salts of iron copper & mercury - It is the most deadly poison known - Its medical virtues are those of a powerful sedative & has been most used in complaints of the respiratory organs & sometimes externally as wash in cutaneous diseases 3ss to 3ij to f 3ij of water - If called immediately in case of poison administer a strong emetic, if not a purgative enema then an friction with cantharides & ammonia, sinapisms & mucilaginous drinks - a tea spoonful of oil of turpentine occasionally as a stimulant - & if there is cerebral congestion bleeding from the jugular. Berzelius considers diluted aqua ammonia the best antidote - Dr W. recommends mustard for the emetic

Cyanuret of Potassium

Obtained from yellow salt called ferro cyanate of potassa - It is first dried then exposed to heat until nitrogen ceases to be given off by the calcination the cyanuret of iron is decomposed, the cyanuret of potassium remaining unchanged - The cyanuret of potassium is dissolved in cold water leaving the iron powder behind, the solution is evaporated & dryness by the aid of sulphuric acid & this dry mass remaining is the cyanuret in question. It is preeminently poisonous acting powerfully like hydrocyanic acid -

Jackson says that "vomiting is seated in the medulla & is a protective process"

Vegetable substances operate more mildly & with no less power, if combined with some emetic substance[illegible]

Attributes vomiting to the peristaltic motion of the Stomach & relaxation of the oesophagus

"The nausea arising from Ipecac, depends on something volatile. A pill of Ipecac, if dry & hard causing no nausea" Chapman says that

Ipecacuanha Cephaelis Ipecacuanha Radix

Root is 4 c inches, long, [illegible] thickness of a goose quill, with annular wrinkles which is one of its distinguishing characteristics. It descends obliquely into the ground - has a thick cortical covering, which is hard horny semitransparent, with a resinous fracture. Powder of a light grayish fawn color, bitter nauseous odor exciting violent sneezing in some persons, taste bitter acrid very nauseous, yields its virtues, to water & alcohol virtues impaired by decoction. Emetin is precipitated by tannin, which of course renders astringents incompatible - Ipecac, is emetic in large doses, in small diaphoretic & expectorant, exciting the appetite & facilitates

Local Remedies

CLASS VIII.

EMETICS.

General Observations.

Medicines capable of producing vomiting, in certain doses, and as an ordinary result, in the healthy state of the stomach. No immediate effects are produced. In 10, 15, or 20 minutes, nausea comes on, with paleness, a cool, moist, and relaxed skin, and a feeble, frequent, irregular pulse. These symptoms increase till vomiting results. During vomiting, the face is flushed, a sense of fulness in the temples is experienced, and the pulse becomes full and slow. After vomiting, the skin is moist, the pulse soft and feeble, the patient languid and disposed to sleep.

Mechanism of vomiting. Explanation of the mode in which it is produced by emetics. Intervention of the brain necessary. Proofs of this.

Emetics often act on the stomach, when applied to the rectum or the skin.

Said to differ from most other medicines in not losing their power upon repetition. Observations going to show that their difference from other medicines in this respect is only apparent.

The susceptibility to the action of emetics is different in different individuals, and in different diseases. Complaints in which this susceptibility is least, and those in which it is greatest.

Therapeutical effects of emetics included under the following heads: 1. Evacuation of the stomach; 2. Mechanical pressure on the liver and other abdominal viscera; 3. Reduction of arterial action during the period of nausea; 4. Muscular relaxation; 5. Promotion of the secretory functions of the skin, lungs, and liver; 6. Powerful agitation of the whole frame; 7. Revulsion to the stomach; 8. Purgation, when the medicine is given in considerable doses, but insufficient to vomit; 9. Depletion, directly by the promotion of secretion, and indirectly by the removal of the food; 10. Irritation of the stomach. Observations and illustrations under each of these heads.

Two or more indications for the use of emetics are often presented in the same disease.

Circumstances contra-indicating the use of emetics, 1. acute inflammation of the stomach, bowels, or neighbouring viscera, 2. strong sanguineous determination to the brain, and 3. pregnancy in its advanced stages. Caution in cases of hernia, and in the use of acrid or corrosive emetics, in large doses, in insensible states of the stomach.

Usually administered diffused in water, and in doses repeated every 15, 20, or 30 minutes, till the emetic effect is produced.

If the object be merely to evacuate the stomach, warm diluent drinks should be given freely, as warm water or chamomile tea; if to produce a powerful impression on the system, with much retching and nausea, little or no drink should be allowed.

Excessive vomiting relieved by the free use of warm demulcent drinks, followed by laudanum or morphia, a spiced plaster or sinapism over the epigastrium; and if these fail, by an anodyne enema consisting of 60 drops of laudanum with f℥ij. of a solution of starch.

1. *Vegetable Emetics.*

IPECACUANHA.

Root of the *Cephaelis Ipecacuanha*—a small shrub growing in Brazil and other parts of South America.

Character of the root—shape—size—structure—nature of the surface—consistence of the cortical portion—its translucency, fracture, and relative virtues—relative size of the ligneous portion—propriety of rejecting the smooth portions of stem attached to the root—colour of the root—varieties founded on the colour, *brown*, *gray*, and *red*—all from the same plant—no essential difference in them.

White Ipecacuanha—root of the Richardsonia Braziliensis. Distinguishing characters.

Peruvian or *black Ipecacuanha*—root of the Psychotria emetica. Neither of these used in this country.

Colour of the powder of genuine ipecacuanha—odour—peculiar effect in some individuals—taste—relations to water and alcohol—effects of decoction.

Active ingredient, *emetia*, an alkaline principle. Relation to tannin. Inference as to the incompatibility of astringents with ipecacuanha.

Ipecacuanha injured by long exposure to light.

Effects on the system. Character as an emetic. Therapeutical applications.

Dose as an emetic, from 15 to 30 grains—as a nauseating medicine, 2 or 3 grains—as a diaphoretic or expectorant, from one-half a grain to 2 grains—as an alterative, from one-fourth to one-half a grain, 2, 3, or 4 times a day.

There is an officinal *Wine of Ipecacuanha—Vinum Ipecacuanhæ, U. S.*—which may be given as an emetic in the dose of f℥j. to an adult, and f℥j. to an infant, though seldom used for this purpose. More commonly employed in similar doses as a diaphoretic and expectorant.

GILLENIA. *U.S.*

Root of the *Gillenia trifoliata*—an indigenous, herbaceous, perennial plant, called ***Indian physic***, and sometimes *American ipecacuanha*. The root of the *G. stipulacea* has the same properties. The former grows in the Atlantic States, the latter in those of the West.

Shape of the root—size—nature of the surface—colour—difference between the cortical and ligneous part—taste—odour—colour of the powder—relations to water and alcohol.

Character as an emetic. Therapeutical applications. Dose, from 20 to 30 grains.

INDIAN TOBACCO.—LOBELIA. *U.S.*

Lobelia inflata—an indigenous, herbaceous plant. General character of the plant. All parts of it are active. Time of collection.

Colour of the powder—odour—taste—relations to water and alcohol.

Character as an emetic. Poisonous effects. Therapeutical applications. Given in substance, infusion, and tincture. Dose of the powder as an emetic, from 5 to 20 grains. Dose of the tincture—*Tinctura Lobeliæ, U.S.*—in asthma, from f℥j. to f℥ij. every 2 or 3 hours till it acts.

Besides the above emetics, numerous other substances possess the property of producing vomiting, and have been employed for that purpose. Among them may be mentioned the following, viz.

The root of the *Euphorbia Ipecacuanha*, and of the *E. corollata*—indigenous plants—emetic, in the dose of from 10 to 15 grains. Disadvantages.

The root of the *Sanguinaria Canadensis*, or blood-root—another indigenous emetic plant. Shape of the root—colour—colour of the powder—odour—taste. Active ingredient, an alkaline principle called *sanguinarina*. Character as an emetic. Dose of the powder, from 10 to 20 grains—of the tincture, from f℥iij. to f℥ss.

Squill is emetic in the dose of 6 or 8 grains; but is scarcely ever used for this purpose.

Tobacco is also powerfully emetic, but in consequence of the excessive nausea it produces, and its narcotic properties, it is almost never prescribed internally. Dose of the powder, 5 or 6 grains.

Mustard sometimes acts as an emetic, in the form of powder, in the dose of ℥j. Therapeutical application in reference to its emetic property.

2. *Mineral Emetics.*

TARTAR EMETIC.

Before treated of as an arterial sedative. To be considered here only as an emetic and nauseant.

Character as an emetic—certainty, power, durability. It produces much retching and frequent efforts to vomit, makes a strong impression on the neighbouring viscera and the general system, and occasions much relaxation and prostration of strength.

The indications for its use, deducible from its peculiar mode of operating, are, in addition to the evacuation of the stomach, to agitate and compress the liver, spleen, and other abdominal viscera, to divert irritation from its existing seat by a powerful revulsion to the stomach, to break up morbid associations, to produce nausea and consequent relaxation, and to evacuate the duodenum as well as the stomach. Illustrations of these indications in particular diseases. Tartar emetic is more apt than ipecacuanha to act on the bowels.

Medium dose as an emetic, 2 or 3 grains. The best plan is to give 1 grain dissolved in a little water every 15 or 20 minutes till it acts. Often combined with ipecacuanha. A good proportion is 1 grain of the antimonial to 10 of ipecacuanha, repeated as above.

Dose of *antimonial wine*, as an emetic, f℥j., or f℥ss. repeated in 20 minutes if the first dose should not act. Seldom given to adults as an emetic. Dose for a child 1 or 2 years old, from 20 to 40 drops.

ting digestion. It is a mild deffirmal emetic & should be preferred to all others when the object is merely to evacuate the Stomach - No bad effects from over doses, take a tea spoonful must not be particular

of the Wine of Ipecac = 3ij contains the virtues of 30 grs of the powder - Goddard says it loses its emetic principle by combination with the bitter extract of quassia

Gillenia Trifoliata Radix

Grows throughout the United States east of the Alleghanies & Jornal leaves one of its characteristics Root is big of small quill wrinkled longitudinally. Light brown color externally. Ligneous part inside. Powder has bitter not disagreeable taste, light brownish color & feable odor. Boiling water extracts the bitterness - Mild deffi cient emetic in small doses is perhaps, tonic

Indian Tobacco Lobelia Inflata (All parts)

It is an annual or biennial, indigenous plant, with a solitary very hairy stem usually a foot or more in height, branched about half way up. When broken exudes a milky juice Should be collected & carefully dried in August or September, when the capsules are numerous, Powder is of a greenish color, acrid taste & irritating odor Yields virtues to water & alcohol. It is a powerful & disturbing emetic, resembling in its operation to those of Digitalis. Useful in Spasmodic asthma & strangulated hernia

Tartar Emetic Tartrate of antimony & Potassa

The full dose is a certain strong & permanent emetic

Sulphate of Zinc

Should not be used indefinitely for it may induce violent inflammation of the Stomach

SULPHATE OF ZINC. 1038

The tonic and astringent properties of this salt before treated of.

Characterized as an emetic by its promptness, and the comparatively little nausea which it produces. Exerts less influence over the system than tartar emetic, and therefore less extensively applicable in disease. Used chiefly as a mere evacuant of the stomach in cases requiring a prompt and energetic emetic, as in those of the narcotic poisons. Under such circumstances, it should be combined with ipecacuanha. Dose, 10 grains under ordinary circumstances; but, in cases of insensibility of stomach from narcotic poisons, ʒss. Reason why it should not be indefinitely increased in such cases.

SULPHATE OF COPPER. 266

Before considered in reference to its tonic properties. As an emetic, characterized by its very great promptness, and by the very slight nausea which attends its action. Resembles in properties the last mentioned salt, though even more prompt and powerful. Used almost exclusively in narcotic poisons. Dose from 2 to 3 grains in ordinary states of the stomach—in poisoning from narcotics, from 5 to 15 grains. Caution as to increasing the dose more necessary even than with the sulphate of zinc.

Many other mineral substances possess emetic properties. The acrid or corrosive poisons, such as corrosive sublimate, verdigris, and the arsenical salts, when taken in large doses, usually excite vomiting. But they are dangerous, and are never used for this purpose.

The *Turpeth mineral*, or *yellow sulphate of mercury* has been used, but is now abandoned. It usually proves emetic in the dose of 5 grains, but is uncertain.

most of the acrid mineral & vegetable are Emetic in their properties - but they are uncertain -

CLASS IX.

CATHARTICS.

General Observations.

Medicines which produce evacuations from the bowels. They operate in various ways; —1. by simply irritating the mucous membrane of the bowels, the muscular coat of which is brought into sympathetic action; 2. by stimulating the exhalent vessels and mucous follicles of the intestines to increased secretion; and 3. by a similar stimulant influence upon the liver, and perhaps the pancreas. Some cathartics act in one of these ways, some in another, and some combine two or more modes of action.

Cathartics differ as to the parts of the alimentary canal on which they act, some affecting the upper portion more particularly, some the lower, and others operating equally on all parts. This difference is partly, perhaps, ascribable to difference in solubility; but is chiefly owing to the peculiar susceptibilities of different portions of the bowels.

The character of the discharges varies with the kind of cathartic used. Medicines acting on the large intestines produce consistent fecal evacuations, those acting chiefly on the peristaltic motion discharge the liquid contents of the bowels, those which stimulate the exhalents give rise to large watery evacuations, and are hence called *hydragogues*, while calomel, acting especially on the liver, produces bilious stools. Mucous or bloody stools result from the use of more violent and irritating cathartics.

Cathartics differ greatly in their power. Some act mildly, merely producing looseness, and are hence called *laxatives;* others act with greater energy, and are called *purges;* and a third set, which are most powerful and irritating, are distinguished by the name of *drastics* or *drastic purges.* Observations upon this difference.

Cathartics are useful in disease in several ways.

1. They evacuate the bowels, and thus relieve constipation and all its attendant evils, as well as remove irritating substances, and those having a depressing influence on the system, whether introduced by the mouth, or resulting from chemical changes going on in the alimentary canal, or the product of deranged secretion. Explanations and numerous illustrations of this action of cathartics.

2. They directly deplete from the blood-vessels, by increasing the action of the intestinal exhalents, and thus reduce arterial excitement, and they indirectly deplete by removing the sources of the chyle by which the constant drains from the blood-vessels are supplied. Hence their use in almost all febrile complaints of an inflammatory character, in plethoric cases, and in inflammations even unattended with fever.

3. They promote absorption by diminishing the quantity of the circulating fluid, and thus prove useful in dropsy.

4. They act powerfully as revulsives, producing a gentle irritation over the whole tract of the alimentary canal, which while it is usually safe to the patient from its mildness, is energetic in its revulsive influence by its extent. Peculiarly useful in this way in affections of the head, they are beneficial also in all cases of local inflammation, except those in which the alimentary canal itself is involved in the disease.

5. Some cathartics act favourably by increasing secretion from the liver, and thus relieving congestion of this viscus, and of the portal system generally.

It often happens in disease that cathartics are called on to meet several indications in the same case.

General observations on the importance of cathartics.

The action of the different cathartics modified by combination. By mixing several drastics together, they become milder in regard to their irritant property, without losing any of their purgative power. Explanations of this fact.

Small doses of emetic medicines promote the operation of cathartics. The same effect is produced to a certain extent by bitters.

Cathartics are sometimes favourably modified by combination with substances which exert a chemical agency upon them.

Their tendency to gripe may be lessened by combination with aromatics—and their nauseating effects by the same medicines, and by carbonic acid water.

Cathartics operate most speedily and favourably when given on an empty stomach.

Susceptibility to their action is diminished during sleep, and is increased by exercise.

Wood does not believe that fevers depend on in
flammation of gastric or alimentary mucous surfaces

He urges the employment of cathartics in bilious fev

Manna Fraxinus ornus Succus Concretus

The juice exudes spontaneously during the hot months & is facilitated by making incisions in the bark, on one side of the tree one year & on the other side the next, alternately for 30 or 40 yrs. Flake manna is rough light porous brittle of a yellowish white color & concave on the side next the trunk - Common manna collected late in season does not concrete so readily & falling on the ground is mixed with impurities & is not so good or pure as flake manna, Fat manna is collected still later, & when the rains are more common & flows down the trunk into a small excavation at its base. Odor slight, taste sweet (manna in impure kinds) is fusible, & burns with a blue flame, soluble in water & alcohol - Mannite is obtained by boiling manna in alcohol. It is white, no odour, sweetish, soluble in cold water, hot alcohol - It is not susceptible of the vinous fermentation - It is a gentle laxative, sometimes however causing flatulence & pain

Tamarinds are useful in febrile complaints -

Purging Cassia Cassia Fistula Fructus

The pods are a foot or more long, straight-cylindrical, ½ inch in diameter, the shell of a dark brown color - Divided into cells, lined with a dark brown pulp - Each cell contains a seed - The pulp has a sweet taste & is extracted by bruising the pods & boiling the mass in water - It has a slight sickly odor - It is very apt to produce griping -

Castor oil Oleum Ricini

It is a native of the East Indies & Northern Africa but is cultivated all over the world - Seeds are size of a small bean oval smooth & shining, grayish color, marbled with brown spots & veins - The color depends on a pellicle which invests a hard thick brittle shell, within which is the kernel - The oil is obtained by decoction, cold expression & alcohol - It differs from most of the fixed oils in being wholly soluble in alcohol & by this means adulterations may be detected - It is a mild cathartic & is the best & safest for children - Useful in dysentery diarrhea & colic, particularly the last with the addition of laudanum

Most of the fixed oils are laxative - Table spoonful of melted butter (melted over hot water) is sometimes used as a laxative -

Rhubarb Rheum

Dug up at the age of 6 years - It is deprived of the cortical portion & large branches, cut into pieces & dried - Comes from Canton St Petersburg & Europe

Russian Rhubarb is the best, Each pc undergoes inspection

Hence, when a very prompt effect is desirable, they should be given in the day time, on an empty stomach; when a slow operation, with as little inconvenience to the patient as possible, is required, they should be given at bedtime.

During their operation, or before it, the patient should drink some mild diluent beverage, as molasses and water, barley-water, oatmeal gruel, &c.

Hypercatharsis may be checked by from 5 to 15 drops of laudanum by the mouth, or three times the quantity administered by the rectum.

1. *Vegetable Cathartics.*

Observations in relation to *bran*, *sugar*, and *molasses*, as laxative articles of diet.

MANNA. *U.S.*

Concrete juice of the *Fraxinus Ornus*, and other species of *Fraxinus*, growing in Sicily, the South of Italy, and Greece. Mode in which the manna is procured. Difference in the result according to the season. Three varieties of manna described; 1. *flake manna*, 2. *common manna*, 3. *fat manna*. Distinguishing characters of these varieties.

Odour of manna—taste—relations to water and alcohol—effects of heat.

The saccharine principle peculiar. Called *mannite*. Mode of preparing mannite—colour—taste—solubilities—difference from sugar in relation to the process of vinous fermentation.

