A syllabus of lectures on materia medica and therapeutics : delivered in the Atlanta Medical College / by J.G. Westmoreland.

A

SYLLABUS

OF

LECTURES

ON

MATERIA MEDICA AND THERAPEUTICS,

DELIVERED IN THE

ATLANTA MEDICAL COLLEGE,

BY

J. G. WESTMORELAND, M. D.

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PREFACE.

Not intended to take the place of a regular work on Materia Medica, this Syllabus has been hastily thrown together. It is designed to meet the wants of students in attendance upon the course of lectures on Materia Medica and Therapeutics in the Atlanta Medical College It is only by such it will be properly understood and appreciated, and can, therefore, only be used advantageously with the lectures. The want of such a work has been sensibly felt by former classes in the Institution.

As the classification of remedies, and arrangement for the course, differ in many respects from the text-books in their possession, students find it impossible to make the course of instruction in this particular department so profitable as they might otherwise do. To meet this embarrassment, and thereby, in some degree, at least, facilitate the learner, has the work been undertaken. Nothing but the imperious demand, which is supposed to exist, could have induced the author to perform this task under the circumstances which surround him; and he bespeaks for the work the charitable forbearance of the reader toward its many imperfections.

If, in the publication, the object above stated be accomplished, he is content, whatever may be the judgment of its merits by the profession.

GENERAL OBSERVATIONS.

MATERIA MEDICA, according to the most literal signification, means the description of material or pharmacological agents; but under this term are considered remedies not only imponderable, but those purely psychical in their character.

Therapeutics, considered more appropriately in connection with the description of remedies, was formerly understood to contemplate all the subjects now treated of in a course of lectures on the practice of medicine; but since a separate Chair has been established in all medical institutions, for the investigation and treatment of disease, this term is only understood to imply a consideration of the modus operandi of remedies.

To the proper understanding of the nature, &c., of remedies, and of their therapeutical application, a familiarity with *Chemistry* and *Physiology*, is indispensable. The effects of medicine cannot be well understood without a knowledge of the functions of an organ in health. It is by comparing normal functions with the changes made by disease and by the action of remedies upon organs, that we are made to understand the extent of disturbance, the nature of the derangement, and the means likely to restore normal action. *Anatomy* must be understood, in order to the study of Physiology. It is known that *Materia Medica*, Anatomy, Physiology and Chemistry, are the pillars upon which the superstructure of the more practical branches of medical science must be built, and that each must be known, in order to the proper appreciation of the others.

MODUS OPERANDI OF MEDICINES.

By this term, is meant an explanation of the results following the use of remedies.

The impressions sought in the administration of remedies, are the result of chemical, vital, or mechanical changes in the various organs of the body, and such impressions are called *direct* or *indirect*, *local* or *general*, *primary* or *secondary*, according to the manner in which these changes bring about the desired impression.

Local Action is the result of contact of the remedy with the part ultimately to be impressed. The effect of irritants when placed in contact with parts, whether acting chemically, vitally or mechanically, is called local action. Escharotics, demulcents, and various other excitants and mechanical agents for internal or external application, afford examples of this mode of action.

General Action, is that from which we derive benefit in the use of most internal remedies. The medicine, introduced into the system in whatever way it may be, affects particular parts by a specific action, from which impressions are made on various organs by that general sympathy with, and dependence of, one organ upon another throughout the body. Medicines thus acting, are carried to the organs of their selection by means of the circulation and otherwise, and from the peculiar properties possessed, affect these parts to the exclusion of others. Impressions are also made upon portions of the nervous system, with which certain remedies may come in contact, and are transmitted along the nervous cords, not only to the nervous centres, but to other tissues by means of a modification thus produced in the functions of the nerves themselves. So that the nervous, as well as the circulatory system, is necessary to the transmission of the general impression of remedies—Emetics, anodynes, &c., generally act in this way.

Direct Action.---By this term, we mean the organic or functional changes produced in apart by the remedy itself, whether applied immediately to the part, or carried thither by the circulation, or other means of transmitting impressions.

Indirect Action is the modification of the function of an organ, not by the action of the remedy upon it, but in consequence of such action upon another organ, exercising control over that part thus indirectly affected.

This form of action is that which is most frequently sought in the treatment of disease. Impressions are made by the local as well as general action of medicines upon certain parts which are not diseased, with the view of controlling disease in an organ remote. For example: the local action of a blister upon the skin, affecting the nervous system and capillary circulation, relieves an internal organ diseased, not by any direct action upon it, but indirectly by modifying the circulatory and nervous system.

Primary and Secondary Action.—Impressions made upon an organ by medicines are often followed by different and sometimes opposite states of the organ. The action of stimulants is often succeeded by a state of depression, the state of excitement being the primary, and that of depression the secondary effect of the remedy. For instance; opium excites the brain as a primary effect, and as this subsides a depressed state of the organ ensues, which we term its secondary action.

FORMS OF PREPARATION.

According to the degree of consistence, the preparations of remedies are termed solid, liquid, and semi-fluid or soft solid.

The solid preparations are called *pills*, *powders*, *lozenges*, and *suppositories*.

The liquids are:—*Tinctures*, *infusions*, *decoctions*, *wines*, *vinegars*, and *solutions*.

The soft solids, or semi-fluids, are:—*plasters*, *ointments*, *cerates*, *honeys*, *syrups*, and *electuaries*.

Pills are globular masses of convenient size for swallowing, made of medicinal ingredients, and, when not sufficiently adhesive, combining tenaceous substances in order to preserve the proper form. Crumb of bread, conserve of roses, gum arabic, &c., are generally used for this purpose. Pills prepared with any of these articles are likely to deteriorate by time, becoming either mouldy or excessively hard, and are therefore more active when recently prepared.

Powders are substances having undergone minute division by trituration or grinding, and are simple or compound, according as one or more articles constitute the powder.

Lozenges or *Troches* are medicinal substances incorporated with sugar and water, and evaporated to a solid consistence, then divided into pieces of convenient size, and of various shapes. These are made of articles required to be taken only in small quantities, and usually consists of mucilaginous and expectorant remedies, intended to be swallowed gradually by suffering the Troche to dissolve upon the tongue.

Suppositories are remedial agents made into solid masses of convenient size to be inserted into the rectum.

Tinctures are solutions of the active ingredients of drugs in alcohol. Some articles yield their virtues more readily to dilute alcohol, others to alcohol, therefore tinctures are prepared from both of these.

Infusions are prepared with cold or warm water, and contain the medicinal virtues of the articles from which they are prepared.

Decoctions are made by boiling in water substances from which they are prepared. Many vegetable articles, particularly those whose virtues depend upon volatile oils, do not admit of this form of preparation.

Wines and *Vinegars* are solutions of the active principles of drugs, in these liquids respectively, by maceration, and are prepared only from those articles which yield to them readily their virtues.

Plasters are composed of wax, resin and other adhesive substances, intended for external application, and require the application of heat to make them sufficiently soft to adhere. They are generally spread upon cloth or leather.

Ointments are prepared of lard and other unctious substances, and are of proper consistence, at ordinary temperature of the atmosphere, for application by being rubbed on the surface, or spread upon cloth.

Cerates are of about the same consistence of ointments, and ordinarily contain tenaceous substances to insure their adherence to abraded and otherwise diseased surfaces, which they are intended to protect.

Syrups are concentrated solutions of sugar in water impregnated with medicinal substances. *Simple Syrup* is a solution of sugar in pure water, and the compound syrups take the name of the medicine which they contain.

Electuaries are prepared by mixing medicines in the form of powders with syrup, honey or molasses. This is a convenient extemporaneous preparation, for the administration of calomel, quinine or any other remedy in the pulverized form.

PARTS TO WHICH MEDICINES ARE APPLIED.

The particular parts of the body to which remedies are applied, as well as their form of preparation, is an important consideration in Therapeutics. From caprice or peculiar conformation, it is sometimes found impracticable to give medicines in the way we would prefer. Some, there are, who find it impossible to swallow a pill. Again, there are those who cannot retain in the stomach for a moment, certain articles,

the taste of which is offensive. Diseased conditions of the stomach and other parts, also make it necessary to vary from the usual mode of application.

The stomach is the great recepticle for the majority of remedies intended to affect the animal economy by their general influence. Endosmotic exudation through the tissues connected with the circulation of the stomach, and ordinary capillary or lacteal absorption in the upper portions of the intestines, together with the extensive nervous distribution to these parts, make the administration of remedies by the stomach more effectual in bringing about their speedy action than by application to other portions of the body. Medicines given in the stomach are usually administered in the form of *mixtures*, *electuaries*, *pills* or *solutions*.

The Skin, though an extensive surface, and sufficiently supplied with absorbents to take up and convey substances into the general circulation when applied to it, is most commonly selected for the application of local remedies only. Plasters, ointments, liniments, &c., are intended to be applied to this part for their effect upon the skin itself. When medicines are applied to the surface with the view of being absorbed, they are made more effectual by removing the cuticle. This is termed the endermic mode of application.

To *the Rectum* medicines are applied for their general as well as local effect. Anodynes, and other varieties of medicines, intended to impress the general system, are often advantageously given in this way, where it is not practicable to administer by the stomach. Catharsis is more speedily and certainly induced by enemata than by swallowing purgative medicines, and where the evacuation of the lower bowel alone is desirable, will generally be found preferable. Medicines applied to this part in the solid form are called suppositories, and in the fluid form *enemas*, *injections*, or *lavements*.

To the *Eyes* remedies are applied, but perhaps always for their local effect in diseases of the organ itself. These are called *Collyria*. *Errhines* are medicines applied to the schneiderian membrane, and for the most part intended to act only locally.

Collutatories are substances applied to the mouth for their local effect upon it.

The *Urethra* and *Vagina* are the subjects of disease, and require the application of remedies. These are used in the form of fluids, generally, by injection.

WEIGHTS AND MEASURES.

The Troy pound and its divisions, commonly called "Apothecaries' weight," are those by which drugs are weighd in making preparations and compounds for the use of the physician. This pound is divided into *twelve* ounces of eight drachms each. The drachm into three scruples of twenty grains each. For the measure of liquids, the gallon of eight pints; each pint containing sixteen fluid ounces; each ounce eigtht fluid drachms; each fluid drachm sixty minims. For these measures we have usually household utensils which, approximating so closely, we may use for the true measures. An ordinary glass tumbler contains about half a pint; a tea cup, four fluid-ounces; a wine glass, two fluid ounces; a table spoon, half a fluid-ounce, and a tea spoon, about a fluidrachm; a drop of ordinary fluid approximates the minim. For extemporaneous preparations, which are made often away from where exact measures can be obtained, these approximate measures will generally be found sufficiently accurate.

MODIFICATION OF DOSES FOR CHILDREN.