Characters of manna as a cathartic. Therapeutical applications. Dose, ℥j. or ℥ij. Usually given in combination.

SACCHARINE AND ACIDULOUS FRUITS.

General observations on these fruits in their recent and dried state. The following particularized:—*Dried Peaches and Apples*, *Tamarinds*, *Raisins*, *Figs*, and *Prunes*. The last considered as the best of these fruits as a laxative. Cases in which they are particularly applicable.

PURGING CASSIA.—CASSIA FISTULA. *U.S.*

Fruit of the *Cassia Fistula*—a large tree growing in the West Indies and East Indies.

Character of the fruit—shape and size—colour—internal structure—disposition of the pulp.

Mode of extracting the *pulp*—its colour, odour, and taste—its character as a cathartic—and its therapeutical applications. Dose as a gentle laxative, ʒj. or ʒij.—with a view to a more powerful effect, ℥j. or ℥ij. Seldom given alone. An ingredient of the Confection of Senna.

CASTOR OIL.—OLEUM RICINI. *U.S.*

Product of the *Ricinus communis*. Character of the plant—native place—where cultivated.

Shape and size of the seeds—colour of the surface—internal structure—modes of extracting the oil.

Properties of the oil—consistence—colour—odour—taste—solubility in alcohol. Mode of detecting adulterations.

Characters as a cathartic. Therapeutical applications. Dose for an adult, f℥j.—for a child of three or four months, fʒj. or more. The dose is larger in proportion for children than for adults. Modes of administration.

Observations in relation to *Olive Oil*, *Linseed Oil*, and *Melted Butter*.

RHUBARB.—RHEUM. *U.S.*

The root of different species of *Rheum*—possibly of the *R. palmatum*, *R. compactum*, and *R. undulatum*—herbaceous perennial plants, growing in Central Asia, and cultivated in Europe.

Age at which the root is dug up—preparation for the market—routes by which it reaches us. Varieties, 1. *Russian*, 2. *Chinese*, and 3. *European Rhubarb*.

Russian Rhubarb. Care in its preparation—shape of the pieces—nature of the surface—character of the hole penetrating them—texture—fracture—colour—colour of the powder—odour—taste—effect on the saliva—feel under the teeth—comparative cost.

Chinese Rhubarb. Shape and size of the pieces—object of the hole through them—appearance of the surface—texture—internal colour—colour of the powder—odour—taste—effects on the saliva—feel under the teeth. This variety most used. Its comparative value. Its greater liability to be mixed with worm-eaten, rotten, or defective pieces.

European Rhubarb. Shape and size of the pieces—density—appearance of the fractured surface—colour of the powder—odour—taste—effect on the saliva—feel under the teeth. Inferior to the others as a purgative; but sometimes preferred for chewing. Reason of this.

Chemical constitution of rhubarb. The active ingredients probably a peculiar principle called *rhubarbarin* and *tannin.* Other principles are gum, starch, oxalate of lime, &c. The European has most tannin, and least of the colouring and purgative principle.

Relations of rhubarb to water and alcohol.

Peculiar properties as a cathartic. Therapeutical applications. Cases in which it is contra-indicated. Dose as a stomachic and laxative, from 5 to 10 grains—as a purgative, from 20 to 30 grains. That of the European variety, double. Given in powder with syrup or molasses, or in pill made with soap or simply with water. The root chewed habitually by some persons affected with costiveness.

The officinal preparations are, *Infusion of rhubarb, Infusum Rhei, U.S.—Tincture of Rhuburb, Tinctura Rhei, U.S.*, given as a laxative in the dose of f℥j. or f℥ij., as a purge f℥ss. or f℥j.—*Tincture of Rhubarb and Aloes, Tinctura Rhei et Aloes, U.S.*, formerly called *elixir sacrum*, given in the same dose as the preceding—*Tincture of Rhubarb and Gentian, Tinctura Rhei et Gentianæ, U.S.*, in the same dose—*Tincture of Rhubarb and Senna, Tinctura Rhei et Sennæ, U.S.*, commonly called *Warner's Gout Cordial*, in the same dose—*Syrup of Rhubarb, Syrupus Rhei, U.S.*, given in the dose of f℥j. or f℥ij. to children—*Syrup of Rhubarb and Senna, Syrupus Rhei et Sennæ, U.S.*, given in the same dose, but somewhat stronger—and *Aromatic Syrup of Rhubarb, Syrupus Rhei Aromaticus, U.S.*, commonly called *spiced rhubarb*, also given in the same dose.

Effect of roasting on the purgative and astringent properties of rhubarb.

SENNA. *U.S.*

Leaves of several species of Cassia, viz. *C. acutifolia, C. obovata*, and *C. elongata*—small shrubs growing in Africa and Arabia. Three commercial varieties—*Alexandria, Tripoli*, and *India senna.*

1. *Alexandria senna.* Place of collection and preparation for market—port of shipment—constituents—distinguishing characters of the constituents.

2. *Tripoli senna.* Place of export—distinguishing characters.

3. *India senna.* Origin—commercial history—distinguishing characters.

Garbling of senna—its odour—taste—colour—colour of the powder—relations to water and alcohol—effects of exposure.

Active ingredient, a peculiar principle called *cathartin.*

Character as a cathartic. Therapeutical application. Dose of the powder, ℥j. Seldom used in this form. Generally given in infusion. Officinal formula for the infusion. Dose, f℥iv. every 4 or 5 hours till it operates, or f℥ij. every 2 hours. Mode of counteracting its griping effect. The *Tincture of Senna and Jalap—Tinctura Sennæ et Jalapæ, U.S.*—formerly called *elixir salutis*, given in the dose of f℥ij. or f℥ss.

Confection of Senna—Confectio Sennæ, U.S. Constituents—preparation—sensible properties—practical applications—dose, ℥j. to ℥ss.

AMERICAN SENNA.—CASSIA MARILANDICA. *U.S.*

Leaves of the *Cassia Marilandica*—an indigenous herbaceous plant. Period for collecting the leaves. Shape, size, and sensible properties—relations to water and alcohol.

Similar to senna in virtues and uses, but weaker. Given in infusion. Dose, one-third greater than that of senna.

EXTRACT OF BUTTERNUT.—EXTRACTUM JUGLANDIS. *U.S.*

Extract of the inner bark of the root of the *Juglans cinerea*—an indigenous tree.

Sensible properties of the bark—mode of preparing the extract—its colour, odour, and taste.

Character as a cathartic. Therapeutical applications. Dose, 20 or 30 grains as a purgative, 10 or 12 grains as a laxative.

ALOES.—ALOE. *U.S.*

Inspissated juice of the leaves of different species of *Aloe*—particularly the *A. spicata, A. Socotrina*, and *A. vulgaris.* Character of these plants. Native places, and countries in which they are cultivated. Different modes of collecting and preparing aloes. The mode which yields the best, and that which yields the worst aloes. Three commercial varieties, viz. *Cape Aloes, Socotrine Aloes*, and *Hepatic Aloes.*

1. *Cape Aloes.* The plant which yields it—mode of preparation—place of export—state in which it is imported—state as kept in the shops—appearance of the surface—fracture—colour of the fracture—translucency of the edges—colour of the powder—odour—taste—effects of heat and cold on its consistence.

by an apothecary if not good is thrown into the flames
pieces are irregular & angular, broken smoother & pitchers, the hole is large & evidently made for inspection, less compact & heavy than Chinese, color more lively inside than out, powder bright yellow odor aromatic, taste bitter & astringent, stains saliva yellow, gritty crackling sensation when chewed - This variety is the most costly

Chinese Rhubarb is in cylyndrical or roundish, somewhat flattened pieces, hole is for convenience of suspension, surface is of a dirty yellow color & looks as if scraped, close compact texture, internally variegated red yellow & white, powder yellowish with a tinge of orange, aromatic odor bitter astringent taste, colors saliva yellow & feels gritty when chewed - The most used, it is not so valuable as the Russian variety, & more liable to injury from worms -

European Rhubarb is in pieces longer than they are thick, sometimes flat, sometimes cylyndrical - Texture more ligneous than the Asiatic varieties & its powder also is more strongly tinged with red, odor nauseous, taste astringent, scarcely feels gritty when chewed & colors the saliva but little - Rhubarb yields all its virtues to water & alcohol - Boiling impairs its virtues Its peculiar property consists in the union of an astringent with its cathartic power, the purgative effect however preceding the other so that they do not interfere - It is tonic & stomachic invigorating the digestive powers & producing fecal rather than watery discharges - Not applicable when there is much inflammatory action, Aromatics counteract its griping effect. Roasting or boiling diminish its purgative property without affecting its astringency

Senna — Folia

Alexandria Senna is collected & prepared at Cairo & shipped to us from Alexandria - This variety contains leaves of the Cynanchum, which are longer & regular at the base, whereas the true Senna leaves are always oblique at the base - This distinction is important because the Cynanchum causes Hypercatharsis & much irritation of the bowels - Tripoli Senna contrary to the general opinion is not impure - may be distinguished by the broken character of the leaves, which are also all of them of one variety - Tripoli is its place of export - India Senna tho' so called is not the growth of that country - Easily distinguished by their great length, similarity & comparative narrowness It is garbled by rejecting the leaf stalks pods & foreign substances leaves &c. Odor is faint & sickly, taste slightly bitter brackish & nauseous - Yields virtues to water & alcohol - It is a prompt efficient & very safe purgative & its effect is increased by combination with bitters - Useful in fevers & febrile complaints - The powder moulds on exposure to air - Infusion made by ℨi of Senna to a pint of water & Coriander Seed ℨi

Confection of Senna is compounded of Senna, Cori

Jalap Ipomoea Jalapa Radix

Grows in Xalappa Vera Cruz - a round smooth vine twining upon any near object - The root is a roundish pear shaped tuber, black externally, white internally, with long fibres proceeding from it Comes in bags of one or two hundred pounds Tubers when dried are smaller than fist, & incised to facilitate the drying - heavy, compact, externally brown & wrinkled, shining undulated fracture of a grayish color, powder yellowish gray, odor nauseous, rather nauseous, taste bitterish acrid & disagreeable - Yields virtues partly to water & alcohol - When worm eaten it is more powerfully purgative, as they eat the soft parts & leave the resin It is an active cathartic producing copious watery stools - Requires both water & alcohol to dissolve it - Hydragogue powers useful in dropsy &c - Resin of Jalap irritates the mucous membrane

The Extract of Jalap Made by adding Jalap to alcohol & boiling down the residue with water - This Ext. is of a dark brown color translucent at the edges & tenacious if not perfectly dry -

May Apple Podophyllum Peltatum Radix

It has 2 large peltate leaves, fruit is oval containing a reticulated fleshy pulp - Dried root two lines thick, wrinkled longitudinally, yellowish or reddish brown, fibres rather pale reticulated, brittle, nauseous & inodorous, powder yellowish gray like Jalap - yields virtues to water & alcohol It is hydragogue & drastic - Applicable to inflammatory affections which require brisk purging -

Scammony - Convolvulus Scammonia Radix

Perennial tapering root 3 or 4 feet long & a foot in circumference - Native of Syria - Juice prepared in same way as the assafoetida - But it is very impure -

Aleppo Scammony comes in drums, heavy, porous, shining fracture, dark olive color, darker on exposure edges translucent, odor like that of cucumber taste is

2. *Socotrine Aloes.* The plant which yields it—place of production—place of export—colour and nature of the surface—fracture—effects of exposure on the colour—translucency of the edges—colour of the powder—odour—taste—effects of heat and cold on its consistence.

3. *Hepatic Aloes.* Origin of the name—sources—places of production—colour—nature of the surface—edges—odour—colour of the powder.

Chemical constitution of aloes. The active part, a peculiar extractive matter. Relations of this principle to water and alcohol. Change produced in it by exposure to air, and by heat. A little volatile oil in the Socotrine aloes. Character of the remaining portion.

Relations of aloes to water and alcohol—effects of decoction upon it—permanence of the infusion.

Characters as a cathartic. Tendency to the pelvic viscera. Mode of operating. Complaints in which it is contra-indicated. Therapeutical applications. Peculiarity as to the dose. As a laxative, given in the dose of from 2 to 6 grains—as a purgative, from 10 to 15 grains. Usually administered in pill.

The officinal preparations are, *Pills of Aloes and Assafetida*, *Pilulæ aloës et Assafœtidæ*, *U.S.*, given in the dose of from 10 to 20 grains—*Pills of Aloes and Myrrh*, *Pilulæ Aloës et Myrrhæ*, *U.S.*, sometimes called *Rufus's Pills*, given in the same dose—*Compound Pills of Rhubarb*, *Pilulæ Rhei Compositæ*, *U.S.*, in the same dose—*Powder of Aloes and Canella*, *Pulvis Aloës et Canellæ*, *U.S.*, commonly called *hiera picra*, in the same dose—*Tincture of Aloes*, *Tinctura Aloës*, *U.S.*, given in the dose of f℥ss. to f℥iss.—*Tincture of Aloes and Myrrh*, *Tinctura Aloës et Myrrhæ*, *U.S.*, formerly called *elixir proprietatis*, given in the dose of f℥j. or f℥ij. as a stomachic and laxative—and *Wine of Aloes*, *Vinum Aloës*, *U.S.*, laxative in the dose of f℥j. or f℥ij.—cathartic in that of f℥ss. to f℥j.

JALAP.—JALAPA. *U.S.*

Root of the *Ipomœa Jalapa*. Place of growth. General character of the plant. Nature of the root.

States in which it is imported—shape and size of the dried tubers—compactness—nature and colour of the surface—character of the fracture—colour internally—concentric arrangement of the colours—colour of the powder—odour—taste—relations to water and alcohol—chemical composition—adulterations—influence of worms upon its activity—relative power of its resinous and mucilaginous portions.

Character as a cathartic. Therapeutical applications. Ordinary combinations. Dose, 15 to 30 grains. Effects of an overdose. Dose of jalap and supertartrate of potassa, from 10 to 20 grains of the former with from ℥j. to ℥ij. of the latter. Dose of calomel and jalap, 10 grains of each—or 5 grains of the former to 15 of the latter. Dose of the resin of jalap, 8 or 10 grains. Disadvantages of this preparation.

The *Extract of Jalap*, *Extractum Jalapæ*, *U.S.* Mode of preparation—sensible properties—dose, 10 to 20 grains. The tincture, *Tinctura Jalapæ*, *U.S.*, is little used.

MAY-APPLE.—PODOPHYLLUM. *U.S.*

Root of the *Podophyllum peltatum*—an indigenous plant. General character of the plant. Nature of the fruit. Asserted poisonous nature of the young shoots.

Shape and size of the dried root—colour—colour of the fibres—taste—odour—colour of the powder—relations to water and alcohol.

Character as a cathartic. Remedial applications. Dose and forms of administration the same as those of jalap.

SCAMMONY.—SCAMMONIUM. *U.S.*

Inspissated juice of the root of the *Convolvulus Scammonia*. Character of the plant. Place of its growth. Mode of collecting and preparing the juice. Commercial varieties, *Aleppo* and *Smyrna Scammony*.

Aleppo Scammony. State in which it is imported—weight—consistence—fracture—porosity—colour—effects of exposure on the colour—translucency of the edges—odour—taste—colour of the powder.

Smyrna Scammony. Shape—colour—consistence—fracture—odour—relative value—question as to its origin. *Montpellier Scammony. Factitious Scammony.*

Relations of scammony to water and alcohol—chemical composition.

Character as a cathartic. Therapeutical applications. Seldom given alone. Usually in the compound extract of colocynth. Dose, 5 to 10 grains. There is an officinal confection, little used.

BLACK HELLEBORE.—HELLEBORUS NIGER. *U.S.*

Root of the *Helleborus niger*. General character of this plant, and place of its growth.

Shape of the root—colour externally and internally—odour—taste—effects of time and exposure—colour of the powder—relations to water and alcohol—effects of long boiling.

Character as a cathartic. Effects of an overdose. Tendency to the uterine system. Therapeutical applications. Sometimes called *melampodium*. Dose of the powder, from 10 to 20 grains—of the decoction, made with 2 drachms to a pint of water, f℥j. every 4 hours till it operates—of the tincture, *Tinctura Hellebori Nigri, U.S.*, f℥j.—of the extract, 12 or 15 grains. The last is not an eligible preparation.

COLOCYNTH.—COLOCYNTHIS. *U.S.*

Fruit of the *Cucumis Colocynthis*. General character of the plant. Place of its growth. Character of the fruit. Mode of preparing it for market.

Size and shape of the fruit as in the shops—colour—texture—consistence—constituents—relative amount of the seeds—odour—taste—relations to water and alcohol.

Active ingredient, a peculiar bitter principle called *colocyntin*.

Character as a cathartic. Effects of overdoses. Therapeutical applications. Dose, 5 to 10 grains. Almost always given in composition.

The compound extract—*Extractum Colocynthidis Compositum, U.S.*—a valuable remedy. Constituents. Dose, 10 to 15 grains.

GAMBOGE.—GAMBOGIA. *U.S.*

Inspissated juice of a tree not certainly known to botanists. Supposed origin from the *Stalagmitis Cambogioides* or *Garcinia Cambogia*. Place and mode of collection. Places whence imported.

Shape and size of the pieces—nature of the surface—colour externally—appearance of the fracture—colour of the powder—odour—taste—effects of heat—chemical composition—relations to water and alcohol.

Character as a cathartic. Disposition to produce vomiting. Therapeutical applications. Dose, 3 to 6 grains, given in pill or emulsion.

Compound Cathartic Pills—Pilulæ Catharticæ Compositæ, U.S. Constituents. Principles of their formation. Applications. Dose, 3 pills.

ELATERIUM. *U.S.*

Product of the *Momordica Elaterium* or *squirting cucumber*. General character of the plant. Place of its growth and culture. Character of the fruit. Modes of obtaining elaterium. The best of these. Clutterbuck's elaterium.

Shape of elaterium—colour—appearance of the surface—weight—texture—taste—odour.

Active ingredient, a peculiar principle called *elaterin*.

Character of elaterium as a cathartic. Danger from overdoses. Therapeutical application. Dose of the purest, an eighth of a grain—of the common, half a grain every half hour or hour till it operates. The best plan is to commence, as a general rule, with one-sixth or one-fourth of a grain. Dose of elaterin, from one-sixteenth to one-twelfth of a grain.

CROTON OIL.—OLEUM TIGLII. *U.S.*

Product of the *Croton Tiglium*. General character of this plant. Place of its growth. Shape, structure, colour, and medical effects of the seeds. Formerly called *Grana Molucca* and *Grana Tiglia*. Mode of obtaining the oil from the seeds.

Consistence of the oil—colour—odour—taste—solubility in alcohol—chemical constitution—proportion of the active principle to the inert oil—adulterations—mode of detection.

Character as a cathartic. Effects of an overdose. Therapeutical applications. Dose, 1 or 2 drops. Administered in pill. Mode of preparing the pill.