In all instances where the dose of an article of medicine is given without any mention of the age, it must be understood for adults, and in order to graduate the dose to suit different ages of children, the following simple rule will be found suffi-

ciently accurate: Let the age of the child be set down as the numerator; the age of the child added to 12 for the denominator, and the fraction of an adult dose will be formed proper for the given age of the child. For example: if the child be 3 years old, the fraction will stand 3-15, which, when reduced, is 1-5; so, that it will be perceived, a child of 3 years old requires one-fifth of the quantity proper for an adult. This rule is applicable to any age not exceeding ten or twelve years, after which the dose approaches so closely that for an adult, no difficulty can arise in determining the proper quantity.

CLASSIFICATION OF REMEDIES.

Upon the arrangement and classification of studies in any department of learning, depend the facility with which they are learned, and the permanence of their impression upon the mind. In the following classification of remedial agents, these advantages to the student have been sought.

Remedies affecting the organs by a specific influence are placed in groups or divisions, according to the particular organ or system of organs which they impress. Seven of these divisions appear in our arrangement, and one which includes those remedies acting locally, making eight grand divisions of remedial agents. Each of these divisions are subdivided into classes, formed according to the character or kind of action they produce.

I. *Remedies that affect the Alimentary Canal or its contents.*

1. Emetics.
2. Cathartics.
3. Anthelmintics.
4. Antacids.
5. Tonics.
5. Aromatics.

II. *Remedies that affect the Circulatory System.*

1. Arterial Stimulants.
2. Arterial Sedatives.

III. *Remedies that affect the Respiratory Organs.*

1. Expectorants.
2. Inhalants.

IV. *Remedies that affect the Nervous System.*

1. Cerebral Stimulants.
2. Cerebral Sedatives.
3. Excito-motor Stimulants or Spasmodics.
4. Nervous Stimulants.
5. Nervous Tonics.

V. *Remedies that affect the Secernent System.*

1. Diuretics.
2. Sialagogues and Chologogues.
3. Aphrodisiacs.
4. Anaphrodisiacs.

VI. *Remedies that affect the Uterine System.*

1. Emmenagogues.
2. Abortiva.

VII. *Remedies that affect the organs of Assimilation.*

1. Alteratives or Eutrophics.

VIII. *Remedies that act locally and affect all the tissues to which they are applied.*

1. Astringents.
2. Rubefacients.
3. Epispastics.
4. Escharotics.
5. Demulcents.
6. Emolients.

I. DIVISION.

Remedies that affect the Alimentary Canal or its contents.

CLASS I.

EMETICS.

These are substances which, when taken into the system, produce vomiting, aside from the stimulus of bulk, or the influence of odor or taste.

First evidence of their effect, that of nausea; mechanism of vomiting; contraction of the stomach—one of the forces concerned in emesis.

Objects of their use are, 1st. Evacuation of the contents; 2d. General relaxation; 3d. The mechanical influence upon internal organs in the act of vomiting—circumstances requiring each of these effects.

Diseases in which they are generally applicable.

IPECAC—IPECACUANHA.

Root of *Cephaëlis Ipecacuanha*, a small shrub found in several provinces of South America, particularly Brazil.

General character of the root; relative activity of the cortical and ligneous portions; sensible properties; *Emetin*, the active principle of the root. Given in the form of powder, mixed with water in the *dose* of 20 grains. Usually given in smaller quantities and repeated every thirty minutes till its effects are produced.

Wine of Ipecac—Vinum Ipecacuanhæ, is an officinal preparation, given in the dose of f℥i for its emetic effect—suitable preparation for the administration of an emetic to children.

Syrup of Ipecac—Syrupus Ipecacuanhæ.—This is also a form in which Ipecac may be very readily administered to children. As an emetic, in the dose of f℥i, it will produce the full effects of the remedy.

Other varieties of the Ipecacuanha have been brought to the notice of the profession, and although greatly inferior to the Cephaëlis Ipecacuanha, or true Ipecac, have been used for the same purposes.

True Ipecac is a safe and efficient emetic, producing its effects upon the stomach in thirty minutes.

INDIAN TOBACCO—LOBELIA.

The *leaves* and *seeds* of *Lobelia Inflata*, an herbaceous indigenous plant, cultivated and growing wild in several States of the Union.

Character of the plant—appearance of the seeds and leaves when prepared for market.

Rarely given in substance or infusion.

Tincture of Lobelia—Tinctura Lobeliæ, is the form in which it is usually given.

The usual time required to produce the specific effect upon the stomach is half an hour, and in order to avoid the poisonous effect, smaller quantities than the full dose should be given and repeated at suitable intervals till vomiting occurs.

Symptoms of the poisonous effect upon the brain and alimentary canal.

Lobelia, a very active narcotico-irritant emetic, applicable to cases requiring powerful action.

More useful as a nauseant, sedative, and narcotic.

The dose f℥ss, as an emetic.

INDIAN PHYSIC—GILLENIA.

The root of *Gillenia trifoliata*,—an indigenious herbaceous, perennial plant, sometimes called American Ipecacuanha—found mostly in the Western States.

Character as an emetic.

Therapeutical applications—dose 20 grains.

BLOODROOT SANGUINARIA.

The rhizoma of *Sanguinaria Canadensis*, an indigenous herb also possessing emetic properties. General character of the root. Given in substance, in the form of a pill, in the dose of 15 grains; of the tincture, which is an officinal preparation, f℥ss.

Rarely used as an emetic.

TOBACCO—TABICUM.

Leaves of *Nicotiana Tabacum*. This is also a powerful emetic, producing alarming prostration. Not used as an emetic. Dose, to produce full emesis, 5 or 6 grains.

The use of tobacco as a remedial agent is principally confined to those conditions requiring great general relaxation, and is then used as an enema, in the form of infusion made with a drachm of tobacco to the pint of water. One-fourth to one-half of this to be thrown into the rectum—care required in its use.

SQUILL—SCILLA.

Rhizoma or bulb of *Scilla Maritima*, a perennial plant found on the Mediterranean coast. Bulb sliced in order to facilitate the drying, and in this form found in commerce. Obtained also in the shops in the form of powder, *Pulvis Scillæ*. Readily absorbs moisture when exposed to the atmosphere, and deteriorates if not kept in well stopped bottles. Not given as an emetic, unless to children. Will produce vomiting however in the dose of 10 grains.

Syrup of Squills—Syrrupus Scillæ is sometimes given for its emetic effects in bronchial affections of children in the *dose* of f℥i.

Compound Syrup of Squills—Syrrupus Scillæ Compositus.—This preparation of Squills, containing antimony and other

ingredients is a convenient and useful preparation. As an emetic, it is given to children in the dose of f℥i.

MUSTARD--SINAPIS.

Seeds of Sinapis Alba and Sinapis Niger.—Not usually relied upon as an emetic independently, but in great insensibility of the stomach, is useful in restoring the energy of the organ, requisite to the proper action of emetics. Best given immediately preceding or in conjunction with emetics, in the dose of ℥i, mixed with water or vinegar.

TARTAR EMETIC--ANTIMONII ET POTASSÆ TARTRAS—TARTRATE OF ANTIMONY AND POTASSA.

Mode of preparation; chemical constituents; preferable in crystalline form.

Color; odor; taste; solubility; incompatibility.

Though violent and even dangerous in its action when given in large doses, *tartarized antimony* is one of the best emetics where a decided impression upon the system is desirable. A powerful irritant; symptoms of its poisonous effect; how counteracted; mode of administration; therapeutical applications—dose 2 grains. Best given in half a grain every thirty minutes till its effects are exhibited.

Tolerant effect induced by large doses repeated till emesis ceases, and always combined with mucilage to protect the mucous surface. Tolerance not always obtained.

WHITE VITRIOL--ZINCI SULPHAS—SULPHATE OF ZINC.

Chemical nature and composition; color and taste; solubility. More speedy in its action than most other emetics, requiring only 15 minutes to produce its emetic effect. Therapeutical applications. Dose 10 grains dissolved in water.

BLUE VITRIOL—CUPRI SULPHAS—SULPHATE OF COPPER.

Chemical constituents; color; taste; relations to water and

alcohol; like the foregoing article produces vomiting in a short time, and but for the severity of its action would be equally desirable as an emetic where speedy action is called for. Given in solution in water in the dose of 3 or 4 grains. Therapeutical applications.

CLASS II.

CATHARTICS.

Cathartics are those remedies which evacuate the contents of the bowels. Some articles do so by increasing the peristaltic movement of the intestines, by their specific influence in that way, others act only as irritants to the mucous surface, thereby giving the stimulus to action and tendency to effusion which promotes the evacuation. Such medicines act specifically on the bowels, not only in preference to other organs, but each article of the class generally on some particular portion of the canal—the various modes of accounting for this specific or elective nature of cathartics considered.

Divisions of cathartics according to the degree of their action. Divisions into vegetable and mineral discarded to give place to those more practical. Abuse of cathartics. Therapeutical applications. Their modus operandi in the cure of various disorders in which they are useful. The degree of action to be expected from each of the practical divisions into aperients, purgatives and drastics.

APERIENTS.

MANNA.

Concrite juice of *Ornus Europæa*, or flowering ash; a tree of moderate height, growing in Sicily and other Eastern countries. Juice obtained by longitudinal incisions in the trunk, and suffered to harden in the air. Exudes spontaneously, but not so abundantly without incisions—varies in quality according to the manner of collecting it, and the season of the year it is procured. Three varieties, *Flake*, *Common* and *Fat Man-*

na. Flake, or, as it is sometimes called *Manna Cannulatta*, is the purest and best of the three varieties. This is obtained in mid-summer, and from the upper incisions in the tree. Later in the season, inferior varieties are procured. Characteristics of the three varieties, color, taste, therapeutical applications, mode of administering. Dose, 1 or 2 ounces, generally given in combination with other cathartics, the taste of which it is desirable to conceal—very little used.

FRUITS.

Figs, Ficus; Tamarinds, Tamarindus; Prunes, Prunum; Raisins, and dried Apples and Peaches—particular conditions in which these are applicable as laxative diet.

Bran, Charcoal and other Michamed aperients considered, Therapeutical application.

Olive oil and Linseed oil, sometimes suitable aperients for children, in the dose of a fluidrachm to infants.

MAGNESIA.

By subjecting the carbonate of Magnesia to a sufficient heat, the water and carbonic acid is expelled, and pure magnesia, or, as it is sometimes called, *calcined Magnesia*, remains uncombined.

Sensible properties—character as a cathartic—mode of administration, and therapeutical applications. Dose as an aperint, 30 grains.

Solution of Citrate of Magnesia—Liquor Magnesia Citratis, prepared with carbonate of magnesia and citric acid, is, when prepared, a solution of citrate of magnesia in water, with an access of acid and free carbonic acid gas—one of the best laxatives—cooling and gentle in its action. It is a desirable article, on account of the facility with which it can be taken, and the pleasant effect upon the stomach from the excess of citric acid and carbonic acid gas—admissible in all cases where laxatives are required. Dose, f℥iv.

Carbonate of Magnesia, though inferior to the above preparations of magnesia, is an effectual aperient under favorable circumstances. Preparation and sensible properties. In order to its cathartic action, it is necessary generally, that free acid be in the stomach. Acid drinks promote its action, as well as that of calcined magnesia. Dose, 1 drachm.

Seidlitz Powders, composed of Rochelle Salts, (*Tartrate of Potassa and Soda*) and bicarbonate of Soda, in one paper, and tartaric acid in the other. The acid in excess makes it less unpleasant, without interfering with its laxative effect. Manner of using them. *Conditions in* which they are desirable,

Article which have aperient or purgative effect according to the quantity given.

RHUBARB—RHEUM.

Root of Rheum Palmatum—Rheum Compactum, and *Rheum undulatum*, herbaceous perenniel plants growing spontaneously in Asia, and cultivated in Europe. Characters common to all—mature about the age of six years—met with in commerce in the form of transverse slices.

Varieties of Rhuburb.—These take their names from the countries whence they are obtained, and are *Russian Rhubarb*, *Chinese Rhubarb*, *European Rhubarb*; distinguishing features of each considered; peculiarities of its action, and thereapeutical application; given in substance in the form of pill or powder, in the dose of 20 grains for the purgative effect, and 6 or 8 grains as a laxative.

Tincture of Rhubarb—Tinctura Rhei.—Although this is a convient way of using Rhubarb, and one that in some instances is desirable, yet the tincture uncombined with other medicines, is rarely given; conditions in which this form is applicable. The dose as a purgative is f℥i; as a laxative, f℥iii.

Syrup of Rhubarb—Syrupus Rhei.—This and the succeeding, are the best preparations of Rhubarb, when given as an ape-

rient. The sugar not only conceals the unpleasant taste of the Rhubarb in a great degree, but adds to its cathartic effect. The mildness of the action of Rhubarb, and the facility with which this preparation may be given, make it a very appropriate article for children.

The dose as a laxative for adults, is f℥i, rarely given for greater effect.

Aromatic Syrup of Rhubarb—Syrupus Rhei Aromaticus.—This preparation is about the same as the preceding, except the addition of the aromatic—cases in which the aromatic syrup is peculiarly applicable. Dose the same as the simple syrup.

ALOES—ALOE.

This is the inspissated juice of the leaves of the three species of the plant; *Aloe Vulgaris; Aloe Spicata*, and *Aloe Socotrina;* distinguishing characteristics of the three species; mode of obtaining and inspissating the juice.

Four varieties of Aloes in commerce; the Hepatic, Cape, Barbadoes and Socotrine. Distinguishing characteristics of these several varieties; Peculiarity of its action *as regards its tendency to excite the lower bowels;* Therapeutical applications; the conditions in which it is contra-indicated. Given in substance in the dose of 20 grains, as a purgative, and 5 or 6 grains when only a laxative effect is desired. It is generally given in pill, and rarely uncombined with other cathartic or tonic medicines; Tincture not often used on account of the unpleasant bitterness; Extract has no advantages over the Aloes itself.

EXTRACT OF BUTTERNUT—EXTRACTUM JUGLANDIS.

Extract of the bark of the root of *Juglans Cinerea*, an indigenous tree, found in many parts of the Union; sensible properties of the bark; character as a cathartic; therapeutical application. Dose, 20 grains as a purgative, and 10 grains for its laxative effect.

PREPARATIONS OF MERCURY.

BLUE PILLS—PILLULÆ HYDRGYRI.

In this preparation the particles of mercury are separated to the greatest possible degree of divisibility, by triturating with Conserve of roses, and, it is thought, exist in a state of oxydation; sensible properties; character of its action; therapeutical applications. Dose, as an aperient, 10 grains.

CALOMEL—HYDRARGYRI CHLORIDUM MITE.

Form of preparation; chemical constituents; insoluble in water or alcohol; incompatibility; character as a cathartic; Therapeutical applications; mode of administering. Dose, as a purgative, 20 grains; as a laxative, 10 grains.

SULPHUR.

Manner of obtaining sulphur; process of purifying to obtain flowers of sulphur--the form for internal use; sensible properties; solubility; character as a cathartic; therapeutical applications; mode of administering. Dose, 1 drachm.

PURGATIVES.

CASTOR OIL—OLEUM RICINI.

Expressed oil of the seeds of *Ricinus Communis* or *Palma Cristi*, an annual plant, cultivated in the United States, and in the wild state attains the magnitude of a tree in the East Indies and Africa.

Character of the plant; appearance of the seeds; best mode of obtaining the oil from them; color, odor and taste; character of its action; best mode of administration; therapeutical applications. Dose, f℥i

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EPSOM SALTS—MAGNESIÆ SULPHAS--SULPHATE OF MAGNESIA.

Chemical constituents; mode of preparation on a large scale; character as a cathartic; therapeutical application. Dose, ℥i, dissolved in water.

GLAUBERS SALTS--SODÆ SULPHAS--SULPHATE OF SODA, Is possessed of about the same properties as sulphate of magnesia, but from the unpleasant taste, or some other cause, it is rarely used. The dose is the same as Epsom salts, and may be given for the same purposes.

SENNA.

Leaves of *Cassia Obovita*, *Cassia elongata*, and *Cassia Acutifolia*—small shrubs growing in Africa. These three species of the plant afford the varieties of commercial Senna, named according to their commercial history, &c., viz.: Alexandria, Tripoli and India. Distinguishing characteristics of these varieties of Senna; variety preferred, and the species from which it is derived; active ingredient, a peculiar substance called *Cathartin*; peculiarity as a cathartic; rarely given in substance; the infusion made in the proportion of an *ounce* to the pint of boiling water, conbining bruised ginger, coriander seed or some other aromatic to prevent griping; combination of some saline purgative, said also to prevent the pain in its action. Dose of the infusion, f℥iv. These are compound officinal preparations of Senna. The importance of these.

AMERICAN SENNA—CASSIA MARILANDICA.

Leaves of *Cassia Marilandica*, an indigenous herbaceous plant, growing wild in most parts of the United States; time of gathering the leaves; manner of drying.

Similar in its effects to trans-Atlantic Senna, and subject to the same preparations, but requires to be given in doses one-third larger.

DRASTIC CATHARTICS.

JALAP—JALAPA.

The root of *Ipomœa Jalapa*, a native of Mexico, found particularly in the State of Vera Cruz, near the City of Xalapa,

from which the name was derived. Appearance of the root, and manner of drying; sold by apothecaries in the pulverized form, in which it is used entirely when given in substance uncombined with other articles; color, odor and taste of the powder; character of its cathartic action; therapeutical application; dose of the powdered Jalap, given in the form of mixture with water, in the dose of 15 grains; combinations with other cathartics; effects of over dose; there is an officinal tincture and extract; the former is but little used, and the latter has no particular advantages over the Jalap in substance, as the dose is about the same; Jalap, in full doses, produces watery evacuations with griping.

MAY-APPLE—PODOPHYLLUM.

Root of *Podophyllum peltatum*, an indigenous herbaceous plant, found in all parts of the United States, growing on rich soil in shady and low places; character of the plant; size and shape of the roots; time of collecting; preparations, mode of administration and dose the same as Jalap; action similar to that of the last named article, except a greater tendency to produce nausea and general prostration.

GAMBOGE—GAMBOGIA.

Inspissated juice of a tree whose species are not certainly known to botanists. Three species of gambogioides have been suggested by different writers as the probable source of the gamboge of commerce, viz.: *Stalagmitis*, *Hebradendron* and *Garcinia*—collected in Spain and Cochin-China. Manner of collecting; appearances of the masses; color, oder, taste; character as a cathartic; remedial application; mode of administration; generally combined with other articles. Dose, 5 grains.

Apt to induce more or less nausea.

COLOCYNTH—COLOCYNTHIS.

Pulp of the fruit of *Cucumis Colocynthis*, or *bitter cucumber*,—a native of Turkey, and is found also in Asia and Africa. It is an annual plant, and resembles very much the watermelon. Appearance of the fruit; taste and general character of the pulp; given in substance and extract; generally combined with other articles; dose of the pulp, 5 grains; The simple extract seldom used.

Colocynth, an ingredient in most of the compound cathartics; in large doses, produces violent purgation with watery evacuations and pain.

SCAMMONY—SCAMMONIUM.

Inspissated juice of the root of *Convolvulus Scammonia*, a plant found native in Syria and certain islands of the Archipelago, having perennial root and several twining stems extending on the ground or surrounding objects to the distance of fifteen or twenty feet. Size of the root; manner of collecting and inspissating the juice. Shape of the masses of Scammony as found in commerce; color, taste and consistence; adulterations; character as a cathartic; Theraputical application dose, 5 grains. Factitious scammony; Violent cathartic in over doses.

ELATERIUM.

Pure Elaterium is the sediment obtained from the juice of the fruit of *Momordica Elaterium*—place of growth—character of the fruit; modes of obtaining elaterium; that obtained by evaporating the juice of inferior quality; general appearance of pure, *elaterium*,—active ingredient called *elaterin*. Dose of common or impure elaterium $\frac{1}{8}$ of a grain; of Clutterbucks, 1-12 of a grain, and of elaterin 1-16 of a grain; danger of over dose; character as a cathartic. Therapeuti-

cal application; rarely given uncombined with other cathartics, the activity of which it increases while its own violence is moderated.

CROTON OIL—OLEUM TIGLII.

Expressed oil of the seeds of *Croton Tiglium*, a small tree native of Hindostan and Ceylon. Size and shape of the seeds; other parts of the plant said to be purgative; color, odor and taste of the oil; character as a cathartic; effects upon the mouth and other parts of the alimentary mucous membrane when coming in contact; mode of administration by pill or suspended in mucilage, to prevent irritation to these parts; Therapeutical application. Dose, 2 drops.

The dose of this as well as all the drastic cathartics, should be divided, and given at proper intervals, so that undue effect may not be produced. There are some persons who are unusually impressed with medicine; and to such the full portion of a violent remedy might prove injurious. The full effect desired may be obtained in this way without risk to the patient, and generally in due time.

Combinations of the milder cathartics with drastics also have a beneficial influence in lessening the violence of the latter, while the effect is still greater than could be produced by the milder article. For example, the union of a drastic with a suitable proportion of some convenient laxative, will produce action in degree similar to ordinary purgatives.

ENEMAS—ENEMATA.

By Enema is meant the medicine introduced into the rectum in the fluid form. It is not alone to produce evacuation from the bowels that they are used; but as this is one of the main objects of their administration, they may be properly considered under the head of cathartics.

This important mode of administering medicine is too often

dispensed with, through fear of offending the false delicacy of the patient, or of those who receive the directions of the physician. As an Adjuvant in the operation of cathartic medicines, and sometimes as the only reliance to excite and evacuate the intestines, substance used in this way, to promote evacuations, should be dissolved or suspended in about a pint of water. When for other purposes, and it is desirable that the remedy be retained, the quantity of the menstruum should be much smaller.