Effects of its external application. Remedial uses in this way. Mode of application.

2. *Mineral Cathartics.*

SULPHUR. *U.S.*

Origin of crude sulphur or *brimstone*—mode of preparation—places from which it is imported—mode of preparation for medical uses. Called when prepared, *flowers of sulphur*, *sublimed sulphur*, *washed sulphur*.

Form—colour—odour—taste—insolubility in water and alcohol—solubility in volatile and fixed oils—chemical nature.

Peculiarities as a cathartic. Determination to the surface. Alterative action. Proofs of its absorption. Used in costiveness with piles, in dyspepsia, chronic rheumatism and

bitterish slightly acrid, powder [illegible] gray.

Smyrna Scammony flat cakes darker more compact heavier than Aleppo variety, dull earthy fracture, odor disagreeable origin uncertain, inferior to the Aleppo. partly dissolved by water, more so by alcohol & wholly by diluted alcohol It is a gum resin - Drastic - Used in torpid bowels in the form of an emulsion -

Black Hellebore Helleborus Niger Radix

This root is perennial, knotted, black outside, white within & sends off long depending fibres, which become darker by drying - The footstalks of the leaves spring from the root. A native of the mountainous regions of Southern Europe - The fibres from the root are the best, they have but little smell, taste bitterish nauseous & acrid. This acrimony diminished by exposure & age - Yields virtues to water & alcohol, long boiling injures - Drastic hydragogue, also emmenagogue. Overdoses inflame mucous membrane - Used mostly as an emmenagogue

Colocynth Cucumis Colocynthis Fructus

Very similar to our common cucumber, native of Turkey grows in Africa & Asia, fruit globular, size & color of small orange, gathered in Autumn, peeled & dried quickly In shops as whitish balls light & spongy, seeds constitute 3/4 its weight & are inert - Pulp only used, feeble odor taste intensely bitter - Yields virtues to water & alcohol - Drastic hydragogue, large doses causing violent inflammation Useful in Dropsy & congestion of portal circle - An ingredient in the compound cathartic pills Extract made by Extract[ing] virtues with diluted alcohol & adding scammony soap & aloes evaporate & add cardamom - sometimes called Cathartic Extract

Gamboge Gambogia Succus Concretus

Collected in Siam & Cochin China, by breaking off the leaves & young shoots, rolling the concrete juice which exudes into cylinders & wrap in leaves - Imported from Canton & Calcutta, Cylindrical rolls 1 or 2 inches in diameter, sometimes flattened, surface striated color externally dull orange, fracture smooth & shining, powder bright yellow, inodorous, but little taste, burns with much smoke It is a gum resin, diffusible in water, forming yellow opaque emulsion, Entirely soluble in alcohol - Drastic hydragogue - Used in Dropsical affections

Compound Cathartic Pills - are composed of Colo[cynth] ...

Carbonate of Magnesia Magnesiae Carbonas

Sometimes occurs as native mineral, but rarely. Prepared by adding Solution of Crystallized Carb. of Soda to a solution of Sul phate of magnesia - the precipitation is assisted by boiling & then washed, drained, & pressed into Square Compact forms, very light white, smooth, inodorous, insipid, insoluble in water & in Carbonic acid water, which last renders it unpleasant to taste - Then Equiv. of Carb. & one of hydrate of magnesia. Adulterations, Carb. of lime, & iron - It is antacid & becomes cathartic by combining with acid in stomach - Flatulence caused by extrication of Carbonic acid

Magnesia - Calcined Magnesia Magnesia Usta

Obtained by heating the Carb. until ceases to produce no effervescence Taste feebly alkaline. Almost insoluble in water - It is a Metallic oxide. If any Mag. is much more dense, it may be from trituration, or from the intense heat used in calcining - The latter is an objection, for by it, its solubility in acids is diminished Does not occasion flatulence & may given in smaller doses, than the Carb: (In shops in form of white powder - Tasty & not unpleasant Requires 60 parts of cold water to dissolve it. Addition of Extract will render it more soluble)

gout, chronic catarrh, cutaneous affections, &c. Dose as a laxative, ʒj. or ʒij.—with a view to affect the system at large, somewhat less.

Used externally in psora, in the form of ointment. Mode of preparing the ointment. Sometimes applied in the form of vapour. Mode of application. Observations in relation to sulphur springs.

Precipitated Sulphur—Sulphur Præcipitatum, U.S.—Lac sulphuris, or *milk of sulphur.* Mode of preparation. Chemical nature. Impurity and its source. Dose, the same as that of sulphur.

CARBONATE OF MAGNESIA.—MAGNESIÆ CARBONAS. *U.S.*

Sources and mode of preparation. Form, as found in the shops—weight—colour—feel—odour—taste—relations to water and to water impregnated with carbonic acid—chemical nature—adulterations.

Peculiarities as a cathartic. Antacid property. Liability to occasion flatulence. Sometimes preferable to the pure earth from its insipidity. Therapeutical applications. Full dose, ʒij. Often given in smaller quantity.

MAGNESIA. *U.S.*

Sometimes called *calcined magnesia* or *magnesia usta.* Mode of preparation. Means of ascertaining the absence of carbonic acid.

Form—colour—taste—odour—relation to water—chemical nature. Peculiarities of Henry's magnesia.

Character as a cathartic. Antacid property. Possibility of accumulation in the bowels. Therapeutical applications. Dose for an adult, ʒj.—for a child two years old, from 10 to 20 grains. Often combined with rhubarb in bowel complaints. Best mode of preparing magnesia for administration.

Saline Cathartics.

Not all mineral, but too much alike to be separated.

Intermediate in power between laxatives and active purges. Act upon the intestinal exhalents and produce watery evacuations. At the same time operate as arterial sedatives. Occasion as little uneasiness in their action as any other cathartics. Adapted by these properties to inflammatory and active febrile complaints. Contra-indicated in typhous complaints. Closely resemble each other in properties, so that one may frequently be safely substituted for another.

SULPHATE OF SODA.—SODÆ SULPHAS. *U.S.*

Commonly called *Glauber's salts.* Sources and modes of preparation. Chemical composition.

Shape of crystals—effects of exposure—proportion of water of crystallization—taste—solubility in water—effects of heat.

Less used than formerly. Dose of the crystallized salt, ℥j. to ℥ij.—of the effloresced, half the quantity. Mode of administration.

SULPHATE OF MAGNESIA.—MAGNESIÆ SULPHAS. *U.S.*

Commonly called *Epsom salt.* Sources and modes of preparation. Chemical composition.

Size and shape of the crystals as ordinarily found in the shops—proportion of water of crystallization—effect of exposure—solubility in water—taste.

The neutral salt usually preferred as a cathartic. Dose, ℥j. or more. Mode of administration. Advantage of solution in carbonic acid water.

SULPHATE OF POTASSA.—POTASSÆ SULPHAS. *U.S.*

Formerly called *vitriolated tartar.* Mode of preparation. Chemical composition.

Shape of the crystals—hardness—use on account of their hardness—solubility in water—effect of heat—taste.

Little used as a cathartic. Difficult solubility an objection. Dose, ℥ss. or ʒvj.

SUPERTARTRATE OF POTASSA.—POTASSÆ SUPERTARTRAS. *U.S.*

Frequently called *cream of tartar*, and *crystals of tartar* when crystallized. Chemically, a *bitartrate of potassa.* Source of this salt, and mode of preparation. Imported in the state of crystals. Appearance of these crystals.

Form of the salt as kept in the shops—taste—solubility—effect of time and exposure on the solution.

Peculiarities as a cathartic. Hydragogue properties. Direction to the kidneys. Degree of its sedative or refrigerant power. Therapeutical applications. Particularly useful in dropsy. Dose, ℥ss. to ℥j. Mode of administration. Given in solution as a laxative refrigerant drink, sweetened with sugar. Often combined with jalap.

TARTRATE OF POTASSA.—POTASSÆ TARTRAS. *U.S.*

Formerly called *soluble tartar*. Mode of preparation. Chemical composition. No water of crystallization.

Form—colour—effects of exposure—solubility—effects of heat—effects of acids and acidulous salts.

Little used at present. Dose, from ℥ss. to ℥j.

TARTRATE OF POTASSA AND SODA.—SODÆ ET POTASSÆ TARTRAS. *U.S.*

Commonly called *Rochelle salt*. Mode of preparation. Chemical composition.

Shape and size of the crystals—effects of exposure—proportion of water of crystallization—taste—effects of heat—solubility.

An excellent cathartic. One of the least unpleasant to the taste of the neutral salts. Dose, ℥j. or ℥iss. Composition of the *Seidlitz powders*, and mode of administration.

PHOSPHATE OF SODA.—SODÆ PHOSPHAS. *U.S.*

Mode of preparing this salt. Chemical composition.

Form as kept in the shops—proportion of water of crystallization—effects of exposure—taste—solubility in water.

Sometimes useful on account of its not unpleasant taste. Dose, from ℥j. to ℥ij.

CALOMEL.

Officinal name *Mild Chloride of Mercury—Hydrargyri Chloridum Mite*. Improperly called *submuriate of mercury*. Its mode of preparation, and its chemical nature and relations are treated of in another part of the course.

In the dose of from 5 to 20 grains, it usually operates briskly, producing bilious stools, of a dark colour. Sometimes it operates without pain or nausea, sometimes it is very painful and apt to induce vomiting. In the latter case, the discharges from the stomach are bilious. Probability that the irritation is not owing to the direct action of the calomel on the alimentary mucous membrane, but to the increased quantity and disordered quality of the bile which it produces. Reasons for this opinion. Amount of purgative effect not always proportionate to the dose. Sometimes it operates in the quantity of 1 or 2 grains, sometimes very large doses produce little effect. Causes of these peculiarities in its operation. Risk of overdoses. Comparative insusceptibility of infants or young children to its purgative effect. Slowness of its operation. Propriety of following it, if it do not operate in 6 or 8 hours, by another cathartic. Often combined with jalap, rhubarb, scammony, or other active cathartic, to render it more speedy in its operation. Dose of calomel and jalap, 10 grains of each. Generally, 3 or 4 grains of calomel combined with other cathartics, is a sufficient quantity to insure the peculiar advantages of the mercurial. An ingredient in the *Compound Cathartic Pill* of the United States Pharmacopœia, and in *Lee's Antibilious Pills*.

Therapeutical applications. In the commencement of autumnal fevers, and sometimes in their course when attended with congestion of the liver. In other diseases accompanied with deficient hepatic secretion or congestion of the portal system, as constipation, jaundice, hepatitis, &c. One of the best cathartics in cases of inflamed stomach and bowels. Peculiarly adapted to the treatment of the diseases of children. Unfounded apprehensions of danger on the part of some practitioners. The only serious danger to be apprehended from it when properly given, is excessive action upon the mouth. Given in powder or pill. Dose for adults, from 5 to 20 grains—for children two years old, about 4 grains.

ENEMATA.

Uses of purgative enemata—to hasten, facilitate, or increase the action of cathartic medicines—to operate upon the bowels in cases of irritability or inflammation of the stomach, or of debility when purgatives by the mouth might produce exhaustion, or of feculent accumulation in the lower bowels, or habitual constipation dependent on a want of due irritability of the rectum.

The common laxative injection is composed of *common salt*, *molasses*, and *lard* or *olive oil*, each a tablespoonful, and a pint of warm water.

If a more powerful enema is required, f℥ij. of *castor oil* may be added to the above ingredients—or a pint of *senna tea* of the officinal strength may be resorted to, or any other active cathartic in three times its ordinary dose.

Sulphate of Soda Glauber Salts

Extensively diffused in nature, found in mineral springs &c obtained artificially, by boiling the residuary salt left after the distillation of muriatic acid, in water, & evaporating to crystallization - Consists of 1 equiv. of sulph. acid, one of soda & 10 of water. Crystals are 6 sided prisms which effloresce on exposure Soluble in twice its weight of water. Subjected to heat, melts in its water of crystallization, then dries. Lemon juice or Cream of tartar disguises its nauseous taste.

* This residuary salt is sulphate of soda.

Sulphate of Magnesia Epsom Salts

A constituent of sea water & saline springs, either crystallized in long slender crystals or as an efflorescence on certain rocks & soils. also on bottom of caves in western states. Originally procured by evaporating the waters at Epsom - Prepared extensively at Baltimore by saturating the powder with sulph. acid, dried & calcined then dissolved in water & crystallized - Consist of 1 equiv of sulph acid 1 of base & 7 of water. - Small acicular crystals Slowly effloresces on exposure, dissolves in their own weight of water. Taste bitter nauseous & saline. mild & safe cathartic - The pleasantest form of administration is by in carbonic acid water & lemon syrup.

Sulphate of Potassa Vitriolated Tartar.

Procured from the residue obtained in the distillation of nitric acid, by dissolving it in water & crystallizing the solution. (This residue consists of peroxide of iron & sulphate of potass. the last only being soluble). This salt consists of one equiv. of sulph. acid & one of potassa. It

Diuretics

The *oil of turpentine* is an excellent material for a purgative injection, especially in typhous cases, and in tympanitic states of the abdomen. From f ℥ss. to f ℥ij. of the oil may be given, suspended by means of the yolk of an egg in Oss. of warm water.

Assafetida in the quantity of ℥j. rubbed up with warm water may be used under similar circumstances.

Large quantities of warm water will sometimes operate favourably by the mere stimulus of distention.

Very cold water sometimes proves purgative when administered by the rectum, by relaxing spasm.

When but a very slight impression is required, as in habitual constipation, some mucilaginous fluid, as barley water or flaxseed tea, may be employed in the quantity of a pint.

Soap for suppositories -

CLASS X.

DIURETICS.

General Observations.

Medicines which increase the secretion of urine. They operate in one or more of three ways—either 1. by entering the circulation and stimulating the kidneys by direct contact, or 2. by the propagation of a sympathetic impression from the alimentary canal to the kidneys, or 3. by promoting absorption, and thus secondarily stimulating the kidneys by filling the blood-vessels. In the great majority of instances, they probably act directly on the kidneys.

Various circumstances influencing the action of the kidneys, necessary to be considered in the use of diuretics. Opposition between the urinary and perspiratory functions. Influence of cold in diminishing the latter and increasing the former. A similar opposition, to a certain extent, exists between the kidneys and the bowels. Cause of this opposition in both instances. Practical inferences. Influence of cold drinks in promoting diuresis. Rule as to the quantity of drink that may be allowed in the treatment of dropsy. Arterial stimulation within certain bounds promotes diuresis, beyond these bounds checks it. Practical inference as to the use of bleeding and other depletory measures, in cases of high excitement, in order to favour the action of diuretics. Influence of mental emotions over the function of the kidneys.

Diuretics are employed chiefly in the treatment of dropsical complaints. They operate partly by diminishing the quantity of circulating fluids, and thereby promoting absorption —partly as evacuants, reducing arterial excitement, and diminishing the irritation upon which the effusion depends—and partly, perhaps, on the principle of revulsion.

Employed also in inflammations and irritations of the urinary organs, after due depletion. They probably act in part by increasing the quantity of urine and rendering it less irritating, in part by depletion from the excited vessels.

In chronic nephritic affections, certain diuretics prove useful by coming into contact with the diseased surface, and changing the nature of the morbid action.

Many of the diuretics are useful in febrile and inflammatory complaints as depletory remedies.

Very uncertain in their action. It is sometimes necessary to employ several successively before the effect is produced. Good often results from combining them.

FOXGLOVE.—DIGITALIS. 271

Before spoken of as a sedative. As a diuretic, one of the most efficient. Peculiarities of its action. Reason for supposing that it acts on the absorbents. Remedial applications as a diuretic. Dose and forms of preparation before stated.

SQUILL.—SCILLA. *U. S.* 583

Bulb of the *Scilla maritima*, an herbaceous plant, indigenous in the countries bordering on the Mediterranean.

Shape, size and structure of the bulb. Varieties, *red* and *white*. Difference between them. Mode of slicing and drying for market. The parts rejected. Loss of weight in drying.

Shape of dried squill as in the shops—texture—effects of the damp air—colour—odour —taste—relations to water and alcohol.

Active ingredient, a peculiar acrid principle called *scillitin*.

Effects of squill in large doses. Action as a diuretic. Direction to the pulmonary organs. Effects of overdoses. Local effects. Cases to which it is applicable. Dose, from 1 to 3 grains, 2 or 3 times a day, gradually increased till nausea is produced. Object in producing nausea. Often combined with calomel—2 grains of squill and half a grain or a grain of calomel being given 3 times a day till the mouth is affected. Advantages of this combination.

MEADOW-SAFFRON ROOT.—COLCHICI RADIX. *U.S.* 237–38

MEADOW-SAFFRON SEED.—COLCHICI SEMEN. *U.S.* 239–40

Bulb and seeds of the *Colchicum autumnale*. Character of this plant, and place of its growth and cultivation. Period at which the bulb is perfect. Cause of its inefficiency before and after this period.

Foxglove Digitalis

It is very permanent in its action, like mercury not requiring a fresh accession to keep up its effect - Has the peculiarity also of being cumulative

Squill Scilla Maritima Bulbus

Pear shaped, larger than a mans fist, in fleshy scales closely applied & each like an onion, externally of red color internally white, in another variety the whole bulb is white Sliced transversely, outer & inner scales rejected, the former being too dry in action & the latter mucilaginous - Loses 4/5 by wt in drying - In the shops it is in contorted oblong pcs, brittle pulverizable, with strong affinity for moisture, color yellowish white, odor feeble, taste bitter nauseous & acrid. Yields virtues to water & alcohol. In large doses has caused fatal inflammation of bowels - Stimulates vessels of lungs

Meadow Saffron Root & Seed Colchicum Autumnale

Native of Europe. In the latter part of summer a new bulb appears at lateral inferior side of the old one, which latter embraces it half round & finally perishes - Perfect for June to August. In the spring two young tubers exhausted by the new bulbs. Resembles tulip bulb in shape & size, solid transverse circular slices, white, inodorous, bitter hot & acrid. Both yields virtues to wine & vinegar. Seeds collected at same time spherical, 1/8 inch in diameter, color reddish brown, acts on the nervous system, overdose dangerous, stimulates secretions diminishes the action of the heart - virtues of seed as in the outer coatings

Fleabane — The whole plant
Collected while in flower, aromatic odor, bitterish taste yields virtues to boiling water. Diuretic & not offensive to the stomach - Used in dropsy as a change tho' not to be relied on

Wild Carrot — Seminæ Daucus Carota
The same as the garden plant, the latter slightly changed by cultivation. Seeds oval shaped flat on one side convex on the other, color brownish, odor aromatic, taste warm pungent subbitterish. Yield by distillation pale yellow volatile oil. Moderately excitant & diuretic from their aromatic properties useful in cases of enfeebled stomach - Poultice made of the scraped unboiled root useful in ulcers - If boiled it is perfectly mild & fit only for emollient cataplasms
Seeds are prickly -

Parsley Root — Apium Petroselinum
Aperient & diuretic, is a useful adjuvant administered in strong infusion -

Bulb. Shape—size—structure—consistence—mode of preparing for the market—shape of the slices—colour—odour—taste—relations to wine and vinegar as solvents—influence of time.