Solution of Soap, Castor-oil, solution of *common salt* and *molasses* are the articles usually prefered as cathartic injections.

About three times the quantity required by the stomach, is necessary to produce sufficient effect when thrown into the rectum.

SUPPOSITORIES.

Substances introduced into the rectum in the solid form are termed suppositories. They are used for their cathartic effect, and for other purposes.

ANTHELMINTICS.

Anthelmintics are those means applied for the destruction or removal, or both, of worms formed in the alimentary canal. Some of these produce the death of the entozoa, but have no agency in their removal; others combine both these effects.

Those cathartic remedies which remove them in the living state may be called Anthelmintics, according to the above definition, and might be extended still farther, so as to include those means necessary to prevent their generation in the *primæ viæ*. Their destruction, expulsion and prevention are the objects of Anthelmintics.

There are several varieties of worms that are found in the human subject. The three principle forms are the Lumbricoides, a large worm, measuring in some instances eight or

ten inches in length, which generally inhabit the small intestines; the Ascarades, a small worm found in the rectum and other lower bowels, and sometimes it is said even in the vagina; and the tenia or tape worm. The last named variety sometimes attains enormous length. It is stated by good authority, that this worm has been seen measuring over a hundred feet. The most peculiar feature in their formation, however, is their articulated structure, and the faculty they possess of maintaining an independent existence after being disarticulated.

Modus operandi of those remedies which destroy worms while yet in the canal, is a specific influence upon the parisite itself; Mechanical Anthelmintics; doubt as to the existence of chemical anthelmintics; removal of worms from the bowels necessary though they may be dead; best to combine cathartic medicine with the vermifuge, if the latter does not possess laxative properties; difficult to remove living worms by cathartics; reasons given; unhealthy character of the secretions of the bowels disposes to the generation of entozoa; manner of correcting this.

The *symptoms* of worms are numerous, but none of them absolutely certain; prominent abdomen, grinding of the teeth and starting during sleep, picking at the nose, and irregular appetite are some of the most usual.

PINK-ROOT--SPIGELIA.

Root of *Spigelia Marilandica*, an indigenous herbaceous plant, found in most of the Southern and Western States, noted for the beauty of its scarlet-red flowers; description of the plant; mode of collecting and general appearance of the roots; not poisonous, but sometimes collected with a very small yellowish root which produces unpleasant effects; modus operandi in the destruction of worms. Given in substance in the form of powder. Dose 20 grains. In infusion, made with one ounce

and a half of the root, to a pint of boiling water, in the dose of four fluidounces, sweetened with sugar or molases. A fluid extract is sometimes used, and, for children to whom the infusion cannot be readily given, is a very convenient preparation; for a child of a year old, a tea spoon-ful is the proper dose, repeated everey three or four hours.

WORM SEED—CHENOPODIUM.

Seeds of *Chenopodium Anthelminticum*, or Jerusalem-oak, an indigenous, herbaceous perenniel plant, found in abundance in all parts of the union; description of the plant; size, shape, odor and taste of the seeds. The vermifuge property resides in a volatile oil which pervades the whole plant. Mode of action as a vermifuge and its effects upon the system. Given in substance in the dose of 20 grains.

Oil of Wormseed—Oleum Chenopodi; mode of obtaining it from the seed; sensible properties. Dose 5 drops, rubbed with sugar and suspended in water.

PRIDE OF CHINA—AZEDARACH.

Bark of the root of *Melia Azedarach* or *China tree.* Nativity; cultivated in southern portions of United States for ornament and shade; effects upon the system; effects upon the worms; used in decoction, made by ʒii to Oi of water boiled to one-half. Dose, fʒss.

POMEGRANATE ROOT.

Bark of the root of *Punica granatum*, or Pomegranate; cultivated in this country as an ornament and for the fruit; character as a vermifuge; used in the form of decoction made by ʒi to the pint of water boiled down one-half. Dose, fʒi, repeated occasionally.

OIL OF TURPENTINE—OLEUM TEREBINTHINA.

Volatile oil distilled from the turpentine of *Pinus Palustris* and *Pinus Sylvestris*: a commodity for consumption and exportation, manufactured in the United States; in consistence, unlike most other oils; called *Spirits of Turpentine;* a valuable vermifuge; given in the form of emulsion with Gum Arabic, or rubbed up with sugar and suspended in water; effects upon the system in large doses. Dose ʒi repeated every four hours, and followed by castor oil.

CALOMEL.

The preparation &c., being noticed under the head of Cathartics, it only is necessary here to speak of it in reference to its properties as an authetmentic. Action in the distruction of worms supposed to be chemical—such action doubted—effects upon worms thought to be more speedy than some other articles of the class that are more certain in the distruction of worms; applicable in convulsions, and under other circumstances in which articles requiring larger bulk cannot readily be taken. Dose 5 grs. followed in four hours with Castor-oil.

MECHANICAL ANTHELMINTICS.

COWHAGE—MUCUNUS.

Bristles from the pods of *mucunus pruriens*, a climbing plant found in the West Indies—character of the bristles—shape and size of the pod; effect upon the worms; for administration the bristles are scraped into Molasses till it becomes about the consistence of honey. Dose fʒss repeated in a few hours.

TIN—STANNUM.

Given in the form of filings or powder of tin, *Pulvis stanni*, mixed with syrup; manner of destroying worms. Dose ʒi

PUMPKIN SEEDS.

Seed of *Cucurbita Pepo*, or Pumpkin. The vermifuge properties of pumpkin seeds has been known for a considerable length of time, but is not even now extensively used for the destruction of worms. Of their value there is the highest evidence, and it is remarkable that an article so easily procured, and one in the use of which there is no risk of unpleasant effect upon the patient, should be so seldom prescribed by physicians. Its claims to position in the materia medica as an anthelmintic, particularly for tenia, is equal, if not superior to any article belonging to this class of remedies.

Their anthelmintic virtue resides in an oil which may be obtained by expression.

The Seeds given in substance in the form of paste or emulsion, by depriving them of their shell or covering, and rubbing them with water or sugar. Dose half an ounce—of the expressed oil f℥ss.

CLASS III.

ANTACIDS.

There are substances, which, by a chemical union with acid generated in the canal, neutralize it. Alkalis, alkaline earths and their carbonates, are the articles employed for this purpose. Although the articles generally used in this way are mild unirritating substances, yet some caution is necessary in their administration. Such articles are taken daily, and almost without measure by some females, who are the subjects of acid stomach, until there is an accumulation of uncombined earthy substances, having no cathartic effect in themselves when introduced in quantities beyond what is sufficient to neutralize the existing acid. In this way the bowels become impacted by articles having a tendency to absorb the fluid exhalations, and form hardened masses which obstruct the ca-

nal and produce disagreeable, and sometimes exceedingly injurious, consequences.

Antacids are often called for in indigestion, and incidentally in many acute diseases, particularly dysentery and summer complaint in children. In the bowel affections both of children and adults a peculiar disposition to the generation of acid exists, which it is necessary continually to counteract by alkalis. In addition to the benefit derived from them in this way, the earthy preparations, particularly, act as absorbents of the continual watery exhalation, so that the excess, which in health, as above stated proves injurious by producing too much dryness and hardning of the fæces, is decidedly advantageous in diarrhœa. They are serviceable where there is excess of acid in the urine.

LIME—CALX.

Lime prepared by calcination, found combined usually with carbonic acid, as in chalk, marble, limestone, or other carbonates. The burning dissipates the acid, and the result is *quicklime, Calx ust.* Sparingly soluble in water; *solution, liquor, calcis* a convenient form for internal use; mode of preperation; dose of the solution, three fluid ounces several times a day.

Prepared chalk; Creta Preparata is only finely pulverized carbonate of lime found in the form of chalk. Process of preparation; only form in which chalk is used in medicine; one of the best absorbent antacides in diarrhœa; dose *one Scruple.*

Soda and *Patassa* are used as antacids in the form of carbonates; these are the most convenient and efficient alkaline preparations for cases of simple acidity of the stomach, where the bowels are neither preternaturally laxative nor costive.—Both are soluble in water. May be taken readily and without materially altering the condition of the bowels. In some bilious disturbances, such as jaundice, a decided tendency to the generation of acid exist, producing the most unpleasant sen-

sations and general nervous depression, in which those carbonates, particularly, afford prompt relief. Each may be given in the dose of 15 grains dissolved in an ounce or two of water and repeated *pro re nata.*

MAGNESIA.

Magnesia, which has already been described under the head of cathartics, may be used more beneficially, in certain diseases, in which acidity is a prominent difficulty, than the alkaline carbonates above named. Occasionally portions of this earthy substance become adherent to the surface of the bowels, or collect in hardened masses so as to interfere with the normal functions of the organs. Under ordinary circumstances, however, these effects need not be apprehended. Magnesia may be eaten dry, or stirred with water, in the dose of ½ a drachm.

Carbonate of Magnesia—Magnesiæ Carbonas is used with similar effects. The only difference is the disposition to flatulence, from the extrication of carbonic acid gas from the union of the acid met with in the stomach, with the magnesia of the carbonate, setting free the carbonic acid in the form of gas. Dose, 2 drachms.

CLASS IV.

TONICS.

According to the generally received definition of tonics, they are medicines which increase the tone and strength of the body. Because of this ultimate result, the opinion is entertained that there is some specific influence exerted over the organs immediately concerned in locomotion, &c. Indeed, some have gone so far as to assert their direct effect upon the muscular fiber. In order to form correct views in regard to the modus operandi of this, as well as any other class of arti-

cles, it is necessary to observe the first of the therapeutical changes produced by them, and also any subsequent effect, or result of the first. To pursue this course of investigation is to overthrow the opinion of specific tonic powers over the general muscular system; for we find the first effect in the improvement of digestion. That there may be no misunderstanding in regard to the particular kind of tonics referred to in the above remarks, we confine ourselves in this connection to tonics proper—*to vegetable bitter tonics.* This is the variety particularly which is said to produce an independent and specific effect upon the muscular fiber.

There are two immediate causes of muscular inactivity or debility, enervation and a want of nutrition. When from the latter cause, the process of restoring strength is necessarily tardy. It generally depends on deficient quantity of food, indigestion or a want of proper assimilation, and it is only when the second of these causese exist, that tonics of the variety under consideration, can be used advantageously. Indeed, not always then; for indigestion is the result of various kinds of disturbances of the stomach and other organs concerned in digestion; some of which would be no more under the control of tonics than would any acute inflammatory disease. There is some uncertainty respecting the precise condition of the stomach in which tonics are applicable, whether in merely muscular debility, deficient secretion of the gastric fluid, or both. One thing, however, is evident, they are useful in that inactive condition of the organ following acute diseases, and sometimes appearing as a primary disturbance, unaccompanied with inflammatory symptoms. And strange as it may seem to those who may contend for the direct tonic effect of these remedies upon the muscular fiber, debility from any other cause than that of gastric inactivity such as above named, cannot be influenced by tonics. In proof of this position, noth-

ing more is necessary than to note the effects of their use in debility from inanition, tabes mesentericas, typhoid fever, &c., and compare them with those following their use, when inactivity of the stomach is the cause of general debility. Food imperfectly digested in the stomach, does not afford the proper material for the next process in digestion. In other words, if chymification is imperfect, chylification must necessarily be so, and the result is that, although the proper quantity and quality of food may be taken, the ultimate object—the nourishment of the various tissues—fails to be accomplished, and the material of which chyle should be prepared, passes through the canal as effete matters. Tonics, then, in restoring this last function of the stomach, become indirect agents in restoring the lost energies of the muscular and other tissues of the body.

Tonics are of three kinds, named according to the mode of their action, viz: Vital, Mechanical, and Chemical. The last of these may seem to be improperly placed under the head of medicines whose action is directed mainly to the alimentary canal, but as their ultimate effects are so much in unison with those acting directly on the canal, and as some of the chemical tonics have also an immediate action upon the stomach, it is thought best to arrange all those remedies having tonic effects in the same class.

The preparations of iron it is thought afford an ingredient calculated to increase the number of red corpuscles, not by any vital agency, but by being absorbed and forming a chemical combination with ingredients in the blood. In addition to this, they are thought also to produce a beneficial effect upon the stomach itself. This being the main article of this variety of tonics, and possessing, as has been said, this two-fold action, all may be appropriately considered under the same general head.

Mechanical tonics are those substances, which, when introduced into the stomach communicate excitement in that viscus by their mechanical irritation to the mucous surface, and thereby impart activity to the whole organ. In this variety of tonics may be included the system of *punching*, which, a few years ago, was practiced empirically to the great injury of those who were the unfortunate subjects of the barbarous process. Under this dispeptic treatment, the quiet of the stomach was disturbed by slight blows or punches in the epigastrum with the fist, so as to excite it to action, and although careful manipulation, so as generally to disturb the organ by external pressure, may excite contraction and prove serviceable, yet to apply even this to every variety of indigestion would be exceedingly injurious.

Exercise owes its advantages in debility of the digestive organs, in part to the mechanical disturbance of the Stomach and liver communicated in leaping, walking, riding, &c., by which they are excited to the performance of their functions.

A tonic or invigorating influence is exercised over the muscular system generally, aside from the improvement of digestion, by these means. It is demonstrable that the active exercise of a muscle causes an increase in size and strength. This is seen in the extraordinary muscular developement in the arm of the blacksmith, in whom the muscles are constantly in exercise. Again, in those whose occupation confines them to sedentary habits, the muscles are soft, small and inactive, compared with those living more actively. We shall then consider *Exercise* as forming the first link in the chain of those means called tonic.

EXERCISE.

Conditions in which exercise is serviceable. Walking and horse-back riding preferable generally; most advantageous

when the stomach is empty. Morning and evening before meals should be preferred. Its effects upon the stomach, improving digestion and thereby affording the means of giving strength to the whole body, and the healthy influence immediately produced upon the muscles engaged in the exercise.—*Charcoal*; *Carbo Ligni*, form of preparation, Therapeutical application; combination with zingiber, *Unbolted Flour*, sometimes used as diet; sometimes the bran separately used as tonic aperient; mode of action. These are called mechanical tonics.

FOOD—CIBUS.

Food, the great replenishing agent, the more perfect preparation of which is the object of most tonics proper, is that which gives vigor to the body. It is indeed the great tonic and supporter of the whole organism, and those medicinal agents denominated tonics, and alteratives only correct the darangement of these organs, whose business it is to prepare it for assimilation into the real tissues of the body, by which the natural and accidental waste is replaced.

Solid and fluid diet; solid in meats, bread, cake, &c., &c., Fluid in soups, teas, coffee, chocolate, milk, &c.—animal and vegetable.

The most important distinctions, those of irritating and unirritating, rich and meager.

Diet in health; importance of oily and other rich diet in persons of a stromous diathesis.

Diet in disease; importance of unirritating and fluid diet in affections of the mucous surface of the alimentary canal; meager diet in inflammatory diseases; nourishing and digestible diet in convalescence from acute diseases, and during the progress of low forms of fever and other malignant diseases; importance of food in such diseases regularly, whether the patient's appetite demands it or not; effects of abstinence from food in health and in disease.

COLUMBO--COLUMBA.

Root of *Cocculus Palmatus*, a climbing plant, with perenniel root consisting of several descending tubes one or two inches in diameter; native of the South-Eastern coast of Africa; root dug in March; size, shape and appearance of the dried root; active ingredient; a variety of Cocculus, called Columbo, found in the Northern portion of Georgia, resembling very much the true Cocculus Palmatus in its botanical features as well as its medicinal qualities. Columbo is generally given in the form ot infusion, made by half ounce of powdered Columbo to a pint of boiling water. From the liability to sour, it is best to make the infusion every day; Therapeutical application; sometimes acts as a laxative. Dose of the powder 20 grains three times a day; of the infusion f℥ii three times a day; the tincture is rarely used.

GENTIAN--GENTIANA.

Root of *Gentiana lutea* or yellow Gentian, a plant three or four feet high, with perenniel root, found in the Alps and other mountainous portions of Europe. Other species of Gentian are used, and possess similar medicinal virtues; general appearance of the roots, as found in the shops; taste, odor, color of the powder; character as a bitter tonic; therapeutical applications; given in combination with Columbo to advantage, in cases requiring tonics. The infusion of Columbo and Gentian pulverized, each one drachm to the half pint of boiling water affords about the quantity of the infusion to be taken during the day. It should be prepared only in quantities to be used in one day. Dose the substance of 20 grains.

QUASSIA.

Wood of *Quassa excelsa* and *Qussia Amara*, the former a tall tree found in Jamaica and the Caribbean Islands; the lat-

ter a small tree or shrub, inhabiting Surinam, and perhaps some of the West India Islands; shape and size of the pieces as found in commerce; manner of preparing it for use; character as a bitter tonic; given in infusion tincture and extract; generally infusion; medical virtues; therapeutical applications. Dose of infusion made with two drachms of rasped quassia to a pint of water, f℥ii three times a day.

GOLD THREAD--COPTIS.

Root of Coptis Tripoliata, a small evergreen with small creeping perenniel roots, found in northern portions of the United States and Asia; color and taste of the root; medicinal virtues and therapeutical application the same as quassia; used in substance in the dose of 20 grains; infusion made by ℥ss to the pint of water, f℥i; tincture f℥i.

AMERICAN CENTAURY--SABBATIA.

Whole herb of Sabbatia Augularis, an indigenous annual herbaceous plant growing throughout the Middle and Southern States. Should be collected in July and August, the time of flowering; character as a tonic; given in decoction, and by infusion made with an ounce to the pint of water, Dose f℥ii; therapeutical application.

WILD CHERRY BARK—PRUNUS VIRGINIANA.

Bark of Prunus Virginiana, or Wild Cherry, a well known indigenous tree; bark from trunk, body, or root; odor and taste; used in cold infusion and substance, generally the former; reasons for rejecting the decoction; peculiarity of its action upon the circulation; two separate and distinct effects produced; character as a tonic; best suited to cases of indigestion with irritability of the nervous and circulatory system; therapeutical applications; used in infusion made by ℥ss to the pint of cold water. Dose f℥ii three times a day.

MYRRH—MYRRHA.

Concrite juice of *Balsamodeudrom Myrrha*, a small scrubby tree found in Arabia Felix; spontaneously exudes and concretes on the bark of the tree. Two varieties of Myrrh Turkey and India, named from the parts whence imported; former best variety; general appearance of Myrrh; character as a tonic; therapeutical applications; used in substance and tincture. Dose in substance 20 grains; tincture f℥i.

VIRGINIA SNAKE-ROOT—SERPENTARIA.

Root of Aristolochia Serpentaria, an indigenous, herbaceous, perenniel plant, found in most parts of the United States. Character of the root; theraupetical application; given in infusion, sometimes in powder; character as a tonic. Dose of the powder 20 grains; of the infusion, made with f℥ss to the pint of boiling water, f℥i; of the tincture f℥i.

NITRIC ACID—ACIDUM NITRICUM.

In the concentrated state acts as a corrosive poison; sufficiently diluted, and in proper quantities increases the appetite, promotes digestion and adds to the general tone and energy of the system; modus operandi as a tonic in favoring digestion; conditions in which it is applicable; formed of different strengths, and the state of concentration determined by its specific gravity. That directed by U. S. Pharmacopœa, has sp. gr. of 1.5. Dose of the concentrated acid 3 drops, diluted with three ounces of water; danger to the teeth, and manner of preventing injurious action upon them.

MURIATIC ACID—ACIDUM MURIATICUM.

An aqueous solution of hydrochloric acid gas; of specific gravity of 1.16, when pure; color and odor; corrosive poison when taken in the concentrated form, causing destruction of the tissues with which it comes in contact, but perhaps in a

less marked degree than Nitric and Sulphuric acids; character as a tonic; therapeutical applications. Dose 10 drops largely diluted with water. Given most generally in combination with Nitric Acid in the form of

Nitromuriatic Acid, or aqua regia, made by the admixture of two parts of Muriatic Acid with one of Nitric; powers as a solvent of gold; its effects upon the organs of digestion; as a sialagogue alluded to under another head; character as a tonic; condition requiring its use. Dose three drops, in two or three ounces of water, three times a day.

SULPHURIC ACID—ACIDUM SULPHURICUM.

Sulphuric acid, or *oil* of *vitriol*, is a heavy colorless inodorous liquid, having the specific gravity of 1.845, and has a decidedly oily appearance. Like the other mineral acids above referred to, this is a destructive corrosive poison; best of the acids as a tonic in debility of the stomach; peculiar effects upon the stomach; therapeutical application. Dose of the strong acid one drop; used mostly in the form of

Elixir of *Vitriol—Acidum Sulphuricum Aromaticum;* mode of preparation; color, odor, taste; caution against injury to the teeth. Dose 10 drops largely diluted; one of the best promoters of the appetite for food.

FERRUGINOUS PREPARATIONS

The preparations of iron act as a two-fold tonic; for, in addition to their strengthening effect upon the digestive organs, an important ingredient is afforded by the presence of the metal itself in the blood, thereby giving, in many instances, that quality to the circulating fluid which renders it more nourishing to the tissues. In anæmic subjects, requiring not only increased energy of the digestive organs, but in whom there is a deficiency of red corpuscles, iron is a desirable remedy; other tonic effects alluded to under another head; iron

sometimes given in the uncombined metalic state in the form of

Pulverized Iron.—Ferri Pulvis.—Iron by hydrogen; is prepared with carbonate of iron, by reducing the carbonate to the metallic state by the action of hydrogen and heat; rationale; has obtained considerable favor as a ferruginous preparation, and deservedly so, no doubt, but perhaps possesses no material advantages over other preparations of iron; as a tonic in indigestion, inferior to the salts of iron; adapted to anæmic conditions; best preparation of iron in the metallic form. Dose 5 grains.