Active properties supposed to reside in an alkaline principle, at first considered as identical with *veratria*, but at present as peculiar, and denominated *colchicin* or *colchicia*.

Seeds. Time of collection—size—colour—virtues in the outer coating.

Effects on the system. Effects of overdoses. Therapeutical applications. Dose of the bulb or seeds in substance, from 2 to 8 grains, but scarcely ever given in this state. Usually administered in the form of wine. Two officinal vinous preparations: viz.

Wine of Meadow-saffron root—Vinum Colchici Radicis, U.S. Proportion of the bulb to the wine. Reasons for the large proportion of the bulb. Dose, 10 drops to f℥j.—in acute cases, from 10 to 20 drops every 3 or 4 hours, and gradually increased till it produces some effect. Signs of its action. In chronic cases, from 10 to 20 drops 3 times daily, and gradually increased. Often combined with magnesia—often with morphia.

Wine of Meadow-saffron seed—Vinum Colchici Seminis, U.S. Proportion of the ingredients. Dose, from f℥ss. to f℥ij.

WHITE HELLEBORE.—VERATRUM ALBUM. *U.S.*

AMERICAN HELLEBORE.—VERATRUM VIRIDE. *U.S.*

Perennial herbaceous plants. The former a native of Europe, the latter of the United States. Root the officinal part.

Shape and sensible properties of the root. Active principle, *veratria*.

Effects on the system. Therapeutical applications.

Veratria. Obtained from cevadilla, which consists of the seeds of a Mexican plant. Sensible properties. Relations to water and alcohol. Effects on the system. Therapeutical applications. Chiefly used externally. Mode in which employed.

INDIAN HEMP.—APOCYNUM CANNABINUM. *U.S.*

Root of the *Apocynum Cannabinum*—an indigenous, herbaceous perennial plant.

Sensible properties of the root—relations to water and alcohol—effects on the system—remedial application. Used in decoction, made by boiling three half pints of water with half an ounce of the root to a pint. Dose, f℥j. or f℥ij., 2 or 3 times a day.

DANDELION.—TARAXACUM. *U.S.*

Root of the *Leontodon Taraxacum*—an herbaceous perennial plant, growing in almost all parts of the world. All parts of the plant contain a milky juice and are possessed of medical virtues, but the root is most efficient.

Shape of the root—colour—odour—taste—relations to water. Best in the recent state. Effects of time.

Effects on the system. Therapeutical applications. Used in decoction and extract. Dose of the decoction made by boiling an ounce of the dried or two ounces of the fresh root in a pint of water to half a pint, f℥ij., 2 or 3 times a day—of the extract, 20 or 30 grains. The extract is officinal. Proper time for preparing it.

JUNIPER BERRIES.—JUNIPERUS. *U.S.*

Fruit of the *Juniperus communis*—an evergreen shrub, indigenous in Europe and naturalized in this country.

Shape and size of the berries—colour—odour—taste—relations to water and alcohol.

Active ingredient, a volatile oil, called officinally *Oleum Juniperi*. Colour of the oil—mode of preparation.

Character of juniper berries as a diuretic. Therapeutical applications. Generally used as an adjuvant to other medicines. Of the infusion made with one ounce of the bruised berries to a pint of water, a pint may be taken during the day. Often associated with cream of tartar. Dose of the oil, from 5 to 15 drops.

FLEABANE.

Erigeron Philadelphicum, and *E. heterophyllum*, herbaceous indigenous plants, growing in the fields. Identical in properties. The whole herb is employed.

Sensible properties of the herb—relation to water and alcohol—medical effects—therapeutical application. Given in the form of decoction, made with an ounce to a pint of water, the whole to be taken daily.

WILD CARROT.—CAROTA. *U.S.*

Seeds of the *Daucus Carota*, an indigenous perennial herb. General character of the plant.

Shape and size of the seeds—colour—odour—taste.

Active ingredient, a peculiar volatile oil. This impregnates more or less the whole plant, and the tops and root may be used in the same manner as the seeds.

Character as a diuretic. Effects on the stomach. Therapeutical applications. Used chiefly as an adjuvant to other diuretics. One pint of the infusion containing the virtues of half an ounce of the seeds may be used daily.

External application of the root of the garden carrot. Difference between the boiled and unboiled root.

PARSLEY ROOT.—PETROSELINUM. *U.S.*

Root of the *Apium Petroselinum*, or common garden parsley. Medical use. Administered in strong infusion. Dose indefinite.

TURPENTINE.—TEREBINTHINA.

The juice of different species of the genera *Pinus*, *Abies*, and *Larix*, consisting essentially of resin and a peculiar volatile oil, called *oil of turpentine*.

Many varieties are known in commerce. In the United States, only two are much employed—the *common white turpentine* and the *Canada turpentine*.

1. *White turpentine—Terebinthina, U. S.* Derived chiefly from the *Pinus palustris*, growing in the southern states. Mode of collection. State in which it is brought into the market. Properties as found in the shops—consistence—colour—odour—taste—effects of exposure.

2. *Canada Turpentine—Terebinthina Canadensis, U.S.—Canada balsam. Balsam of fir.* Product of the *Abies balsamifera*, *Pinus balsamea*, Linn.—growing in the northern states and Canada—cultivated as an ornamental plant under the name of *balm of Gilead*. Position in which the turpentine is found in the tree. Mode of collection. Properties—consistence—colour—transparency—odour—taste—effects of exposure.

General properties of the turpentines—effects of heat—inflammability—relations to water and alcohol—chemical composition. Their virtues reside in the volatile oil.

Effects on the system. Therapeutical applications. Dose, from 10 grains to ʒj., given in pill or emulsion. External use.

Several substances analogous to turpentine, and derived from the same trees, merit notice.

TAR.—PIX LIQUIDA. *U.S.* Obtained usually in this country from the *Pinus palustris*. Sometimes also from other species. District of country in which it is prepared. Mode of preparation. Properties—consistence—colour—odour—taste. Chemical constituents. *Creasote* one of those upon which its virtues depend. Relation to water as a solvent. Officinal infusion called *tar water*, or *Aqua Picis Liquidæ*. Therapeutical uses. Administered in substance, or in the form of tar water. Dose of the former, from ʒss. to ʒj.—of the latter, a pint or two in the day. Remedial use of the vapour. Mode of applying it. Use of *tar ointment—Unguentum Picis Liquidæ, U.S.* The residue after the evaporation of the volatile parts of tar is called *pitch*.

Creasote. Mode of obtaining it. Properties—consistence—colour—volatility—specific gravity—odour—taste—solubility in water and alcohol—influence over the putrefactive process—effect on albumen. Therapeutical applications, internal and external. Dose, one or two drops. Applied externally in aqueous solution or ointment.

RESIN.—RESINA. *U.S.* Commonly called *rosin*. Residue after the distillation of the oil from turpentine. *Yellow* and *white resin*. Difference between them. Properties—consistence—relations to water and alcohol—effect of heat in rendering it adhesive—fusibility—facility of combination with oils and fats—pharmaceutical uses. Basis of the *resin cerate—Ceratum Resinæ, U.S.*—commonly called *basilicon ointment*. Uses of this cerate.

OIL OF TURPENTINE.—OLEUM TEREBINTHINÆ. *U.S.* Its properties and applications as an arterial stimulant before treated of. Determination to the urinary organs—effect on the urine and on the urinary passages—diuretic action—therapeutical uses in reference to these properties. Dose, 10 to 20 drops, 2, 3, or 4 times, or more frequently, during the day.

COPAIBA. *U.S.*

Commonly called *balsam of copaiva*. Derived from different species of *Copaifera*, growing in Brazil and Guyana. Mode of procuring it from the tree. Its consistence and colour as first obtained.

Consistence of copaiba as kept in the shops—colour—transparency—odour—taste—relations to water and alcohol.

Constituents, principally a volatile oil and resin—the former of which is probably the active principle. Mode of obtaining the oil. Its specific gravity—colour—odour—taste—composition—application to the preservation of the alkaline metals.

Effects of exposure on copaiba. Results of its mixture with magnesia. Officinal pills of copaiba and magnesia. Proportion of the ingredients.

Terebinthina Turpentine

White Turpentine collected in large quantity in Northern Europe by excavating the turf close to the ground, into which exudes the juice flows about the beginning of March & through the summer. The holes as they fill are emptied into casks when they it assumes a soft solid consistence - As found in shops has aromatic odor, consistence varying with temperature, white color, warm bitterish taste - By comes hard & dry by exposure

Canada Turpentine, or Canada Balsam or Balm of Gilead is collected by bruising the vesicles which form on the trunk & branches & catching the contents in bottles, consistence of thin honey, colorless transparent, odor strong & agreeable, taste bitterish & acrid, becomes yellow & thicker by exposure - The Turpentines resemble each other in odor & taste, heat renders them more liquid, inflammable, & communicated but little volatile oil to water, & are wholly soluble in alcohol & ether - Effects on system owing entirely to resinous oil They are stimulant, diuretic, anthelmintic in large doses cathartic Externally rubefacient - Long continued cause irritation of mucous membrane of urinary passages - Less used than the oil.

Tar Pix Liquida Terebinthina Empyreumatica

Dead wood selected, because after vegetation ceases the resinous matter becomes concentrated in these layers - Stacks of the wood are built upon cone like mound of earth, & the resinous matter melted by fire & collected in the top runs thro' a hole in the center & passes into receptacles Tenacious consistence, black color, empyreumatic odor, taste resinous & acid. Pitch, Creosote & Creosote most important constituents - Yields by distillation its constituents Water, officinal name tar water. Used in pulmonary affections, as expectorant. or in form of vapor - Tar ointment highly useful as stimulant in tinea capitis

Creosote - obtained from tar by distillation. the liquid divides into 3 an aqueous between two oily layers, the inferior oily layer contains the Creosote. Oleaginous, colorless, volatile, Sp. gr. about 1.037 odor disagreeable, taste caustic, forms two combinations with water, & unites in all proportions with alcohol, powerfully antiseptic from which its name "I save," coagulates albumen - Used

powder, deliquescent, nauseous alkaline taste & acts as alkali on vegetable colors, soluble in water insoluble in alcohol

The Bicarbonate obtained by passing Carbonic acid thro' a solution of Carbonate of Potass & evaporating to crystals White inodorous crystals - Soluble in 4 times its weight of cold water, sparingly in alcohol - Boiling water converts it partially into Sesquicarbonate - Loses half its Carbonic acid by a low red heat & returns to state of Carbonate: Milder taste & more acceptable to stomach than Carbonate

Acetate of Potass: Sal diureticus
Mix Carb: potass: & acetic acid, the latter expels the carbonic acid - Light, white spongy or flaky salt, of a strongly deliquescent, warm saline taste - Dissolves in half its weight of water.

Cream of Tartar
Supertartrate of Potass - Given in divided doses, largely diluted with water Best of the saline diuretics - In small often repeated Doses, otherwise it will prove cathartic

Nitrate of Potass: In cases complicated with much inflammation - Excites pains in stomach if given too freely

Spirits of Nitric Ether = Sweet Spirits of Nitre
Mix nitrate of Potass. Sulph. acid & alcohol & after distilling add diluted alcohol & Carb: of potass: & redistil - Its essential constituents are nitric Ether & al

Effects on the system. Remedial applications. Dose, from 10 to 30 drops, 3 times a day. Modes of administration. Dose of the volatile oil, 5 to 15 drops.

SPANISH FLIES.—CANTHARIS. *U.S.*

Commonly called by the plural term *cantharides*. *Cantharis vesicatoria*. Its natural and commercial history, sensible and chemical properties, are spoken of under the head of epispastics.

Effects on the system. Tendency to the pelvic viscera, particularly to the urinary passages. Danger of overdoses. Therapeutical applications. Dose of the powder, 1 grain 2 or 3 times daily—of the tincture (*Tinctura Cantharidis, U.S.*) 10 drops, repeated as frequently.

CARBONATES OF POTASSA.

The *carbonate* and *bicarbonate* are employed—*Potassæ Carbonas, U.S.*, and *Potassæ Bicarbonas, U.S.*

Source from which the carbonate is usually procured. Mode of preparation. Impurities. Results of exposing its solution to the air, or to the action of an acid. Mode of preparing the purer salt, properly called *salt of tartar*.

Form of the carbonate of the shops—effects of exposure—taste—alkaline reaction—solubility in water—insolubility in alcohol.

Cases to which it is particularly applicable. Dose, 10 to 30 grains, 3 or 4 times a day.

The *bicarbonate*. Mode of preparation. Form—composition—solubility. Effects of boiling water and of a red heat. Advantages over the carbonate. Dose, from ʒss. to ʒj.

ACETATE OF POTASSA.

Formerly called *sal diureticus*. Mode of preparation. Form and appearance—effect of exposure—taste—solubility. Dose, from ℈j. to ʒj. as a diuretic, every 2 or 3 hours. In larger doses, cathartic.

SUPERTARTRATE OF POTASSA.

Origin, commercial and chemical history, and properties as a cathartic, before described. One of the best saline diuretics. Mode of administration calculated to secure its diuretic operation. Cases of dropsy to which it is peculiarly adapted. From ℥j. to ℥ij. given daily in divided doses. Effects on the stomach when long continued.

NITRATE OF POTASSA.

Origin, commercial and chemical history, and properties as an arterial sedative, before spoken of. Sometimes powerfully diuretic. Cases to which it is especially applicable. Dose, from 10 to 20 grains, repeated so as to amount to ʒj. or ʒij. or more in the 24 hours. Effects on the stomach when too long continued.

SPIRIT OF NITRIC ETHER.—SPIRITUS ÆTHERIS NITRICI. *U.S.*

Commonly called *sweet spirit of nitre*. Mode of preparation. Composition.

Form—colour—odour—taste—volatility—inflammability—solubility in water and alcohol—specific gravity—changes produced by time.

Often diluted with alcohol. Injurious consequences.

Character as a diuretic. Therapeutical application in reference to this property. Dose, from fʒss. to fʒj. frequently repeated.

CLASS XI.

DIAPHORETICS.

General Observations.

Medicines which promote perspiration. The vessels of the skin, in a healthy state, are always secreting. The perspiration is generally insensible, because, as soon as secreted, it is converted into vapour. If, however, it be greatly increased in quantity, it retains the liquid form and constitutes sweat. The state of the atmosphere, in relation to the degree of its moisture, has much influence over the form which the perspiration assumes—a very dry state promoting its evaporation, and *vice versa*. The idea was at one time entertained that certain medicines promoted the insensible, others the sensible perspiration; and under this impression, the former were called *diaphoretics*, the latter *sudorifics*. But it is now generally admitted, that the two forms of vapour and liquid, are merely different states of the same fluid, depending partly on its quantity, partly on the condition of the atmosphere. There is obviously, therefore, no ground for such a division; and the term diaphoretic is now considered as applicable equally to all the individuals of this class of medicines.

Diaphoretics operate in several different ways. 1. Some give rise to perspiration by relaxing the constricted cutaneous capillaries, while the circulation is in a state of excitement, as in febrile complaints. Illustrations of this mode of action. 2. Others probably act by entering the blood-vessels, and directly stimulating the vessels of the skin to increased secretion. 3. A third set may possibly stimulate the cutaneous vessels by means of the sympathy which connects the outer surface of the body and the stomach. 4. Some, with a tendency to the skin, conjoin a stimulant property by which they at the same time excite the circulation. These have little or no diaphoretic action in the febrile state; but are calculated for complaints in which a cool dry skin is connected with a languid circulation. 5. The diaphoretic action is induced by any thing which fills the blood-vessels, provided, by the application of warmth, a direction of action be given to the skin. Hence the free use of drinks promotes sweating. 6. Lastly, a mere increase in the flow of blood, if action be directed towards the skin by proper measures, and care be taken that the excitement do not proceed so far as to produce constriction of the extreme vessels, will cause an increase of the perspiration. Hence exercise, the heat of the weather, the vapour bath, and gentle internal stimulants, especially if accompanied with warmth and free dilution, prove actively diaphoretic.

These medicines do good in disease; 1. by removing constriction of the cutaneous capillaries, the existence of which, by increasing the heat of the skin, seems to aggravate fever; 2. by depleting from the blood-vessels; 3. by revulsion to the surface; 4. by promoting absorption; and 5. by eliminating noxious matter from the blood. Illustrations on each of these points.

If copious perspiration be required, the patient should be confined to bed, well covered, and clothed with flannel next the skin. Warm diluent drinks may also be given freely, where there is little or no febrile excitement. If the pulse be strong, and high inflammatory action exist, the operation of diaphoretics will be promoted by the previous use of the lancet or other depleting measures. During the continuance of diaphoresis, if this be the main object in view, care should be taken to avoid measures calculated to promote other secretions, particularly that from the kidneys, and bleeding also should be abstained from. Reason for this caution.

Diaphoretics may be conveniently considered under the three heads of 1. *nauseating diaphoretics*, 2. *refrigerant diaphoretics*, adapted to inflammatory complaints, consisting chiefly of saline substances, and 3. *alterative diaphoretics*.

1. *Nauseating Diaphoretics.*

Most emetics are diaphoretic in small doses. Ipecacuanha and tartar emetic are those chiefly used.

IPECACUANHA. 366

Seldom used alone as a diaphoretic. Usually given in combination with opium. Value of this combination. Explanation of its mode of action. Necessity for intimate union.

Cohol – Colorless liquid, grateful ethereal odor, slightly
sweet & bitter taste – very volatile & inflammable
Readily soluble in water & alcohol. Specific grav. no criterion
of its quality – Should not exceed 0.834 – Apt to become
acid by keeping. Should be kept in well stopped bottles in
a cool place – Diaphoretic diuretic & antispasmodic
Used to promote secretions & relieve nausea & flatulency
in febrile complaints with nervous or typhoid tendencies

Dovers Powder — Opium & Opii ää ℈j ℈j Sulph
Potas ℈j – an admirable anodyne diaphoretic, While
the opium stimulates the vessels of the skin the Ipecac relaxes
the secreting orifices. The tendency of the Opii to act injurious-
ly upon the brain is also counteracted – Applicable to
all cases not attended with much fever, when there is
an indication for diaphoresis

Tartrate of Antimony & Potass. Tartar Emetic

Lignum Vitæ

Guiacum Wood — Guiacum Officinale

Imported fm West Indies in logs or billets covered with bark - Very hard & heavy - Kept in form of rasping Powder greenish yellow, inodorous, bitter - Yields to water, but partially to water

Guiac — Succus Concretus

Either obtained fm incision, or spontaneous exudation Found in shape in irregular pcs mixed with impurities Color dark olive, more or less translucent, brittle, shining glass like Splintery fracture, powder light gray, becoming green on exposure, taste at first scarcely perceptible, afterwards acrid, odor feeble fragrant & rendered stronger by heat. Is not a pure resine, partially soluble in ~~alcohol~~ water, more so in alcohol - Soluble in alkaline solutions Stimulant alterative diaphoretic - Most beneficial in rheumatism - Dr Dewees favorite remedy in Amenorrhea

Mode of effecting this. Officinal preparation—*Powder of Ipecacuanha and Opium—Pulvis Ipecacuanhæ et Opii, U.S.*—commonly called *Dover's powder*. Proportions of its constituents.