Scales of Iron—Squammæ Ferri, and *Iron Filings—Ramenta Ferri*, are also forms of using iron in the metallic state; these, though inferior to the pulvis ferri, above described, are forms in which the metal may be readily given; and in which its effects may be produced in the system. Dose 10 grains.

A form of *Acetate of Iron*, though not officinal, is sometimes used; it is prepared in domestic practice, by placing in acetic acid, or vinegar, bits of oxidized iron, such as nails that have for some time been exposed to air and moisture so as to become rusty. In cachexy, where the aqueous portions of the blood predominate, leading to debility, dropsical effusions, &c., this preparation, combined with diuretics, is often given by those who know nothing of its chemical composition, or its modus operandi, with very favorable results; chemical action between the oxide and the acid making *acetate of iron* with excess of acid and uncertain strength of the metal.

Subcarbonate of Iron—Ferri Subcarbonas—Commonly called *Precipitated Carbonate of Iron.* Mode of preparation; sensible properties; character as a tonic; most usual form in which iron is given, for ordinary purposes as a tonic in debility from indigestion, and want of coloring matter in the blood; particular therapeutical applications; dose, 10 grains three times a day in pill, or in powder mixed with syrup. The dose may

be increased, safely the only unpleasant effect to be apprehended being slight oppression of the stomach.

Sulphate of Iron—Ferri Sulphas—Green Vitriol.—This salt of iron, commonly called copperas, has other properties than that of tonic which render it an acceptable article in certain forms of debility of the alimentary canal. It has, besides the usual medicinal virtues of the other preparations of iron, an astringent property, not possessed to the same extent, if at all, by the other preparations; character of the salt; therapeutical applica ion; form of administering. Dose 3 grains.

Tincture of Muriate of Iron—Tinctura Ferri Chloridi.—Mode of preparation; color; odor; taste; one of the most useful preparations of iron, particularly in uterine and nephritic diseases, in which tonics are admissible; may be usefully employed under any circumstances where the effects of iron are required; particular diseases in which it is applicable specially; effects of light upon it, and the proper mode of preservation. Dose 15 drops three times a day.

Citrate of Iron.—Ferri Citratis, and Ammonio-Citrate of Iron; Ferri Ammonio-Citratis, are pleasant preparations of iron; the latter preferable on account of its solubility. Dose 5 grains three or four times a day, the former in pill, the latter in solution.

Hydrated Peroxide of Iron; Ferri Oxidum Hydratum; preparation; form in which it is kept, and manner of keeping; used principally as an antidote in poisoning from arsenic; modus operandi as an antidote. Dose as an antidote, a tablespoonful every ten minutes while the symptoms of poisoning remain.

Iodide of Iron—Ferri Iodidum—Mode of preparation; sensible properties; combines alterative with the peculiar effects of iron; therapeutical applications. Dose, one grain two or three times a day, gradually increased to eight or ten; for

local applications two drachms may be dissolved in a pint of water. A syrup prepared from this, called *syrup of Iodide of Iron.* Dose 15 drops three times a day.

CLASS V.

AROMATICS.

This is a class of remedies whose primary action is directed to the primæ viæ, and, although more transient in their effects than tonics proper, may be properly ranked under that head. They may be defined tonics possessing fragrant odor and agreeable taste, calculated to stimulate suddenly the stomach and bowels to vigorous action, but evanescent in its duration.

From the definition and modus operandi of tonics already given, it will be perceived that the articles called aromatics, may be arranged under the same head, differing only in the time required for their action, and the duration of their effects upon the organs of digestion. While the bitter tonics produce a slow but permanent impression, requiring sometimes several days to produce any visible change in the functions, the effects of the exciting, or aromatic tonics will have been exhibited and passed away in as many hours.

This variety of tonics may be very happily combined with bitter tonics. They not only conceal the disagreeably bitter taste of the latter, but arouse at once to energy the functional lethargy of those organs intended to be permanently supported by the former. Hence, in making bitter infusions or tinctures, the addition of ginger, cinamon, cardamum, &c., should generally be made. It is true, however, that in some rare instances, the permanent tonics are admissible in inflammatory diseases in which the immediate excitement of aromatics might not be serviceable. But it is evident that such conditions must be seldom met with, when it is remembered that no

great general excitement is produced in the vascular or nerv ous system by them, but a pleasant sensation of warmth experienced, and a healthy action produced in the alimentary canal. The peristaltic motion is increased and equalized, so that irregular spasmodic contractions are counteracted, while at the same time the general activity of the organs is promoted. They are therefore advantageously combined with cathartic medicines, likely to create griping; and in ordinary spasmodic colic will relieve not only the pain for the time, but prevent the accumulation of gas, which is often the cause of suffering in such cases.

Aromatics owe their virtues to volatile oils, and are therefore not subject to be made into such preparations as require the application of heat.

CINNAMON—CINNAMOMUM.

Bark of *Cinnamomum zeylanicum*, and *Cinnamomum Aromaticum*, a tree some twelve to eighteen inches in diameter, and twenty or thirty feet high; former, native of ceylon, cultivated also in Java and other places; the latter of China.

Two varieties of Cinnamon which take their names from the place of growth of the two species of the plant, *Ceylon cinnamon* and *Chinese cinnamon*. The former is in long cylindrical pieces, and considered the best variety; the latter in short irregular bits or rolls.

Cinnamon is used in substance and in the form of volatile oil—*Oleum Cinnamomum*. Conditions requiring its use; one of the most agreeable and efficient aromatics; used most commonly in connection with other medicines, particularly the bitter tonics. Dose of the powder about 15 grains, of the oil one or two drops in the form of emulsion.

GINGER—ZINGIBER.

Root or Rhizoma of *Zingiber officinale*, an annual plant two

or three feet high, with perenniel, tuberous root, a native of Hindostan, and cultivated in the West Indies, and other places; roots are sufficiently mature at a year old, and are dug in January or February; prepared by cleansing and scalding in boiling water to prevent germination. With *Jamaica ginger*, or as it is called most commonly, *white ginger*, more pains are taken in its preparation. The epidermis is removed, and the roots carefully dried. That not deprived of the outer covering is called *black ginger*, and generally comes to us from Calcutta.

Ginger becomes deteriorated by the ravages of worms and from exposure. Useful as a carminative, and all the purposes for which aromatics are applicable, like cinnamon, answers well in connection with bitter tonics, and with cathartics likely to produce griping. When used uncombined with other medicines, may be given in substance or infusion; of the former in the dose of 15 grains; of the latter, made by half an ounce of the bruised root to a pint of boiling water, 2 fluidrachms.

CLOVES—CARYOPHYLLUS.

The unexpanded flowers of *Caryophyllus Aromaticus*, a beautiful small tree inhabiting India. The buds are picked or frailed from the tree, and quickly dried. Cloves are the most pungent and stimulating, to the part applied, of any article of the class. When used in substance, generally combine with other medicines. In the form of *oil* of *cloves—oleum caryophylli*, it is best administered, when given alone—dose four drops—of cloves in substance 8 or 10 grains.

PEPPERMINT—MENTHA PIPERITA.

This is the whole herb of *Mentha Piperita*, a perenniel herbaceous plant about two feet high, found as a native of Great Britain, and cultivated in many portions of the United States. A very useful article in certain painful and other deranged

conditions of the stomach, particularly excessive vomiting, for which it has for some time been a popular remedy. Used in the form of mint water or volatile oil in suspension in water by the addition of sugar or gum. Most convenient form that of *Spirit of Mint—Spiritus Menthæ Peperitæ*, which is simply a solution of the oil in alcohol. This preparation also takes the officinal name of *Tincture* of the oil of pepper-mint—commonly called *essence of pepper-mint*—dose of the oil 2 drops—of the essence 15 drops.

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SPEAR-MINT—MENTHA VIRIDIS.

General characters and place of growth the same as Peppermint—distinguishing features, medicinal properties, preparations and dose, also the same.

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SWEET FLAG—CALAMUS.

Root of *acorus calomus*, an indigenous plant, with perenniel root, growing throughout the United States, in low, marshy places—uses, forms of preparation and dose the same as ginger.

Canella—bark of *canella alba*, and Lavender—flowering spikes or Lavendula vera, are frequently used for the purposes of those above named.

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AROMATICS USED PRINCIPALLY AS CONDIMENTS.

Although most of the articles already described under the head of aromatics, are sometimes used in the preparation of articles of diet, yet those remaining to be noticed are rarely used in any other way. While food itself is supposed to be properly arranged, under the general head of tonics, these articles which, being incorporated with articles used for food, aid in affording to the assimilating organs the fit material for perfect nutrition, should by all means have a place in the catalogue.

BLACK PEPPER—PIPER.

Dried unripe berries of *Piper Nigrum*, a climbing, perenniel plant, growing wild in various parts of India, and cultivated in Java, Borneo and other countries. Black pepper produces a burning warmth in the mouth, fauces and stomach, and produces considerable local excitement generally, in the alimentary canal. When used as medicine may be given in the dose of 10 grains.

PIMEUTO—PIMENTA—ALLSPICE.

The dried unripe berries of *Myrtus Pimenta*, a tree about thirty feet high, found in the West Indies, Mexico and South America. From the resemblance of the odor of Pimenta to a mixture of cinnamon, ginger and cloves, the name allspice was given to it. A very mild aromatic, possessing agreeable taste and odor, used extensively in culinary preparations—rarely as medicine—dose, however, when used as such about 20 grains.

ORANGE PEEL—AURANTII CORTEX.

Outer rind of the fruit of *Citrus Aurautium*, a tree about fifteen feet high, native of China and India, and found now in all civilized countries, lying within the tropical regions Rind taken from the fruit and dried. Orange Peel should scarely ever be given in substance—dose two scruples. From its indigestible nature sometimes produces unpleasant effects.

NUTMEG—MYRISTICU.

Kernel of the fruit of *Myristicu Moschata*, a tree about thirty feet high, resembling somewhat the orange tree, native of Molucas, and other neighboring islands. Coucrete expressed *Oil* of *Nutmeg—Myristical Adeps*—is the expressed oil from the nutmeg.

Mace—Macis—is the inner covering or arillus of the kernel

of the fruit. All of these are sometimes used medicinally, particularly as an ingredient in compounds, but most frequently in articles of diet. Said to possess narcotic properties. The Nutmeg and Mace, when used in substance, may be given in the dose of 10 grains. The volatile oil is best substituted in the dose of two drops.