Therapeutical applications of this powder. Dose, 10 grains, to be repeated every 4 or 6 hours when copious and continued perspiration is required.

TARTRATE OF ANTIMONY AND POTASSA.

Cases to which tartar emetic is applicable as a diaphoretic. It probably acts both by directly stimulating the secretory function, and by the nausea which it induces. Dose, from one-twelfth to one-fourth of a grain, repeated every hour or two hours.

2. *Refrigerant Diaphoretics.*

CITRATE OF POTASSA.

Seldom kept in the shops already prepared. A soluble, deliquescent salt. Usually prepared extemporaneously in the state of solution. Employed in two forms, viz. the *neutral mixture* or *saline draught* and the *effervescing draught*.

1. *Neutral mixture* or *saline draught*. Mode of preparation—proportion of ingredients when made with carbonate of potassa—propriety of straining in this case—proportion when made with the bicarbonate—proportion when citric acid in solution is substituted for lemonjuice. Dose, f℥ss. every hour or two hours.

2. *Effervescing draught*. Ingredients and their proportions. Mode of preparation. Dose, f℥ss. of the alkaline solution with f℥ss. of the lemonjuice or acid solution. Addition of water. Cause and remedy of a failure to effervesce.

Taste of these solutions of citrate of potassa. Circumstances of disease under which they are especially applicable. Cases in which the effervescing draught should be preferred. The medicine sometimes occasions pain in the stomach and sometimes purges. Remedy for these effects. Tartar emetic added to increase its diaphoretic power. Spirit of nitric ether also added in cases of nervous irritation or typhoid tendency.

ACETATE OF AMMONIA.

This salt is employed only in solution. It is officinal in this form under the name of *Solution of Acetate of Ammonia—Liquor Ammoniæ Acetatis, U.S.* Commonly called *spiritus Mindereri*, or *spirit of Mindererus*. Mode of preparation. Reason for preferring distilled vinegar or diluted acetic acid to common vinegar. Colour and taste of the solution. Therapeutical applications. Dose, from f℥ss. to f℥j., to be repeated every hour, 2, or 3 hours.

NITRATE OF POTASSA.

Powers as a diaphoretic. Therapeutical applications. Usually combined with tartar emetic.

SPIRIT OF NITRIC ETHER.

Described under the head of diuretics. Powers as a diaphoretic. Indicated especially in febrile complaints attended with nervous derangement or typhoid tendencies. Particularly useful in the fevers of children, from its influence over the nervous system. Dose, 20 drops to f℥j., every 2 or 3 hours.

3. *Alterative Diaphoretics.*

GUAIACUM WOOD.—GUAIACI LIGNUM. *U.S.*

GUAIAC.—GUAIACUM. *U.S.*

Products of the *Guaiacum officinale*, a large tree growing in the West Indies and South America.

Guaiacum wood. State in which it is imported—hardness—weight—form in which it is kept in the shops—colour—odour—taste—relations to water and alcohol. Its efficacy ascribable to the guaiac which it contains.

Guaiac. Concrete juice. Different modes of obtaining it. Form as found in the shops. Properties—colour—translucency—brittleness—fracture—colour of the powder and change effected in it by exposure—odour—taste—effects of heat—chemical nature—relations to water and alcohol, and to alkaline solutions.

Effects of guaiac on the system. Therapeutical applications of this and the wood. Dose of guaiac in powder, from 10 to 30 grains, to be given in sweetened water or mucilage.

There are two officinal tinctures, viz. the *simple tincture—Tinctura Guaiaci, U.S.*, and the *volatile tincture—Tinctura Guaiaci Ammoniata, U.S.* Dose of either, f℥j. three or four times a day, to be given in milk, or sweetened water, or mucilage. The wood is usually employed in decoction. An ingredient of the compound decoction of sarsaparilla.

MEZEREON.—MEZERIUM. *U.S.*

The bark of different species of Daphne. The *D. Mezerium* is officinally recognised. The *D. Gnidium* and *D. Laureola* are also said to yield it. General character of these plants. Place of their growth.

Shape of the bark—structure—pliability—toughness—colour—odour—taste—relations to water and alcohol.

Among its constituents is a peculiar principle called *daphnin;* but its virtues are thought to reside in an acrid resin.

Effects upon the system. Operation upon the skin when locally applied. Therapeutical applications. Given in decoction with liquorice root—℥ij. of the mezereon and ℥ss. of the root being boiled in Oiij. of water to Oij. Dose, a teacupful four times a day. Mezereon is much used as an ingredient of the compound decoction of sarsaparilla.

SASSAFRAS.

The officinal portions of the *Laurus Sassafras*—an indigenous tree—are the bark of the root (*Sassafras Radicis Cortex, U.S.*), and the pith of the twigs (*Sassafras Medulla, U.S.*) Properties of the bark as kept in the shops—form—colour—odour—taste—relations to water and alcohol.

Active constituent, a volatile oil called *oil of sassafras.* Mode of procuring the oil—its colour—odour and taste—specific gravity—influence over caoutchouc.

Effects on the system. Therapeutical use. Employed chiefly as an ingredient of the compound decoction of sarsaparilla. The infusion may be given *ad libitum.* Dose of the oil, from 2 to 10 drops.

Sassafras pith. Form—colour—levity—odour and taste—relations to water—character of its mucilage. This is made with ℥j. of the pith to Oj. of boiling water. Therapeutical uses.

SARSAPARILLA. *U.S.*

The roots of several species of *Smilax*, as the *S. officinalis, S. syphilitica*, &c. Ascribed incorrectly to the *S. Sarsaparilla.* Native country of these plants. Their general character. Places where the root is collected and whence it is imported into this country. Commercial varieties. State in which the root is imported.

Shape of the root—size—structure—character of the surface—colour—odour—taste—relations to water and alcohol—effects of long boiling—relative value of the cortical and medullary portions.

Active properties thought to reside in a peculiar principle, which should be called *sarsaparillin.*

Effects upon the system. Modus operandi. Therapeutical uses. Given in powder, infusion or decoction, syrup, and extract. Dose of the powder, ℥ss. to ℥j., 3 or 4 times a day. The *compound decoction* is officinal under the name of *Decoctum Sarsaparillæ Compositum.* Constituents of this decoction and mode of preparation. Dose, f℥iv., 3 or 4 times a day. There is also an officinal Syrup—*Syrupus Sarsaparillæ, U.S.* Composition of the syrup. Dose, f℥ss., repeated as above. Dose of the *alcoholic extract*, from 10 to 20 grains. This is an excellent preparation. Mode of preparing the *fluid extract.* Dose, f℥j.

Radicis

Mezereon Mezereum s Cortex

It is a hardy shrub 3 or 4 feet high, a native of Britain occasionally found in our gardens - The bark usually comes in strips 3 or 4 feet long, or rolled up in balls - Fibrous pliable & tough, color whitish, when dry inodorous, taste at first sweetish, then highly acrid & even corrosive - Yields virtues to water & alcohol - Internally stimulant & diaphoretic - In over dose has all the fatal effects of the acrid poisons Applied to skin has been used as Epispastic from time immemorial - Also to ulcers - Used in Scrofulous affection, chronic rheumatism, & diseases of the skin

Sassafras et Medulla Radicis Cortex

The bark is in small irregular brittle fragments, red dish cinnamon, fragrant odor, aromatic taste - yields virtues to water & alcohol - Oil procured by distillation, yellow color, odor fragrant, pungent aromatic taste - Sp gr 1.094, one of the heaviest of volatile oil. Has the property of dissolving caoutchouc - Stimulant - perhaps diaphoretic - Used as adjuvant mostly. - The pith is in slender cylindrical fibrous light & spongy, sassafras flavor, mucilaginous taste, yields its gummy matter to water. Much employed as soothing application to inflamed eyes & is a pleasant & useful drink in dysenteric catarrhal & nephritic diseases

Scilla Syrup

acts by stimulating the nerves of the lungs and as an expectorant both in deficient & superabundant secretion - in the former case with tartar emetic & ipecac & in the latter with stimulating expectorants. (See Jackson's notes, for a form of spasmodic disease excited by an overdose of squills)

For Syrup of Squill add Sugar to the Vinegar & boil & Oxymel in ~ Clarified Honey ~

Garlic Allium Bulbus

The bulb resembles the common onion is sold into market tied up in bunches - Bulb covered, internally whitish moist & of a fleshy consistence, pungent ~~odor~~ called allium cepa, taste bitter & acrid. Yields virtues to water & alcohol, quickens the circulation excites the nervous system, promotes expectoration, & diaphoresis or diuresis as the patient is kept hot or cool, tonic & carminative to the stomach

Senecka Senega Radix

Of various sizes from quill to little finger, of color yellowish brown in young roots, brownish gray in the old. Powder gray, odor peculiar, taste when chewed pungent & acrid, yields virtues to water & alcohol, the alcoholic solution is the least acrid of the two, - The virtues reside in the bark of the root. Stimulating expectorant & diuretic. Useful in cases not attended with inflammatory action - Wood says that after the 1st stage of acute inflammation, Senega, next to Mercury, is the best remedy that has ever been used -

CLASS XII.

EXPECTORANTS.

General Observations.

Medicines which increase the secretion from the mucous membrane of the air cells and air passages of the lungs, or facilitate its discharge.

They may be conceived to act by relaxing the secretory vessels when in a state of constriction, or by stimulating them to increased action, either by an immediate influence or by the sympathies which connect the lungs with the stomach. There is also another mode in which certain expectorants operate. The bronchial secretion may be in such quantities as to exceed the powers of expectoration possessed by the patient. This may arise either from the great abundance of the secretion, or from the great debility of the muscles concerned in expectoration. The excessive quantity of the bronchial fluid may result from a debilitated condition of the vessels. Stimulating medicines here prove expectorant by imparting tone to the secretory vessels, thus diminishing the amount of secretion and bringing it within the power of the patient to discharge conveniently, or by increasing the muscular strength, and thus enabling the patient to exert himself more vigorously in its discharge. It is obvious that, in such cases, those medicines must be most efficacious which with a general stimulating power unite an especial tendency to the lungs. Practical illustrations.

During the administration of expectorants, the surface should be kept warm, and flannel should be worn next the skin.

Emetic substances usually prove expectorant in small doses. *Ipecacuanha* is sometimes given in doses of one or two grains, and *tartar emetic* in the dose of one-eighth of a grain more or less. For the same purpose, the *wine of ipecacuanha* or *antimonial wine* may be used, the former in the dose of about 30 drops, the latter in that of 15 or 20 drops or more. Cases to which these medicines are applicable as expectorants.

SQUILL.

The origin, commercial history, chemical properties, and effects of squill as an emetic and diuretic have been before treated of. Character as an expectorant. Circumstances under which it may be advantageously employed. Dose, in substance, 1 grain several times a day. Usually employed in the liquid form. Officinal preparations, *vinegar*, *syrup*, *oxymel*, and *tincture*. Dose of the vinegar, (*Acetum Scillæ*, *U.S.*), f℥ss. to f℥j.—of the syrup, (*Syrupus Scillæ*, *U.S.*), and of the oxymel, (*Oxymel Scillæ*, *U.S.*), from f℥j. to f℥ij. Mode of preparing the syrup and oxymel from the vinegar. Dose of the tincture, (*Tinctura Scillæ*, *U.S.*), from 20 to 40 drops.

GARLIC.—ALLIUM. *U.S.*

Bulb of the *Allium sativum* or garden garlic, a native of Europe, and cultivated in this country. Character of the bulb. State in which it is brought into the market.

Shape, structure and consistence of the lesser bulbs or cloves—odour—taste—relations to water and alcohol.

The virtues of garlic reside in a volatile oil. The expressed juice owes its virtues to the oil.

Effects on the system. Mode of operating. Therapeutical uses. The expressed juice most conveniently administered. Usually mixed with sugar. Dose for a child from f℥ss. to f℥j.

SENEKA.—SENEGA. *U.S.*

Root of the *Polygala Senega*, an herbaceous perennial plant, indigenous in this country.

Shape of the root—structure—colour—colour of the powder—odour—taste—relations to water and alcohol—relative virtues of the bark and woody portion.

Its activity is thought to depend on a peculiar acrid principle called *senegin*.

Effects on the system. Therapeutical uses. Given in powder or decoction. Dose of the powder, from 10 to 20 grains. The decoction usually preferred. Prepared by boiling ℥j. of the bruised root with ℥j. of liquorice root in Oiss. of water to Oj., and given in the

dose of f℥j. or f℥ij., 3 or 4 times a day, or in smaller quantities more frequently repeated. Composition of the *compound honey of squill—Mel Scillæ Compositum, U.S.*—commonly called Coxe's hive syrup.

BLACK SNAKEROOT.—CIMICIFUGA. *U.S.*

Root of the *Cimicifuga racemosa*—an herbaceous, perennial, indigenous plant—growing in woods. Sometimes called *Cohosh.*

Shape and size of the root—colour—odour—taste—relations to water as a solvent.

Effects on the system. Therapeutical applications. Given in substance and decoction. Dose of the powder, 10 to 30 grains—of the decoction, made in the proportion of ℥j. to Oj., f℥j. or f℥ij., several times a day.

AMMONIAC.—AMMONIACUM. *U.S.*

Inspissated juice of the *Dorema Ammoniacum*—an umbelliferous plant, growing in Persia. Mode of collection. Place of export, and route by which it reaches this country. Two forms, that of *tears*, and that of *masses.*

Size and shape of the *tears*—colour externally—brittleness—fracture—colour of the fractured surface.

Shape of the *masses*—appearance when broken—liability to impurities.

Properties of ammoniac—odour—taste—effects of heat—relations to water and alcohol—chemical constitution.

Effects on the system. Therapeutical uses. Dose, 10 to 30 grains. Usually given in emulsion, sometimes in pill. The *compound pills of squill* of the London Pharmacopœia are an excellent expectorant.

ASSAFETIDA.

Before described. Here spoken of only as an expectorant. Character in this respect. Therapeutical uses. Dose, from 5 to 15 or 20 grains. Given in pill or emulsion.

BALSAM OF TOLU.—TOLUTANUM. *U.S.*

Product of the *Myroxylon Toluiferum*, a tree growing in tropical America. Mode of obtaining the balsam. State in which it is imported.

Consistence as in the shops—colour—translucency—odour—taste—effects of heat—effects of exposure—relations to water and alcohol.

Essential constituents, resin, volatile oil, and benzoic acid. Mode of separating the acid. Form, colour, and sensible properties of *benzoic acid.* A characteristic ingredient of the balsams. Use in pharmacy.

Effects of tolu on the system. Therapeutical uses. Dose, 10 to 30 grains. Given most conveniently in emulsion. There is an officinal tincture. Objection to this preparation for ordinary use. Dose, f℥j. or f℥ij.

BALSAM OF PERU.—MYROXYLON. *U.S.*

Product of the *Myroxylon Peruiferum*—a native of tropical America. Mode of obtaining the balsam. State in which it is imported.

Consistence—colour—odour—taste. Constituents, resin, volatile oil, and benzoic acid.

Internal and external use. Dose, f℥ss.

The compound syrup of Squill or Coxe's Hive Syrup is composed of Tartar Emetic, & equal portions of Senega & Squill - Each fluid oz contains grij of Tartar Emetic.

Black Snakeroot - Cimicifuga Cohosh

Rough jagged nearly an inch thick several inches long color dark internally externally whitish, odor feeble taste bitter herbaceous & slightly acrid - Yields virtues to boiling water. Besides tonic power, has property of stimulating the secretions - Used in pulmonary affections rheumatism dropsy, & chorea - Hardly deserving the name of Expectorant, tho' a very valuable alterative for its effects over whole system - Is one especially -

Ammoniac Ammoniacum

Rows big or more ft high. Milky juice exudes spontaneously or according to some thro' a puncture made by an insect, generally taken dry collected, comes from India by route of Calcutta. Tears preferable, irregularly globular, color yellowish, brittle shining fracture, whitish within. Masses are of a darker color than tears when broken like whitish wax, imbedded in impurities - Odor peculiar & disagreeable in mass, taste nauseous, bitter & acrid, softens & becomes adhesive by heat. Partly soluble in water & alcohol. Gum Resin, (some 70 parts resin) - Stimulant & expectorant. Used in chronic catarrh, asthma & other pectoral affections, without acute inflammation

Asafoetida with expectorant it combines antispasmodic powers, rendering it highly useful in spasmodic pectoral affections

Aloes being to stimulant to uterine is obviously unsuitable to cases attended with inflammation more frequently employed in amenorrhea than any other remedy, entering into all the empirical remedies -

Savine Sabina Tobia

Juniperus Sabina - An evergreen shrub rising from 3 to 15 ft high. The leaves are dark green, fading very much when dry - Strong heavy disagreeable odor, taste bitter & acrid - Yields virtues to water & alcohol - The oil is very abundant the fresh leaves yielding 15 or 16 % - Yellow limpid, light, very odorous, acrid taste, It is a stimulant emmenagogue & actively rubefacient. Not to be given during gravid for local excitement - Alone to be used during pregnancy - Resembles common cedar so often adulterated with it.

CLASS XIII.

EMMENAGOGUES.

General Observations.

Medicines which promote the menstrual *secretion*. Observations in relation to this function. The question considered whether any medicines exist, which have the peculiar property of exciting it. An affirmative opinion given. Emmenagogues may act either by reaching the uterine vessels through the circulation, or by the extension to them sympathetically of an impression made elsewhere. They act with greatest certainty if given so that their full influence may be felt shortly before the regular period for menstruation. The state of the system should always be considered before prescribing them. If the suppression of the menses be accompanied with a plethoric condition of the blood-vessels and the existence of inflammation or a strong inflammatory tendency, they should be preceded by depletory measures, and the milder individuals of the class should be selected. If debility exist, those of a tonic or stimulant character should be preferred. If the affection be attended with constipation of the bowels, the cathartic emmenagogues are obviously indicated.

PREPARATIONS OF IRON.

The *chalybeates* considered as on the whole not inferior to any other medicines in emmenagogue power. Applicable to all cases unattended with local inflammation or general excitement. The *precipitated carbonate of iron* preferred. Often combined with aloes.

ALOES.

One of the most effectual emmenagogues. Believed to exert a specific influence on the uterus, independent of its mere cathartic property. Probably operates through the medium of the circulation. Cases to which it is applicable. Mode of administration. Dose, 1 or 2 grains, 2 or 3 times a day.

BLACK HELLEBORE.

Said to be emmenagogue even when it does not act as a cathartic. Apt to be feeble as found in our shops. Cause of this. As an emmenagogue, usually given in tincture. Dose, f℥ss. to f℥j., 2 or 3 times a day.

SENEKA.

Esteemed emmenagogue by some. Stimulant to the secretions generally. Affects one or another, according to the circumstances under which it is given. It has no especial direction to the uterus, but in consequence of its general influence over the secretions, it may restore menstruation if given with due reference to the natural indications.

GUAIAC.

Before spoken of as a stimulant diaphoretic, with occasional tendency to act on the bowels or kidneys. Believed also to have a decided tendency to the uterus. Found in numerous instances to be an effectual emmenagogue. Peculiarly applicable to cases associated with rheumatism, especially in its neuralgic forms. Use in dysmenorrhœa. Generally administered in the form either of the simple or the ammoniated tincture. Dose, f℥j. 3 or 4 times a day.

SAVINE.—SABINA. *U.S.*

Leaves of the *Juniperus Sabina*—an evergreen shrub, indigenous in the south of Europe. General character of the plant.

Shape of the leaves—colour—odour—taste—relations to water and alcohol.

Active principle, a peculiar volatile oil called *oil of savine—Oleum Sabinæ, U.S.* Colour of the oil—sensible properties.

Effects of savine on the system. Operation upon the uterus. Unpleasant results from its use in pregnancy. Dose of the powder, from 5 to 20 grains, 2 or 3 times a day—of the oil, from 2 to 5 drops.

SPANISH FLIES.

Character as an emmenagogue. Remedial employment in reference to this property. Cases in which they are contra-indicated. Dose of the tincture, from 10 to 30 drops, 3 times a day.

CLASS XIV.

SIALAGOGUES.

General Observations.

Medicines which promote the secretion of saliva. Some substances taken internally produce this effect, as mercury, &c., but, as they are not used in reference to their sialagogue operation, they cannot properly be noticed here. The only medicines actually employed for this purpose are such as produce the effect by being chewed. All irritants may thus prove sialagogue. None are used exclusively with a view to this effect. When any medicine is employed as a sialagogue, the fact is noticed under other heads. Sialagogues are useful either as revulsives or direct irritants. In the former capacity they are applicable to rheumatism of the face, toothache, &c., in the latter, to paralytic affections of the tongue and throat.

CLASS XV.

ERRHINES.

General Observations.

Medicines which promote the secretion from the mucous membrane of the nostrils. As they usually excite sneezing, they are also called *sternutatories*. No medicines taken internally are known to have a peculiar reference to this function. None are employed as errhines, except by local application to the nostrils. The principles of their action are the same as those of the sialagogues. When any substance is employed as an errhine, the fact is mentioned under other heads. None used exclusively for this purpose. Applied by snuffing them up the nostrils in the form of powder. If very acrid, they should be diluted with some inert substance.

Spanish Flies Cantharis

Plaster of Pitch with Spanish Flies or Warming Plaster

Burgundy Pitch & Spanish Flies, melted together & stirred until cool.* An excellent rubefacient more active than Burgundy pitch, but not so apt to produce vesication. If the flies are not very minutely divided they will vesicate. Used in Chronic rheumatism, various internal diseases attended with inflammatory tendency, & the beginning of pleurisy & pneumonia * Cerate of Spanish flies

Liniment of Spanish Flies or commonly called Decoction of flies in oil of turpentine — A mixture of Spanish flies in Ol Turpentine, digested for three hours in water bath & strained — The turpentine is an excellent solvent, & the addition produces a powerful rubefacient — Very useful in prostrate states of typhus fever — May if necessary be weakened by olive or linseed oil

CLASS XVI.

EPISPASTICS.

General Observations.

Medicines which, when applied to the skin, produce a blister. Also called *vesicatories.* They act by producing inflammation of the skin, the vessels of which relieve themselves by the secretion of serous fluid under the cuticle. They prove useful as remedies in various ways.

1. They act indirectly as general stimulants. The system is excited by sympathy with the local inflammation. This effect is greatest during the rubefacient action of the epispastic, and is diminished when the cutaneous inflammation is relieved by the effusion of serum. As general stimulants, they may be used in typhoid diseases, and in intermittent or remittent complaints in which it is desirable to supersede the paroxysm by a strong impression on the system. Remarks as to the proper circumstances of application in both cases.

2. They are powerfully revulsive. In this way they prove useful in various nervous irritations and in inflammations. In cases of mere local determination of blood, they are usually best applied at a distance from the part affected; in inflammations, as near the seat of disease as possible. Grounds of this difference. Another practical rule is that, in inflammatory affections, they should not be applied during the existence of high febrile excitement. Grounds of this caution.

3. They substitute their own action, which spontaneously subsides, for the diseased action existing in the part to which they are applied.

4. They act as local stimulants.

5. They produce local depletion, which, though not abundant, often proves highly useful in inflammation.

6. The pain they occasion is sometimes useful in hypochondriacal cases.

7. They are employed to separate the cuticle, so as to procure a denuded spot for the application of medicines.

SPANISH FLIES.—CANTHARIS. *U.S.*

Cantharis vesicatoria. Synonymes. *Meloe vesicatorius. Lytta vesicatoria.* Countries in which the insect is found. Situations frequented by it. Mode of procuring and preparing it for use.

Shape and size of the fly—colour—colour of the powder—odour—taste—relations to water and alcohol—attacks of insects and results.

Blistering property thought to reside in a peculiar principle called *cantharidin.* Form, colour, and solubilities of this principle.

The following officinal preparations are worthy of notice.

1. *Cerate of Spanish Flies—Ceratum Cantharidis, U.S.*—commonly called *blistering plaster.* It is the *Emplastrum Cantharidis* of the London Pharmacopœia. Constituents and mode of preparation. Mode of application. Used for blistering.

2. *Ointment of Spanish Flies—Unguentum Cantharidis, U.S.* Mode of preparation. Used to dress blistered surfaces in order to maintain a discharge.

3. *Plaster of Pitch with Spanish Flies—Emplastrum Picis cum Cantharide, U.S.*—more frequently called *Emplastrum Calefaciens*, or *warming plaster.* Constituents. Uses.

4. *Liniment of Spanish Flies—Linimentum Cantharidis, U.S.*—generally called *decoction of flies in oil of turpentine.* Mode of preparation. Uses.

Practical remarks on blistering with cantharides. Local action of the epispastic. Strangury a frequent result. Probable cause. Modes of prevention. Treatment. Sloughing of the skin in the blistered part sometimes results. Cause of this occurrence. Rules for applying blisters. Remarks in relation to their size and shape, the means of attaching them to the skin, the previous preparation of the skin, the duration of their application, the difference in this respect between children and adults, mode of dressing blisters, mode of treating them when inflamed, and the means of sustaining the discharge so as to form a perpetual blister.

POTATO FLIES.—CANTHARIS VITTATA. *U.S.*

Synonyme, *Lytta vittata.* An indigenous insect. Plants on which it is found. Mode of collecting it. Size, shape, and colour. Sensible properties similar to those of the Spanish flies. Chemical composition probably similar. Uses the same.

CLASS XVII.

RUBEFACIENTS.

General Observations.

Medicines which inflame the skin without vesicating as an ordinary result. The principles of their operation are the same in general as those mentioned under the head of epispastics. But some indications are answered best by one class, others by the other.

As general stimulants, blisters are preferable when a slow and permanent impression is to be produced—the active rubefacients, when a sudden and powerful but fugitive action is requisite. The former are superior to the latter in the power of interrupting morbid associations. On the principle of revulsion, blisters are more useful in local inflammations—rubefacients, in spasm and other forms of nervous irritation. When a very slight but long continued action is desired, the indication is best fulfilled by mild rubefacients. As depletory means these are obviously inferior to blisters, and they cannot be employed to obtain a raw surface. For the mere purpose of producing pain, the powerful rubefacients are even more efficient than blisters.

MUSTARD.—SINAPIS. *U.S.*

The seeds of two species of Sinapis—the *S. alba* and *S. nigra*—natives of Europe—cultivated in our gardens. General character of the plants.

Their seeds distinguished by the names of *white* and *black mustard seed*. Size and colour of the two varieties. Colour of the powder. Mode of preparing it.

Chemical composition of the seeds. Mucilage contained in their coating, a fixed oil in the interior part. Among their constituents is a principle, which, in the black mustard is converted into a volatile oil by the reaction of water, in the white into an acrid substance not volatile. The odour and taste are ascribable to these principles.

Effects of mustard on the system. Operation when taken whole. Operation when swallowed bruised or in the form of powder. Internal uses. Employment as a rubefacient. Mode of applying it. Duration of its application. Local effects. Occasional unpleasant results. Cases to which it is especially applicable.

CAYENNE PEPPER.

Before spoken of as an arterial stimulant. Effects as a rubefacient. Modes of applying it. Cases to which it is applicable.

OIL OF TURPENTINE.

Already described. Powerfully rubefacient. Mode of applying it. Peculiar effect on the skins of some individuals. Cases to which it is applicable.

BURGUNDY PITCH.—PIX ABIETIS. *U.S.*

Product of the *Abies communis—Pinus Abies*, Linn.—a large evergreen tree, growing in the north of Europe, and commonly called *Norway spruce fir*. Mode of procuring and preparing the pitch.

Form as it is found in the shops—colour—effect of exposure on the colour—consistence—difference in this respect in cold and hot weather—smell—taste—chemical composition—effects of heat—consistence at the temperature of the body.

Properties as a rubefacient. Poisonous effect on the skins of some individuals. Therapeutical uses. Modes of application.

HEMLOCK PITCH.—PIX CANADENSIS. *U.S.*

Sometimes erroneously called *hemlock gum*. Obtained from the *Abies Canadensis—Pinus Canadensis*, Linn.—an evergreen indigenous tree, growing in the northern states and Canada. Mode of collecting and preparing the pitch. Colour. In sensible, chemical, and medicinal properties, closely analogous to Burgundy pitch.

WATER OF AMMONIA.—AQUA AMMONIÆ. *U.S.*

Chemical nature. Mode of preparation. Odour. Relation to the oils. Effects as a rubefacient. Modes of application. There is an officinal preparation under the name of *Linimentum Ammoniæ, U.S.*, commonly called *volatile liniment*. Composition of this liniment.

Written up to here

Potato Flies Cantharis Vittata

Found in middle & Southern States upon the potato vine, shaken off into hot water & dried in the sun. It is ½ in long, shape like "vesicatoria" dead light red color, black spots on the top, yellow stripe in center of wing

Mustard Sinapis ♀ Alba & Nigra

Annual plants 3 & 4 ft high. The black has an smaller color deep brown, internally yellow. The white an larger yellow & less pungent. Both yield mucilaginous yellow powder, Sulphate sinapisin is interesting as affording an instance of a proximate vegetable principle having sulphur as a constituent. Its other elements are oxygen carbon hydrogen & nitrogen. The whole seed taken whole act as laxative in doses of table spoonful once or twice a day. A teaspoonful of the powder acts as an emetic. Excellent in stopping vomiting from narcotic poisons. Most useful as rubefacient wiped with water in form of cataplasm, when speedy action be desirable, may be diluted with one measure white flour.

Common Caustic or Hydrate of Potassa

Made by evaporating a solution of Potass. over the fire until boiling ceases & the potass. melts. Run into moulds. Color dingy gray, deliquescent, kept in green bottles, impurities, carb. kept. potass. peroxide of iron, lime &c

Nitrate of Silver Lunar Caustic

Dissolve Silver in nitric acid & water. & evaporate as above. Gray color, acrid metallic taste, translucent, until after exposure to air. An anhydrous salt deliquescent copper may be suspected, more advantageous than potass. being anhydrous & not apt to spread. A solution of common salt the antidote & its internal exhibition.

Arsenious acid In roasting the ores arsenic sublimes & condenses on the sides of the flues in form of arsenious acid - In shape as white flour like powder. At first transparent afterwards white & opaque. The grains exhibit a vitreous fracture, heavy & almost tasteless. Soluble in water - Used as an escharotic in cancer, noli me tangere

Burnt Alum Alumen Exsiccatum is prepared by melting over fire until dry & then rubbing into powder. Used to destroy fungous flesh.

CLASS XVIII.

ESCHAROTICS.

General Observations.

Substances which destroy the life of the part to which they are applied, and produce a slough. They operate either by a direct influence on the vitality of the part, or by a chemical agency. They are employed to form issues, to change the nature of the morbid action in diseased surfaces by destroying the part affected, to remove fungous granulations, and to open abscesses.

Observations on the *actual cautery*. *Iron heated to ignition* may be used to arrest hemorrhages in places which are beyond the reach of a ligature.

Moxa is another form of the actual cautery. Meaning of the term. Materials from which moxa is prepared, and mode of preparation. Use of nitre and bichromate of potassa. Mode of application. Therapeutical uses. Principles of action.

POTASSA. *U.S.*

Common caustic. Mode of preparation. Shape and size of the pieces—colour—change upon exposure—mode of keeping—impurities.

Used to form issues, to destroy poisoned surfaces, and to open abscesses. Modes of application. Subsequent treatment so as to form an issue. Principles upon which issues act in the cure of disease.

NITRATE OF SILVER.

Lunar caustic. Mode of preparation. Shape of the pieces—size—colour—translucency—change upon exposure—mode of preserving them. Peculiar character as an escharotic. Used chiefly to destroy the surface of diseased ulcers. Particular applications. Mode of application. Effect upon the cuticle. Used in weak solution as a local stimulant.

ARSENIOUS ACID.—ACIDUM ARSENIOSUM. *U.S.*

White oxide of arsenic, White arsenic. Mode of obtaining it. State, as it is kept in the shops—colour—opacity—nature of the surface—fracture—odour—taste—solubility in water. Danger of mistaking it for magnesia when in powder. Character as an escharotic. Therapeutical applications.

SULPHATE OF COPPER.

A mild escharotic, not much used as such at present. A very strong solution containing 20 grains to f℥j. of water is sometimes applied to chancres, and to the cankerous sore mouth of children.

CORROSIVE CHLORIDE OF MERCURY.—HYDRARGYRI CHLORIDUM CORROSIVUM. *U.S.*

Bichloride of Mercury, Corrosive sublimate. To be spoken of among the preparations of mercury. Referred to here only as an external application. Seldom used as an escharotic. More frequently as a stimulant application. Use in onychia maligna. Its solution applied to ulcers, particularly those of a syphilitic character, to certain cutaneous eruptions, and as an injection in gleet.

DRIED ALUM.—ALUMEN EXSICCATUM. *U.S.*

Burnt alum. Mode of preparing it. Character as an escharotic. Purposes for which it is used. Mode of applying it.

THE MINERAL ACIDS.

Though powerfully caustic, these are seldom used, in consequence of the inconvenience of applying them in the liquid form. They are sometimes employed to destroy the cuticle hastily, and procure an inflamed surface. Diluted sulphuric and nitric acids are occasionally used as stimulants to old ulcers. These acids are also employed in the form of ointment in cutaneous diseases.

CLASS XIX.

DEMULCENTS.

General Observations.

Bland, unirritating substances, which form with water a viscid solution. They generally consist of gum, or of a mixture of gummy with saccharine and farinaceous substances.

Demulcents act in two ways. 1. Applied in solution to an irritated or inflamed surface, they protect it against the influence of irritating matters. 2. Mixed with acrid substances, they blunt their acrimony, and render them less irritating to the parts with which they come in contact. Illustrations of these modes of action. Therapeutical applications. Question as to their mode of action in cases in which they cannot come into direct contact with the diseased surface, as in nephritic complaints. Probability that, in such cases, their solution acts as a mere diluent. Substances belonging to this class are useful also as diet for the sick. Used in pharmacy to suspend insoluble substances in water, and to give adhesiveness and consistence to pills and troches.

GUM ARABIC.—ACACIÆ GUMMI. *U. S.*

Product of numerous species of *Acacia*, thorny trees or shrubs growing in Africa and Arabia. Mode of procuring the gum. Places in which it is collected. Places of export. Several varieties are known in commerce. For medical purposes it is sufficient to distinguish two, viz. *Turkey gum* and *Senegal gum*.

Turkey gum. Shape and size of the pieces—colour—cracks or fissures—effect of these on the transparency—great brittleness.

Senegal gum. Shape and size of the pieces—colour—peculiar appearance of the surface—transparency.

General properties—colour of the powder—smell—taste—relations to water and alcohol—effects of exposure upon the solution.

Character as a demulcent. Therapeutical applications. Mucilage for drink made in the proportion of ℥j. of gum to Oj. of water. Pharmaceutical uses.

TRAGACANTH.—TRAGACANTHA. *U. S.*

Product of several species of *Astragalus*, small, thorny shrubs, growing in Greece and Asia Minor. Mode of collection. Shape of pieces—colour—translucency—difficult pulverization—mode of pulverizing—odour—taste—relations to water. Components chiefly gum and bassorin. Tenacity of its mucilage. Purposes for which it is employed.

SLIPPERY ELM BARK.—ULMUS. *U. S.*

The inner bark of the *Ulmus fulva* or slippery elm, a large indigenous tree. Mode of preparation.

Shape of the pieces—colour—texture—odour—taste—relations to water.

Therapeutical applications. Used in infusion prepared in the proportion of ℥j. to Oj. External use.

FLAXSEED.—LINUM. *U. S.*

Seeds of the *Linum usitatissimum*, or common flax. A fixed oil is contained in the internal parts, and mucilage in the skin. Mode of obtaining the oil. Called *Linseed oil*—*Oleum Lini*, *U. S.* Colour, odour, and taste of the oil. Uses.

Mode of extracting the mucilaginous ingredients. Decoction of the seeds improper. The infusion made in the proportion of ℥j. to Oj.

Uses of powdered flaxseed.

LIQUORICE ROOT.—GLYCYRRHIZA. *U. S.*
LIQUORICE.—EXTRACTUM GLYCYRRHIZÆ. *U. S.*

Root of the *Glycyrrhiza glabra*, an herbaceous, perennial plant, indigenous in the south of Europe. Whence imported.

Gum Arabic Acaciae Gummi

Collected in Upper Egypt & Arabia exported from Smyrna Trieste Alexandria &c – That from Egypt or Turkey Gum in small fragments, whitish yellow minute fissures & more brittle & soluble than the other varieties. The Senegal gum is collected in larger pcs in leather sacks, roundish or oval pcs, yellowish color thin brittle & pulverizable, transparent, pcs white inodorous, pale mucilaginous taste. Soluble in water insoluble in alcohol, the latter precip. the aqueous solution. The solution in time generates acetic acid. Excellent demulcent in febrile cases good diet. Used in pharmacy for suspension of insoluble substances – If it were a gum resin the water of the suspension would precipitate the resin –

Astragalus Verus

Tragacanth Tragacantha It is whitish or yellowish white tortuous vermicular pcs. partially translucent, difficult to pulverize mucilaginous, odorless & nearly tasteless. Does not dissolve in water but swells up into an adhesive paste. Being more viscid is better for suspension than Gum Arabic

Arrow Root — Maranta

The roots beaten into a pulp & triturated with water, & the milky fluid strained & dried in sun Light white powder inodorous & tasteless. It is a pure Starch - Prepared by dissolving in hot water & adding lemon juice & sugar

Barley — Hordeum

Pearl barley is prepared by hulling rounding & polishing buhr in mill - Of a pearly whiteness Composed of Starch gluten sugar & gum - The decoction forms an admirable drink in febrile Complaints This decoction or barley water is prepared by boiling Zij of barley in 1/2 gall water down to two pints & strain

Shape and size of the root—character of the epidermis—colour externally and internally—colour of the powder—odour—taste—relations to water.