The seeds of Cardamum, Coriander, Fennel, Caraway, &c., belong to the same class of aromatics, and by some are more frequently used as condiments, than some of the above named. Having nothing, however, which entitles them to an elaborate description, they are merely mentioned. They are used mostly for their grateful taste and pleasant odor.

II. DIVISION.

Remedies that Affect the Circulatory System.

CLASS I.

ARTERIAL STIMULANTS.

Under this head are included those substances which augment the force of arterial circulation. They are usually defined medicines that increase the action of the heart and arteries. This definition is founded upon the supposition that the arteries themselves supply, at least in part, the power necessary to force the circulating fluid along their canals. It is evident that the condition of the arteries has a great deal to do with the ready transit of the blood through them, but doubts are entertained of their having any agency in affording the propelling power. The very name itself given to the class under consideration would convey the idea of arterial propelling power. It is retained, like many other terms in this syllabus, merely to prevent as far as possible an unnecessary multiplicity of terms and names, in works on medicine, expressing the same thing. *Arterial Stimulants* is the term applied to a class of remedies, whose action tends to increase the force of the circulation in the arteries, and generally it is of no great practical importance to determine whether the impression is made upon the heart or arteries, or upon both. These are considered sufficient reasons for retaining this and other terms, which though not strictly proper, cannot lead to error in practice.

OIL OF TURPENTINE—OLEUM TEREBINTHINÆ.

Called Spirits of Turpentine—described under the head of Anthelmintics, and needs only to be noticed as a stimulant to the heart and arteries, in this place; character as a stimulant;

conditions in which it is particularly applicable from its local action upon the mucous membrane of the intestines. In small doses apt to produce undue excitement in the neck of the bladder, causing strangury. One of the direct stimulants, making the impression on the circulation without materially affecting the brain. Dose ʒ ss., repeated according to circumstances, rubbed with sugar or gum, and suspended in water.

CAYENNE PEPPER—CAPSICUM.

Red Pepper, as it is sometimes called, is the pods or fruit of *Capsicum annuum*, an herbaceous annual plant, native of the warmer portions of both continents, and cultivated all over the world. Other species found in South America and the West Indies, possessing the character of shrubs. Size and shape of the several varieties of the fruit or pods; character as a stimulant; peculiar beneficial effects on local inflammatory disease, as Tonsilitis, &c., inconsistent with the usual effects of excitants; therapeutical applications, locally and generally. Dose of the powder, 10 grains; of the infusion, made by adding two drachms to the pint of boiling water, fʒss.

CARBONATE OF AMMONIA—AMMONIÆ CARBONAS.

Mode of preparation; sensible properties; one of the best direct arterial stimulants, in cases requiring only an increased action of the heart, when the nervous influence is sufficiently abundant; produces a more natural state of the circulation, when given properly, than most other articles of this class of remedies; applicable particularly when a powerfully antacid is desirable. Given in the form of pill or solution; the former preferable on account of the disagreeable taste. Dose 5 grains, repeated as circumstances require.

PHOSPHORUS.

Its chemical history, &c., &c., belongs to the chair of chemistry. One of the most powerful stimulants; dangerous if not cautiously administered; not often used; never given in substance; may be administered in solution in oil or ether, in the dose of one-twelfth of a grain.

CLASS II.

ARTERIAL SEDATIVES.

Those articles belonging to this class produce an effect the opposite of the one last treated of. Sedatives diminish vital action. These Arterial sedatives may be defined medicines which lessen the arterial circulation. Arterial sedation will of course result from the depression of other vital action, but those remedies only belong to the class under consideration, which are supposed to have a special direction to the action of the heart itself. Nauseants, cerebral sedatives, &c., affect very decidedly the circulation, but do so by the dependence of one organ upon the normal action of other vital organs. The heart's functions are properly performed only as long as the proper amount of nervous influence is afforded; therefore, cerebral sedatives become indirect arterial sedatives.

Remedies of this class are indicated whenever diseased action is caused or kept up by excessive action of the heart.

A very great error is sometimes committed in judging between certain irritable conditions of the heart, dependent on enervation, and a state of over-excitement. Both conditions are accompanied by frequency, and sometimes considerable force of the circulation; and very often it requires an intimate acquaintance with the pathological condition, and the tendency of the affection, to determine the cause of the arterial disturbance. Sedatives are called for only in inflammatory excitement, or organic diseses of the heart.

TARTRATE OF ANTIMONY AND POTASSA—ANTIMONII ET POTASSÆ TARTRAS.

Before described under the head of emetics. Has a sedative effect from nausea, and also, aside from this, a specific influence over the heart's action. Its irritating qualities interfere with the safety of its use in many cases where its sedative effect is desirable; adapted particularly to inflammatory diseases in which a highly and permanently sedative influence is required. When given as a sedative, should be combined with demulcent articles, so as to avoid as much as possible the local action upon the mucous surface. Ordinarily the dose as a sedative is half a grain dissolved in gum mucilage. To induce tolerance and produce a powerful impression, two grains with free use of demulcent drinks.

AMERICAN HELLEBORE—VERATRUM VIRIDE.

Root or rhizoma of *Veratrum Viride*, an indigenous annual plant, with perennial root, found throughout the Northern, Middle, and most of the Southern States. Of late has attracted considerable interest, the attention of the profession being called to its virtues by Dr. Norwood of Cokesbury, S. C. One of the most prompt and efficient arterial sedatives, but transatory in its effects. Less effectual in permanently counteracting inflammatory action than the preceding article, in proportion to the readiness with which sedation is produced by them. Used in inflammatory diseases, particularly of the lungs. The impression must be kept up slightly till the disease abates. Given in the form of saturated tincture in the dose of six drops, repeated *pro re nata*.

FOXGLOVE—DIGITALLIS.

Leaves of *Digitallis* purpurea, an annual plant with biennial root, which sends up the second year an erect stem to the height of four or five feet, ornamented with beautiful purple

flowers. It is a native of the temperate portions of Europe, and cultivated in this country as an ornament, and for the medicine it affords. Care necessary in curing and preserving the leaves—liable to deteriorate by becoming mouldy from exposure to dampness. We are frequently disappointed in our attempts to produce the sedative effect of the drug, perhaps on account of deterioration of the article used. Important to select sound leaves for the preparation of tincture, &c.

A permanent and useful sedative—care necessary in its administration, lest a powerful effect be induced suddenly when given for some time. Suited to chronic diseases on account of the tardy manner in which its effects are produced—combining diuretic properties makes it suited specially to certain cardiac diseases attended with dropsical effusions. Given in substance and tincture—Dose of the former one grain three times a day, and of the latter ten drops, gradually increased if necessary.

BLOOD-LETTING.

Venisection affords the means of immediate and powerful sedation—not only lessens the degree of arterial action, but relieves the congested capillaries by lessening the quantity of the circulating fluid. Without regard to quantity abstracted, blood-letting should be pushed to the point of decided impression on the force of the circulation. Semi-recumbent or erect position best during the flow of blood. Approach of syncope should warn to arrest the flow—syncope injurious from the excitement of re-action.

NITRATE OF POTASSA—POTASSÆ NITRAS.

A native salt in an impure state; produced artificially by refuse matters and animal remains, purified for the arts and medicinal purposes; sensible properties; cooling sedative, less-

ening the general heat and force of the circulation. A local irritant to the surface of the stomach and bowels, and in over doses becomes an irritant poison. Advantageously used in febrile affections, when no fears can be had of a tendency to gastro-enteric irritation; when admissible for this purpose may be profitably combined with antimony and mercury. Given alone in the dose of ten grains dissolved in mucilage.

REFRIGERANT SEDATIVES.

Among these the most prominent is *cold affusion.* The force of the circulation, together with the general heat and excitement of the body, is most effectually subdued temporarily by the application of cold water in this way, upon the head alone. This is particularly useful in inflammation, or other conditions, manifested by heat and excitement of the brain. In local inflammation of any part, the application of cold water either by pouring or *sponging*, is a valuable remedial means; must be applied gently for some time, for its effect to be permanent. Wet sheet or pack does not carry out the principle here advocated; for in that the cold application is soon substituted by warmth and moisture.

Acid and Effervescing Drinks, such as *Lemonade*, and the *effervescing draught;* the latter composed of citric acid in one paper and bi carbonate of soda in the other, dissolved in separate tumblers, and poured together, then drank while effervcseing; these useful to moderate general heat and excitement.

Ice water, too, has powerfully refrigerating influence, not only upon the stomach, but, through the extensive sympathetic connection of this, with most other organs, the impression is made farther than any direct influence is exerted.

III. DIVISION.

Remedies that affect the Respiratory Organs.

CLASS I.

EXPECTORANTS.

Most, if not all, of this class are indirect agents. It is true that certain medicines affect in a special manner the respiratory organs, but there is some doubt whether, under all circumstances, any known remedy by a specific action on the lungs or bronchia, promote expectoration; and this is the definition of expectorants. The best expectorants in some conditions are nauseants; in others, stimulants are the proper means to produce this effect. Expectorants may be very readily considered under the heads of anodyne, stimulant, and sedative or relaxing agents, all of which are best produced by medicines having no particular tendency toward the organs of respiration. Mechanical agents also, such as demulcent articles, so far as they tend to sooth the irritated mucous surfaces of the air passages, may aid in expectoration when the proper conditions exist. When the bronchial secretion is deficient from over action or inflammation, it is best restored by nauseants, depletants and other anti-phlogistic means; when from nervous irritability, by anodynes, and when from deficient energy in the system generally, particularly the circulatory, excitants such as arterial stimulants, &c., are successfully resorted to for that purpose. Those medicines which are supposed to have direct expectorant action, are, for the most part, of the excitant character; and what special influence they exert in this way is effected by increasing the energy of the circulation in those organs; therefore are not applicable in a highly excited state of the system.

SQUILL—SCILLA.

Botanical and commercial history unnecessary in this place, as it has been before alluded to under the head of emetics. One of the articles said to have special tendency to the respiratory organs; being a nauseant, the good effects probably arise from its relaxing properties; probably imparts energy to the lungs when given in quantities less than are sufficient to nauseate. Generally, when given as an expectorant, is combined with other medicines calculated to impress the general system; calomel, tartrate of antimony and potassa, ipecac, &c., are usually associated with the squill; given in substance and in the form of *tincture*, *vinegar*, *syrup* and *compound syrup*. Usually given in substance, or syrup, in the dose of a grain of the former and a drachm of the latter.

SENEKA—SENEGA.

Root of *Polygala Senega*, an indigenous annual plant with perennial root, growing wild in most of the Southern and Western States. Appearance and taste of the root; possesses an exciting influence over the respiratory and uterine organs; particularly suitable in the latter stages of certain pectoral diseases, dependent on deficient uterine energy. Should not be given until the excitement of the system is somewhat subdued. Valuable expectorant in the latter stages of pneumonia and bronchitis. When given alone, usually given in decoction made by boiling an ounce of bruised seneka in a pint and a half of water down to a pint—dose f℥i every two hours; seneka is an ingredient in compound syrup of squills.