Characteristic principle, a sweet substance called *glycyrrhizin*. Different from sugar.

Uses of the root. Proportion in decoction, ℥j. of the root to Oj. of water. Uses of the powdered root.

Mode of preparing the extract. Place from which it is imported. Shape and size of the pieces—colour—appearance of the fracture—taste—impurities. Mode of refining. Shape and size of the pieces of refined liquorice. Uses.

ICELAND MOSS.—LICHEN. *U. S.*

Cetraria Islandica—Lichen Islandicus, Linn. Indigenous in the north of Asia, Europe, and America. Size and shape of the plant—consistence—colour—odour—taste—relations to water.

Interesting constituents, a starch like principle to which it owes its demulcent properties, and a bitter principle. Solubilities of these two principles. Mode of separating the bitter.

Effects on the system. Therapeutical uses. Administered in decoction made by boiling ℥j. of the moss in Oiss. of water to Oj. Given *ad libitum*.

IRISH MOSS.

Carrageen. Chondrus crispus—Fucus crispus, Linn. General character of the plant. Place of its growth. Therapeutical uses. Mode of administration. The decoction made in the proportion of ℥ss. of the moss to Oj. of water.

SAGO.

Product of the *Sagus Rumphii*, or sago palm, indigenous in the East Indies. Obtained from the pith of the trunk. Mode of preparation. Two varieties in the market—common sago and pearl sago.

Shape, size, and colour of the grains of common sago, and of those of pearl sago—taste—relations to water. Consists almost exclusively of starch.

Uses in disease. Mode of preparing it for exhibition. Proportions for the decoction, ℥j. of sago to Oj. of water. Additions.

TAPIOCA.

Product of the *Jatropha Manihot*, a plant of tropical America. Places in which it is cultivated. Two varieties—the sweet and bitter. Difference between them. Tapioca obtained from the root. Mode of preparing it.

Shape and size of the grains—colour—hardness—taste. Uses and mode of exhibition the same as those of sago.

ARROW ROOT.—MARANTA. *U. S.*

Product of the *Maranta arundinacea*, and other species—plants of the West Indies—cultivated in our southern states. Obtained from the root. Mode of preparation.

Form—colour—chemical nature—relations to water. Liability to mustiness. Purposes for which it is used. Mode of preparing it for use. Proportion for solution, a tablespoonful to the pint of water.

Starch of the potato, and from other sources, is often substituted for arrow root.

BARLEY.—HORDEUM. *U. S.*

Mode of preparing barley for medical use. Commonly called *pearl barley—hordeum perlatum*—when prepared.

Shape and size of the grains—colour—chemical constitution—relations to water—liability to mustiness. Medical uses. Form of administration. *Decoction of barley—Decoctum Hordei, U. S.*—commonly called *barley water*. Mode of preparation. Occasional additions.

CLASS XX.

EMOLLIENTS.

General Observations.

Substances capable of retaining moisture, and forming a soft mass, without irritating properties. They serve only as vehicles of warmth and moisture to the skin. They are useful in relieving the tension of inflamed parts, and in promoting suppuration. The individuals of the class are described under other heads.

CLASS XXI.

DILUENTS.

General Observations.

Mild liquids, which serve to dilute the contents of the stomach and bowels, to fill the blood-vessels, and to increase and at the same time dilute the secretions. The only liquid which can be used for this purpose is water. Additions are generally made in order to give it flavour, to render it somewhat nutritive, or to answer some indication independent of mere dilution. The advantages resulting from diluent drinks are, that they render the fluids with which they mix in all parts of the body less irritating, and thus absolutely relieve inflammatory affections. They may also prove useful, in some instances, by restoring a due degree of fluidity, and consequently of mobility, to the blood and secretions, rendered thick and viscid by disease.

Secale Cornutum Spurred Rye Ergot.

Is either the diseased seed or parasitic - It is 1/2 inch to inch & a half long - Color externally violet brown, within yellowish white, odor when in mass resembling putrid fish. Taste hardly perceptible at first, then disagreable & slightly acrid - Gives virtues to water & alcohol. Powders are apt to run on the male or the female has strong tendency to ergot - Its long continued use is highly dangerous - Terrible epidemics ascribed to it in Europe. dry gangrene by others putrid & convulsions

Nux Vomica Strychnos nux vomica Semina

The seeds are flat circular 3/4 inch in diameter covered with fine silky hairs attached to a thin coating covering the kernel which kernel is whitish hard horny & difficult to powder. They are inodorous of an acrid bitter taste, strongest in the kernel Yield virtues to water & alcohol, Strychnia is crystalline white inodorous excessively bitter with a metallic after taste neither volatile nor fusible - Soluble in nearly 7000 parts of water, freely soluble in alcohol & volatile oils very slightly in ether. - Its operation is peculiar & directed to nerves of motion causing involuntary rigid contractions which may fatally suspend respiration. Brain not essential to its action. Used in palsy &c Ranks next to Prussic Acid as poison. Applied externally in amaurosis sprinkled upon a blistered surface near the temples - Has been used for incontinence of urine & prolapsus ani -

Arsenic — Arsenicum

Poisonous only when combined with oxygen - The two following are the officinal preparations

Arsenious Acid is found in commerce in masses of vitreous fracture, milk white externally perfectly transparent internally Found in shops in flour like powder almost tasteless in solution has austere taste like sulph. of zinc, inodorous & soluble in water. Acts as poison with great energy, producing fetid state of monstrous salivation, black horribly fetid stools burning heat &c &c. Is as efficient as a poison when applied to fresh wounds as if taken internally The antidote is fresh hydrated peroxide of iron, which produces an insoluble & of course inert arsenite of iron & will advise every one to keep the antidote on hand & need not fear throwing too much into the stomach. make this antidote by treating a boiling solution of chrystallized sulph. of iron with nitric acid, mixed the orange fumes cease, dilute & filter & precipitate by an excess of ammonia - after giving the antidote use mucilaginous drinks & treat as for any inflammation

Liquor Potassæ Arsenitis Fowlers Solution is made by boiling arsenious acid & carb of Potass in Distilled water & adding Spirit of lavender - It is a transparent liquid with the color taste & smell of spt of lavender, incompatible with infusions & decoctions of Cinchona - Effects on the system

CLASS XXII.

Medicines belonging to the first great Division, not capable of being arranged in any of the preceding Classes.

SPURRED RYE.—SECALE CORNUTUM. *U.S.*

Commonly called *ergot*. Product of the *Secale cereale*, or common rye. Part of the plant. Question as to its origin.

Size and shape of the grains—longitudinal furrows—colour, external and internal—odour—taste—relations to water and alcohol.

Effects on the system. Consequences of its free and long continued use. Therapeutical applications. Given in powder or infusion. Dose of the powder, from 10 to 20 grains—of the infusion prepared with one drachm of ergot to four fluidounces of water, about f℥j.

NUX VOMICA. *U.S.*

Seeds of the *Strychnos Nux Vomica*, a tree growing in the East Indies. Character of the fruit.

Shape and size of the seeds—character of the surface—structure—character of the internal part—colour, external and internal—hardness—difficulty of pulverization—odour—taste—relations to water and alcohol.

Active ingredients, two alkaline principles called *strychnia* and *brucia*. The latter found also in the false Angustura bark, but not used because similar in properties to strychnia, and yet much weaker.

Strychnia. Form—colour—odour—taste—effects of heat—solubility in water and alcohol. Obtained for use from the *bean of St. Ignatius*.

Effects on the system. Poisonous action. Therapeutical applications. Dose of the powder, 5 grains—of the alcoholic extract from half a grain to 2 grains—of strychnia, from one-twelfth to one-sixth of a grain. External use of strychnia. Mode of applying it.

ARSENIC.—ARSENICUM.

Probably inert in the metallic state. Exceedingly powerful in combination. The arsenical preparations, when given in small doses, produce at first little obvious effect; but after a few days edematous swelling appears about the face, and if the medicine is persevered in, nausea occurs, with tremors, muscular debility, diminished force of the circulation, and other indications of an enfeebled condition of the vital powers. Their action appears to be compounded of an irritative operation upon the stomach, and of an operation entirely peculiar to themselves upon the system at large. They are evidently absorbed; as they produce the same effects when applied externally as when taken into the stomach. In large quantities they are powerfully poisonous. The symptoms produced are those of inflammation or disorganization of the mucous membrane of the stomach and bowels, complicated with great general prostration. Symptoms enumerated. Treatment of the poisonous effects of arsenic. Use of the *hydrated peroxide of iron* as an antidote. Mode of preparing this oxide.

Arsenic is contra-indicated in all cases of irritated or inflamed stomach, and in states of disease attended with great prostration of the vital powers. Useful in intermittent diseases, in which it may be employed when circumstances forbid the use of quinia, or this medicine has been used ineffectually. Employed also in cutaneous affections, particularly in those of a scaly character, and in secondary syphilis especially when attended with nodes.

The only preparations recognised by the U.S. Pharmacopœia are the *Arsenious acid* and *Solution of Arsenite of Potassa*. The sensible and chemical properties of the acid have been already treated of. Its dose is one-twelfth of a grain, made into pill with the crumb of bread, and taken 3 times a day.

Solution of Arsenite of Potassa—Liquor Potassæ Arsenitis, U.S.—commonly called *Fowler's solution*. Mode of preparation—colour—taste. Dose, 10 drops, 2 or 3 times a day.

MERCURY.—HYDRARGYRUM. *U.S.*

The action of mercury is quite peculiar. In very small doses, it may be given so as to produce no obvious effects upon the system, and yet to exert a powerful influence in dis-

ease. In this mode of action it is said to be *alterative*. More freely employed, it makes a very sensible impression. The most evident symptoms are those ranked together under the name of salivation or ptyalism. Description of these symptoms. At the same time, it gives rise to an excitement of the circulation, evinced by a peculiar quick and jerking pulse, increases nervous susceptibility, augments most of the secretions, and invigorates absorption. Probably other unperceived changes take place in the system, the actions of which appear for a time to be completely revolutionized. The effects produced by mercury gradually subside, and unless very severe, usually leave the general health unimpaired.

Therapeutical applications of mercury considered, *first*, in reference to its general influence upon the system as indicated by its action upon the gums; *secondly*, in reference to its alterative influence. The effects of mercury connected with its sialagogue operation, upon which curative indications are founded, may be included under the following heads:

1. Excitement of the secretory functions. Circumstances under which it may be useful in reference to this effect. Whenever the secretions are arrested, and no contra-indicating circumstances exist.

2. Altered condition of the capillary vessels. It is probably by some influence over these vessels that mercury proves useful in most chronic inflammations. It appears to be peculiarly adapted to inflammations attending a typhoid state of the system.

3. Peculiar action upon the liver. Upon this organ and its appendages mercury exerts an influence greater, perhaps, than upon any other part of the system. Peculiarly advantageous in hepatic inflammations and congestions, and in all the numerous complaints which have their origin or support in deranged conditions of this organ.

4. Excitement of the absorbents. Hence its use in dropsical complaints, and in chronic tumefactions, though it operates in these affections also upon other principles.

5. Local inflammation of the mouth and fauces. This is no doubt sometimes useful by its revulsive influence. But it is seldom advisable to employ mercury with a view to this effect alone; as there are other more convenient and safer modes of producing revulsion.

6. General revolutionizing action. There are some complaints in which the curative influence of mercury admits of explanation, in the present state of our knowledge, only by resorting to the supposition that it produces general effects incompatible with the deranged condition in which the disease consists. One of these complaints is syphilis. Observations in relation to the prejudice against its use in this affection. Much of this prejudice is ascribable to its abuse. Great care is requisite to restrain its action within due limits, and to persevere with it sufficiently long. The poisonous effects of lead upon the system constitute another disease in the cure of which mercury may be said to act by its revolutionizing influence. Further remarks in relation to its therapeutical application upon this principle.

The best modes of bringing the system under the mercurial influence next considered. The belief stated that it acts through the medium of absorption.

In general, when the object is to produce a gentle ptyalism, *calomel* or the *blue pill* may be given, the former in the dose of half a grain, or a grain, the latter in that of 3 or 5 grains, morning, noon, and night. Any purgative effect is to be counteracted by opium. In cases of irritable stomach, the dose may be reduced, and if necessary given more frequently. If the medicine cannot be taken by the stomach, it will be necessary to employ it externally. For this purpose the mercurial ointment may be resorted to. This is also sometimes useful as an addition to internal means, particularly where the disease exists in the course of the external absorbents. Places to which the ointment is applied, and mode of application. It is sometimes necessary to produce the mercurial influence very speedily. In such cases the medicine must be introduced by every avenue. The doses are to be augmented, external frictions employed, and the ointment applied to blistered surfaces. Sometimes fumigation may be advantageously employed.

Great difference in the susceptibility of different persons to the action of mercury noticed. While in some instances it is almost impossible to effect the mouth, in others excessive salivation is induced by small quantities of the medicine. Different diseases are attended with a difference in this susceptibility. Sometimes the medicine accumulates in the system, and after having been given for some time with no apparent effect, breaks out at length with an overwhelming force. Practical cautions founded on these facts. A good rule is always to administer mercury with great caution, unless the necessity of the case demands its speedy action. In the great majority of cases, it is sufficient to produce the slightest effect upon the gums, and to give the medicine so as to sustain this effect.

Description of the mercurial sore mouth in its different stages and degrees of violence. Dangers of excessive salivation. Condition of mouth sometimes left behind after its subsidence. Treatment of excessive salivation.

Poisonous action of mercury on the constitution in some individuals. Attended with great prostration. Generally observed in hospitals. Treatment.

similar to arsenious acid - Employed mostly in intermittent fevers - Besides the general properties of the arsenical preparations, particularly adapted to several diseases as cutaneous affections, chorea & periodical headaches - Each fluidrachm of this solution contains 1/2 gr of arsenious acid -

Mercury Hydrargyrum

It is found native combined with sulphur, silver &c, the most abundant however is the sulphuret or native cinnabar - Both this & arsenic have been erroneously ranked under the head of tonics - We know nothing of its modus operandi, except that it acts thro' the medium of the circulation & possesses a peculiar alterative power over the vital functions. Operation sometimes attended with certain obvious stimulant-effects, & in such case is very prone to act on salivary glands inducing condition termed ptyalism, marked by quickened circulation, frequent jerking pulse & exaltation of nervous sensibility - It influences all the secretions - In typhus & typhoid state may be used from commencement of disease, & if the patient's mouth can be made sore he is probably safe - Dr W does not believe in what is called the mercurial disease, nor in its being production of the symptoms of secondary syphilis - Children are very unsusceptible to its ptyalizing operation, perhaps more so under two years of age.

If bowels are peculiarly irritable or irritation with the ointment, or inside of legs & thighs, continues the friction until the ointment disappears. In ptyalism the first effect an coppery taste, slight soreness of gums unpleasant sensation in teeth when teeth are closed, then the gums begin to swell the epithelium becoming whitish & opaque & peculiar odor of breath called mercurial fetor. The saliva now begins to flow & if the affection proceed the gums become swollen, ulcerated, tongue coated, pain excessively painful & may even induce gangrene &

Mercurial Ointment Unguentum Hydrargyri

Rub up equal parts of mercury & some fatty substance - All substances like turpentine sulphur are injurious the former being too irritating, & the latter combines chemically forming sulphuret, Color bluish becoming darker by age - Used when stomach is too irritable for internal use of mercury, or as a revulsant in various diseases -

Mercurial Plaster Emplastrum Hydrargyri

Rub up mercury with Resin & Olive oil, first melting the two latter - It is discutient, Dr W says no doubt of its influence in preventing the suppuration of pustules in small pox -

Mercurial Pills Pilulae Hydrarg: Blue Pills

Rub up Mercury with Confect of roses then add a little liquorice root - Dark Blue color, becoming slightly reddish by age, one of the mildest & least irritant of the mercurial preparations - The best mass is made in London by Squire

Many make emulsion by rubbing the mass up with any mucilage & suspending it in water, it is a good addition to chalk mixture when the biliary secretion is deficient -

Mercury with Chalk. Hydrarg. cum Calcis Carbonate

The mercury is merely rubbed up with the chalk, It is not so completely divided in this preparation - Mild in its action, similar but much weaker than the blue pill -

Black Oxide - Hydrarg Oxidum Nigrum Protoxide

Mix Calomel with a solution of Potassa & evaporate to dryness - The oxygen & chlorine exchanging places -
Dr W thinks it no better than the Calomel alone, Color is greenish black, becoming olive in time -

Red Oxide. Hydrarg Oxidum Rubrum Hydrargyri Precipitatus Ruber

Form a nitrate of by the action of nitric acid on mercury, then boil this nitrate with distilled water & rub the mass which remains after evaporation into powder - It is a brilliant red powder - Slightly soluble in water too harsh for internal use - Used externally as stimulant & escharotic - Per - Bi - or Deutoxide -

Mild Chloride Hydrarg. Chloridum Mite Calomel

Boil mercury & Sulph Acid together & when cold rub up with the Sulphate, Chloride of Sodium - Remove impurities by boiling with distilled water. Form of a white crystalline cake, officinally in the form of powder. Its

Occasionally mercury produces excessive and exhausting sweats, sometimes a peculiar eruptive affection. Treatment under these circumstances.

Alterative use of mercury next considered, viz. its use in quantities insufficient to produce any obvious effects on the system. This employment of mercury is important. It is especially advantageous in functional complaints of the digestive viscera, and more particularly when the liver is involved. Remarks upon the colour and quantity of the fæces as an indication of the state of the hepatic function. The alterative use of mercury is called for when the stools are white or clay coloured or very dry and scanty, indicating a deficient secretion of bile—when they are very copious, liquid, and of a bilious colour, as in bilious diarrhœa and cholera morbus—and when they are dark coloured or black, and of a tarry consistence, as in melœna. Methods of administering mercury with a view to its alterative action. In chronic cases with constipation, a blue pill may be given, or from half a grain to a grain of calomel, every night or every other night, followed in the morning, if the bowels be confined, by some gentle aperient. In acute cases, with irritable stomach and bowels, one-sixth of a grain of calomel or half a grain of the blue pill may be given every half hour, hour, or two hours, according to circumstances, and suspended when the requisite quantity has been taken—care being observed to avoid any effect upon the gums. A little opium may sometimes be advantageously added.

The preparations of mercury considered in five divisions, 1. metallic mercury, 2. oxides, 3. chlorides, 4. salts, and 5. sulphurets.

1. *Metallic Mercury.*

Not given internally in the liquid form. Always in a state of minute division. Mode of effecting this division. Change effected in the metal by trituration. Partial oxidation produced.

1021 1. *Mercurial ointment—Unguentum Hydrargyri, U.S.* Constituents. Mode of preparation. Colour. Effects of time upon the colour. Purposes for which it is employed. Modes of application.

815 2. *Mercurial plaster—Emplastrum Hydrargyri, U.S.* Constituents, mode of preparation, and uses.

930 3. *Mercurial pills—Pilulæ Hydrargyri, U.S.*—commonly called *blue pills.* Constituents. Mode of preparation. Colour of the mass. Effects of age. Kept in mass or made into pills. In the former state called technically *Massa Pilularum Hydrargyri.* Weight of the officinal pill 3 grains, containing 1 grain of mercury. Relative virtues of this preparation. Dose, 1 pill 3 times a day as a sialagogue—1 every night or every other night as an alterative. The mass is sometimes advantageously given in emulsion.

884 4. *Mercury with chalk—Hydrargyrum cum Calcis Carbonate, U.S.* Constituents. Mode of preparation. Therapeutical use. Dose, from 5 to 20 grains twice daily.

2. *Oxides.*

874 1. *Black oxide of mercury—Hydrargyri Oxidum Nigrum, U.S.* Mode of preparation. Chemical nature. Form and colour. Effects of time. Dose, from 1 to 3 grains, 2 or 3 times a day.

875 2. *Red oxide of Mercury—Hydrargyri Oxidum Rubrum, U.S.*—commonly called *red precipitate.* Mode of preparation. Chemical nature. Form—colour—solubility in water. Used externally as an escharotic and stimulant. Complaints in which it is employed. Modes of application. There is an officinal ointment called *Unguentum Hydrargyri Oxidi Rubri.* Much used.

3. *Chlorides.*

866 1. *Mild chloride of mercury—Hydrargyri Chloridum Mite, U.S.*—commonly called *calomel*—sometimes, but erroneously, *submuriate of mercury.* Chemically it is the *protochloride of mercury.* Mode of preparation. Impurity. Mode of purifying it. Form—specific gravity—colour—taste—insolubility. Incompatibles. Dose, from half a grain to a grain, 3 times a day. *Howard's calomel.* Relative value of calomel as a mercurial.

861 2. *Corrosive chloride of mercury—Hydrargyri Chloridum Corrosivum, U.S.*—commonly called *corrosive sublimate.* Chemically it is the *bichloride of mercury.* Mode of preparation. State as first obtained. Powdered for use. Colour—taste—solubility in water and alcohol. Incompatibles. Character as a sialagogue. Dangerous effects in overdoses. A corrosive poison. Therapeutical application. Dose, from one-eighth to one-quarter of a grain, 3 or 4 times a day. Given in pill or solution.

4. *Salts.*

878 1. *Yellow sulphate of mercury—Hydrargyri Sulphas Flavus, U.S.*—commonly called *Turpeth mineral.* Mode of preparation. Chemical nature. Form—colour—taste—insolubility. Dose, from half a grain to 1 grain as an alterative—from 2 to 5 grains as an

Very small proportion employed (Materia Med.)

emetic. Scarcely ever used at present for these purposes. Sometimes employed as an errhine, diluted with 5 parts of starch.

2. *Ammoniated mercury—Hydrargyrum Ammoniatum, U.S.*—commonly called *white precipitate.* Mode of preparation. Chemical composition. Form—colour—insolubility. Used only externally. Purposes for which it is employed. Mode of application. An ointment made with it is officinal under the name of *ointment of ammoniated mercury.*

3. *Nitrate of Mercury.* Used only in the form of ointment. Mode of preparing the *ointment of nitrate of mercury—Unguentum Hydrargyri Nitratis, U.S.*—commonly called *citrine ointment.* Colour of the ointment. Therapeutical applications. Frequently diluted with lard.

5. *Sulphurets.*

1. *Red sulphuret of mercury—Hydrargyri Sulphuretum Rubrum, U.S.*—commonly called *cinnabar.* In the powdered state called *vermilion.* Mode of preparation. Chemical constitution. Appearance in mass—weight—colour—colour of the powder—odour—taste—effects of heat—insolubility. Used only for fumigation. Mode of application.

2. *Black sulphuret of mercury—Hydrargyri Sulphuretum Nigrum, U.S.*—formerly *Ethiops' mineral.* Mode of preparation. Chemical nature. Form—colour—odour—taste—insolubility. Scarcely ever used at present.

IODINE.—IODINUM. *U.S.*

Chemical nature of iodine. Origin and mode of preparation. Form—weight—colour—aspect of the surface—odour—taste—relation to water, alcohol, and ether, as solvents.

Effects upon the system. In small quantities it promotes the appetite, increases the strength of the pulse, operates gently on the bowels, and appears to act as a tonic. But if continued, it is found greatly to promote absorption, and at the same time to increase almost all the secretions, so that emaciation results, and goes on increasing with the use of the medicine. If still longer continued, it gives rise to derangements of the nervous system. Digestion is at length impaired, and the patient is worn out with hectic symptoms. When given in large doses, it produces the same effects in a greater degree, and the result is more speedy. In very large quantities it acts as a corrosive poison; but it is frequently rejected from the stomach, and therefore not necessarily fatal. More danger is said to accrue from small doses very long continued than from an overdose at one time.

Therapeutical applications of iodine. Dose, one quarter to half a grain, 3 times a day, and gradually increased to one grain or more. Never used in powder. Dissolved either in alcohol, or in a watery solution of the iodide of potassium. The *tincture* is officinal. Proportion of iodine to alcohol. Dose, from 10 to 20 drops. Cautions as to the age of the tincture, and the mode of keeping it.

The *iodide of potassium—Potassii Iodidum, U.S.*—is officinal. Mode of preparing it. Form—colour—effect of exposure—taste—relation to water and alcohol as solvents. Probably converted into *hydriodate of potassa* in solution. Dose, from 1 to 2 grains; but given lately in much larger doses with impunity. Its solution has the property of dissolving iodine. A convenient method of administering the medicine thus afforded. *Lugol's solution*, containing ℈j. of iodine, ℈ij. of iodide of potassium, and f℥vij. of water, given in the dose of 6 drops repeated twice a day and gradually increased.

Numerous preparations of iodine besides those mentioned have been used. Such are the *iodides of iron, of lead, of mercury, of starch, of sulphur*, and *of zinc*, and the *iodohydrargyrate of potassium.* Reasons for thinking most of these superfluous.

Iodine is externally used in the way of bath or ointment. Proportions of the ointment, ℈j. of iodine and ℥j. of lard. Effect on the skin. The ointment of iodide of potassium has probably little efficacy, though frequently used.

Specific gravity is 7.2 - Color light buff or ivory or perfectly white, tasteless & insoluble - Incompatible w alkalis, alkaline salts & alkaline bicarbonates

Corrosive Chloride of Mercury Hydrarg Chloridum Corrosivum
Corrosive Sublimate

Preparation same as Calomel except that - they say 2 equiv of Chlorine from adding sulphate of the Bichloride to form of mercury - As first obtained it is in the form of white semitransparent ponderous masses, taste acrid styptic & durable, soluble in 16 parts of cold & 3 of boiling water in 3 parts of cold alcohol & its own weight of boiling alcohol - (differs from Calomel in its solubility) Incompatible same as Calomel & also by with metals gluten & albumen - White of eggs in fact being one of the best antidotes - less apt to salivate than most of the mercurials - the above mentions cure of salivation by the use of it -

Yellow Sulphate of Mercury - Hydrarg: Sulph. Flavus
Turpeth Mineral

Boil Mercury & Sulph acid together to evaporation & rub the mass into powder - It is a soluble subsulphate. Form of powder, color lemon yellow, taste acrid Soluble in 200 parts boiling cold 100 boiling water.

Ammoniated Mercury Hydrarg. Ammoniatum
White Precipitate

Dissolve Muriate of Ammonia & Corrosive Chloride in water & add solution of carb: potass: Light perfectly white powder. Insoluble in water & alcohol - Used only externally in form of ointment in cutaneous eruptions

Nitrate of Mercury used in form of Unguentum Hydrarg Nitratis
Citrine Ointment

Boil nitric acid Mercury together & add neats foot oil & lard - One of the most valuable ext: preparations of mercury At first prepared is of a beautiful yellow color in time becomes dirty greenish hue - Particularly useful in linea cap itis & other scaly affections

Red Sulphuret Hydrarg Sulphuretum Rubrum Vermilion Cinnabar

Melt mercury & sulphur together - In nature is heavy, red, brilliant & crystalline Inodorous tasteless, decomposed by heat insoluble in water & alcohol. For fumigation throw 1/2 iron & inhale the vapors

Potass Carbonate have more effect on Urine than the Soda Carbonate

aromat ammon Alcohol or
— Spt of Ammonia

= Lime water & milk excellent Diet in gastritis when any thing else is vomited

Lime Calx

A gallon of distilled water poured on 3ii of lime & kept in well stopped glass bottles - By exposure attracts Carbonic acid Water dissolves but a minute proportion of the lime, & contrary to the general rule, less when hot, than cold. It has a disagreable alkaline taste. Useful in diabetes, diarrhea, dyspepsia with nausea & vomiting - Milk conceals the offensive taste.

Prepared Carb: of Lime or Creta preparata, is made by stirring Carb: of Lime with water, pour off the Liquor & dry the sediment from it. In form of powder, taste alkaline. Not being purgative, well adapted to diarrhea, accompanied with acidity.

Testa Preparata. Oyster shells are prepared in same way as Carb: of Lime & differs from it in containing animal matter, which by some is supposed to make it more acceptable to delicate stomach.

Magnesia may be given in smaller dose than its Carb: & does not occasion flatulence

CLASS XXIII.

ANTACIDS.

General Observations.

Substances which are capable of combining with and neutralizing acids. Hence all salifiable bases are antacids; but the alkalies, alkaline earths, and their carbonates, are the only ones used medicinally with this view. They are useful by correcting excess of acidity in the primæ viæ, and probably also in the blood. They serve also to correct or prevent acidity in the urine, and thus prove useful in the uric acid form of gravel.

CARBONATES OF POTASSA.

These have been already fully described. As antacids, the carbonate is given in the dose of from 10 to 30 grains, the bicarbonate in that of 20 to 40 grains. The infusion of hickory ashes and soot, sold in the shops under the name of *alkaline infusion*, is an impure solution of the carbonate of potassa. Mode of preparation and uses. Dose, f℥ij. 3 times a day.

CARBONATES OF SODA.

1. *Carbonate of soda.* Source, and mode of preparation. Shape of the crystals. Effect of exposure. Taste—solubility in water—alkaline reaction. Proportion of water of crystallization. Inequality of the salt as found in the shops. Better to use the dried carbonate. Dose of the anhydrous salt, from 10 to 30 grains—of the crystallized, from 30 to 60 grains.

2. *Bicarbonate.* Formerly called *supercarbonate of soda.* Mode of preparation. As usually found in the shops not strictly a bicarbonate. Taste and solubility. Advantages as an antacid and antilithic. Dose, from ℥ss. to ℥j. Pleasantly administered in carbonic acid water with ginger syrup.

AMMONIA.

Sometimes used as a stimulant antacid. Given in the form of aqueous or alcoholic solution. *Water of ammonia—Aqua Ammoniæ, U. S.*—and *Ammoniated alcohol—Alcohol Ammoniatum, U.S.*—are the officinal preparations. Seldom used internally. The *Aromatic ammoniated alcohol—Alcohol Ammoniatum Aromaticum, U.S.*—frequently called *aromatic spirit of ammonia*, is much employed. Uses. Dose, from 15 to 30 drops, largely diluted. *Carbonate of ammonia* may also be used as an antacid. Before treated of.

LIME.—CALX. *U.S.*

Employed in solution under the name of *lime-water—Liquor Calcis, U.S.* Mode of preparing lime water. Effects of exposure to the air. Mode of keeping it. Proportion of lime dissolved. Taste. Therapeutical uses. Seldom given alone. Use of lime-water and milk. Effect of this mixture on the taste of the lime-water.

Carbonate of lime much used, either in the form of *chalk* or of *oyster shells.* Mode of preparing chalk. Called by the United States Pharmacopœia, when prepared, *Calcis Carbonas Præparatus*, by other authorities, *Creta Præparata.* Form—taste—insolubility in pure water. Solubility in water impregnated with carbonic acid. Combines astringency with antacid properties. Therapeutical applications. Given in powder or suspended in water by means of gum Arabic. Dose, from 10 to 20 or 30 grains, every hour or two, or less frequently.

Mode of preparing oyster shells. Officinal title when prepared, *Testa Præparata.* Difference in composition from chalk. Ground of preference in certain cases. Dose and mode of administration the same.

MAGNESIA.

Already spoken of in relation to its preparation, sensible and chemical properties, and uses as a laxative. As an antacid it is one of the most powerful, in consequence of its low combining number. Cases to which it is applicable. Dose, from 10 grains to a drachm. The carbonate is occasionally used in double the dose.

CLASS XXIV.

ANTHELMINTICS.

General Observations.

Substances which have the property of poisoning or debilitating worms in the alimentary canal, and thus rendering them more easy of expulsion. In relation to their mode of operation, it is probable that some act by a directly poisonous influence upon the worm, others by a mechanical agency. In this view of the class of anthelmintics, all those medicines are not included in it which are employed in the expulsion of worms, but such only as operate advantageously, in consequence not of their relations to the human system, but of that which they bear to the worms themselves.

PINK-ROOT.—SPIGELIA. *U.S.*

Root of the *Spigelia Marilandica*—an herbaceous perennial plant, growing in the Southern States. General character of the plant. The whole of it is possessed of anthelmintic virtues, but the root is most powerful, and is the only part recognised by the Pharmacopœia.

Shape and aspect of the root—colour—colour of the powder—odour—taste—relations to water and alcohol—effects of exposure.

Effects on the system. Effects on the worms. Modes of administration. Dose of the powder for a child from 2 to 4 years old, from 10 to 20 grains, repeated night and morning for three or four days, and then followed by a cathartic. The powder is sometimes combined with calomel in the proportion of 12 grains of the former to 4 of the latter. Dose of the infusion made with ℥ss. of the root to Oj. of water, for a child, from f℥ss. to f℥j., 2 or 3 times a day. The infusion is often associated with senna, of which ℥ss. may be added to the preparation, and the same dose given.

PRIDE OF CHINA.—AZEDERACH. *U.S.*

Bark of the root of the *Melia Azederach*, or *Pride of China*, a native of the East Indies, and naturalized in our Southern States. Used chiefly in the South, seldom or never in the Northern States. Effects of the bark on the system. Effects on the worms. Used in decoction made by boiling Oij. of water with ℥iv. of the fresh bark to Oj. Dose for a child, f℥ss. every 2 or 3 hours till it operates, or night and morning for several days, and then followed by a cathartic.

WORMSEED.—CHENOPODIUM. *U.S.*

Seeds of the *Chenopodium anthelminticum*, or Jerusalem oak. Those also of the *C. ambrosioides* are used. Both of these plants are indigenous herbaceous perennials. Odour and taste of the plants. These properties reside in a volatile oil which pervades the whole herb. The seeds only are officinal.

Size and shape of the seeds—colour—colour when deprived of their outer covering.

Effects on the system. Effects on the worms. Administered in substance, bruised or powdered, in the dose of ℈j. or ℈ij. for a child. The volatile oil is officinal, under the name of *Oleum Chenopodii*. Mode of procuring it. Colour and odour of the oil. Dose, from 4 to 8 drops for a child, repeated morning and evening.

COWHAGE.—DOLICHOS. *U.S.*

Product of the *Dolichos pruriens*—a climbing West India plant. Shape and size of the fruit. External covering of hairs or bristles. Colour of these and mode of separating. Mode in which they affect the worms. Administered in electuary. Dose of the electuary for an adult, ℥ss., for a child 3 or 4 years old, ʒj.

MALE FERN.—FILIX MAS. *U.S.*

Root of the *Aspidium Filix Mas*, or male fern, growing in Europe and North America. Character of the root—shape in its unbroken state—condition as usually found in the shops—colour—odour—taste—relations to water, alcohol, and ether. Effects of time upon

Pink No. 4

Pink Root — Spigelia Marilandica

The Carolina pink is herbaceous plant with perennial root. Consists of slender woody fibres, with knotty head, yellowish brown, faint odor, taste nauseous slightly bitter, yields virtues to water. Impaired by time. over doses may give rise to violent convulsions, has but little effect on the system in ordinary doses - given either in substance or infusion

Evacuates mildly, it purges

Pride of China — Azederach — Melia

Cathartic emetic & anthelmintic

Worm Seed — Chenopodium anthelminticum — Semina

The seeds are irregularly spherical about the size of head of pin dull brownish color externally, when bruised of a shining dark color.

The anthelminticum has no leaves among the flowers
or ambrosioides has leaves

Oleum Chenopodii is obtained by distillation, of a yellow color, with peculiar odor of plant,

European Wormseed a species of Artemisia

Pomegranate Root. Radix

Child's virtues d water, astringent & anthelmintic (useful in tenia from debilitating the worm, &)

Oil of Turpentine useful in Tenia, as it destroys or debilitates the worm, so that loosens its hold & is discharged

Calcis Stannii Powder of Tin

Prepared by melting tin & stirring it while cooling into a powder - Particularly used in Ascaris Lumbricoides -

Hydr: Chlorid: Mite: Most efficient anthelmintic from the bile which it secretes - Dose 4 c 6 grs:

its virtues. Effects on the system. Mode of action on the worm. Peculiar application. Scarcely ever used in this country.

POMEGRANATE ROOT.

Bark of the root of the *Punica Granatum*, or pomegranate. Relations of the root to water. Effects upon the system. Peculiar vermifuge application. Administered in decoction made by boiling ℥ij. of the bark in Oij. of water to Oj., one third of which, repeated every half hour till the whole is taken, is the dose for an adult.

OIL OF TURPENTINE.

Powerfully anthelmintic. Particular vermifuge application. Dose for an adult, from f℥ss. to f℥ij., or even f℥iij. Effects produced upon the system by this dose. Followed in 2 or 3 hours by a dose of castor oil.

In small doses of 4 or 5 drops, repeated several times a day, the oil is useful in the stomachic worms of children.

TIN.—STANNUM. *U.S.*

Used in the form of powder. Mode of preparing powdered tin—*Pulvis Stanni, U.S.* Appearance. Mode of operating upon the worms. Particular application. Dose, from ℥j. to ℥j.

Calomel most efficient anthelmintic
for the bile which it secretes – grs 4 c 6 –
Finished Thursday 16th March 1843

Go on with Med – same evening –