AMMONIAC—AMMONIACUM.

Inspissated juice of *Dorema Ammoniacum*, an umbeliferous plant, found growing spontaneously in various provinces of Persia. The gum-resin exudes in a milky juice from the

stalks, and concreting in tears and irregular masses, are collected about the month of June. Sensible properties. Character of Ammoniac as an expectorant; nature of the diseases in which it is applicable; compounds into which it enters; form in which it is given when uncombined; dose 20 grains.

BALSAM OF PERU—BALSAMUM PERUVIANUM.

Juice or Balsam which exudes from incisions made in the bark of *Myrospermum Peruiferum*, a beautiful tall tree, found in South America; mode of collecting; about the consistence of honey, of a reddish-brown color; a warm somewhat bitterish taste; stimulating expectorant, suited to pneumonic diseases, when there is a want of sufficient strength in the respiratory organs; best given suspended in water by being rubbed first with sugar or gum-arabic; dose half a drachm.

BALSAM OF TOLU—BALSAMUM TOLUTANUM.

Concrete balsamic exudation from the bark of *Myrospermum Toluiferum*, a tree found in Carthagena. Balsam of Tolu is, as found in the shops, a hard resinous substance, of a warm not disagreeable taste; properties similar to the last named article; best given in emulsion with gum in the *dose* of 30 grs.

CLASS II.

INHALANTS.

By this term is meant those substances which are taken into the lungs, either in the form of powder, fumes or vapor. Instruments called *inhalers* are used for the purpose, and are so constructed that the fumes of solids and the vapor of liquids, which arise from the application of heat, may be inhaled along with atmosperic air. A different, but even more simple arrangement is necessary, for the inhalation of pulverised substances.

This, like other remedial means, which have been seized by charlatans of the one-ideal character, and made to fill all the indications in a whole class of diseases, has gone somewhat into disrepute with many of the medical profession, in consequence. But, because quacks pervert, that which has been found useful in the treatment of disease, it should not be set aside. Those substances which have been found useful, applied in this way to diseases of the lungs and air-passages, are Rosin, Iodine, Allum, Nitrate of Silver, simple warm vapor, &c. The fumes of iodine and rosin, and a very fine powder of allum and nitrate of silver, are the forms of these articles, most conveniently used. The quantity of those articles used in this way, should be about the same as when taken into the stomach, and those used in the form of vapor or fumes should be sufficiently diluted with atmospheric air, to be inhaled without great inconvenience, and inspired for about five minutes, occasionally taking a full inspiration of pure air.

IV. DIVISION.

Remedies that affect prominently the Nervous System.

CLASS I.

A—CEREBRAL STIMULANTS.

Medicines which give increased energy to the functions of the brain are called cerebral stimulants. Many of the uneasy and painful sensations, as well as functional derangement, of various organs in the body, are attributable to a deficiency in the supply of nervous influence distributed from the sensorium or great centre of nervous action. Languor of body, and mental inactivity, the result of enervation, may be removed by those means which restore the function of the brain to its normal condition. They, for the most part, create a pleasurable sensation, and acuteness of the intellectual faculties, as their primary effect, but are succeeded by dullness and stupor in proportion, generally, to the degree of excitement created. This secondary effect of cerebral stimulants has given to the class the title of "Narcotics," by which, the articles treated of under this head are generally known at the present time. Often given for their secondary or soporific effect. From their primary action, irritability of the nervous system, and general restlessness are controlled. These conditions are the result of the deficiency of the nervous fluid or influence. The secondary or narcotic effect, probably the result of engorgement following, and in consequence of excitement produced in the brain by these medicines. It may be that the increased flow of blood to the organ is necessary to the increase of function, and continues beyond that necessary for its activity, and congestion is the consequence.

OPIUM.

Inspissated juice from the capsule of *Papava Somniferum*, an annual plant some two or three feet in height, native of the Southern portions of Europe and Asia, and cultivated in various parts of the world for the production of opium, or, for the ornament of its flowers. Longitudinal incisions are made in the unripe capsule, from which exudes a milk-like juice, and after allowing it to concrete, is scraped from the capsule. Several varieties of opium; the larger amount received in the U. States, and best quality, called Turkey opium. Opium has been considered only a palliative, but its effects are known in the present day to be such as eradicate disease. It is not only an anodyne, to sooth for the time, the sufferer racked with pain, but stands high in the list of prophylactic and curative remedies; gives energy to the brain, quiet to the irritable nervous system, and sleep to the wakeful. In over-doses produces great prostration and protracted somnolency. In poisonous quantities is followed by coma, convulsions and death. Given in substance in the dose of one grain.

PREPARATIONS OF OPIUM.

Morphia, the alkaloid principle in which the virtues of opium reside, is used in the form of Sulphate—*Morphiæ Sulphas*, and of acetate—*Morphiæ Acetas.* The former a light flocculent mass of needle-like crystals, of a white color; the latter generally in the form of brownish powder. These are the most convenient and suitable preparations of opium. In combining other medicines with them, care is necessary in order to prevent the addition of incompatible substances. The dose of these salts of Morphia is one-fourth of a grain.

There are three Tinctures of opium; the simple tincture, *Tinctura Opii*, and the acetated tincture—*Tinctura opii acetas*, sometimes called black drop, from its dark color. The latter generally

preferable on account of the addition of acetic acid, which, in some degree, prevents the unpleasant narcotism which attends the operation of opium as a secondary effect. The dose is thirty drops.

Camphorated Tincture of Opium—Tinctura Opii Camphorata, combines substances which have medicinal virtues in themselves, viz: a volatile oil, camphor and a demulcent; a mild and safe preparation, suitable for the administration of opium to children, particularly. One fluidounce contains a little more than a grain of opium. A useful preparation of opium in the solid form is powder of ipicac and opium.

Pulvis Ipicacuanhæ et opii, or Dovers powder.—This combines equal portions of ipicac and opium—Sulphate of potassa serves only for the more perfect pulverizing of the opium by trituration. Dose 10 grains.

ALCOHOL.

Alcohol, the product of fermentation, is found in ale, porter, beer, cider, wine, &c., upon which depends their property of exhileration. The substances of which these are composed undergo what is termed the vinous fermentation, when the saccharine principle they contain is converted into alcohol, and carbonic acid; obtained in the concentrated form by distillation. Specific gravity of pure alcohol, or officinal "Alcohol" of the United States Pharmacopœia, is 0.835. Absolute or anhydrous alcohol is of the specific gravity of 0.796—Proof spirit 0.920, and dilute alcohol 0.935. This last preparation is obtained by mixing equal portions of officinal alcohol and water.

The effects of Alcohol upon the system are those of cerebral and arterial stimulation; and although in very many instances the latter is the result of the former, yet it would seem that this very exciting article has direct effect, in some degree,

upon the great centre of the circulation. In Typhoid fever and other low conditions, dependent on enervation the greatest benefit is derived from its stimulation to the nervous centre, thereby giving an increase of nervous energy throughout the system. In proof of the cerebral effect being greater than the arterial stimulation, the frequent, quick and sometimes bounding pulse, found in these conditions to result from deficient nervous influence, is so much moderated under the use of alcohol, that its action might be taken for an arterial sedative. Useful as a general excitant, particularly so when the depression is the result of cerebral inactivity. In the use of alcohol care is necessary in determining the cause of functional debility of the brain, since its secondary tendency is to engorgement, which condition from other causes may give rise to symptoms similar to those indicating the use of Alcohol.

Preparations of Alcohol.—Pure alcohol is rarely used in medicine, except for pharmaceutical purposes, such as the preparation of drugs readily soluble in it. These called tinctures.

The distilled liquors commonly used for medicinal purposes are

Brandy and Whisky; the former obtained from the grape—the latter from corn, rye, potatoes, &c.

The genuine spirit, and that which has attained some age is preferable. The dose of these, when of ordinary strength, (Sp. gr. of 0.910) about f℥ii

The *fermented liquors* used medicinally are the various *wines*, (*vina*) particularly, Port, Madeira and Teneriffe; and the malt liquors, ale and porter.

As a constant drink for general debility, particularly of the digestive organs, ale is perhaps more appropriate on account of the bitter-tonic principle it contains. Port wine, in diseases requiring the use of such articles, particularly in relaxed conditions of the alimentary mucous surface, is one of the

best of these liquors, from its astringent and tonic virtues. The dose usually required of the wines is about f℥iv, and about double the quantity of malt liquors.

HENBANE—HYOSCIAMUS.

The leaves and seed of Hyosciamus Niger, a biennial plant, with a stem rising the second year three or four feet high; native of Europe, but found in considerable quantity in many parts of the United States. Annual variety possesses the same medicinal properties; character as a cerebral stimulant; therapeutical application; effects upon the pupil when given in large quantities, and when applied locally to the eyes; poisonous in large doses; differs from opinion in its effects upon the bowels, proving laxative very often in ordinary doses; may be given in substance, but more frequently used in the form of tincture or extract. Dose of the powdered leaves or seeds five or six grains; of the extract 2 grains, and of the tincture 1 drachm.

DEADLY NIGHTSHADE—BELLADONNA.

Leaves of Atropa Belladonna, a perennial herbaceous plant, with stems rising to the height of two or three feet; native of Europe, but cultivated in this country; possesses the usual anodyne and narcotic properties of other articles belonging to the class; poisonous in over doses; peculiarly adapted to cases in surgery requiring dilatation of the pupil; used generally in the form of extract; *Extractinu Belladonna*, in the dose of $\frac{1}{4}$ of a grain three times a day, gradually increased.

Atropia, an alkaline principle in which the active qualities of the drug is said to reside, is the most desirable preparation of Belladonna for external application; sometimes given internally in the dose of 1–30th of a grain, but from its activity is seldom used in this way.

HOPS—HUMULUS.

The fruit, strobiles, or catkins of *Humulus Lupulus*, a twining plant with perennial root, native of Europe and America, and cultivated extensively in some portions of this country. Anodyne and soporific in its effects; exaggerated reports of its effects in this way have given it more importance heretofore than perhaps it deserves. Used externally as an anodyne application to painful affections. Therapeutical administration internally; its anaphrodisiac properties alluded to under another head. *Lupulin*, a granular substance obtained by rubbing or threshing the hop, contains all the medicinal virtues of the drug, and is the form generally used; dose ten grains.

STRAMMONIUM.

Leaves and seeds of Datura Strammonium, or Jamestown weed, an annual plant three or four feet high, found in most parts of both continents of the earth; its nativity in uncertainty; Thornapple, as it is sometimes called, is an active narcotic poison in over doses, but in proper quantities, gives permanent cerebral energy in disturbed functions of the organ. Therapeutical application; forms of preparation mostly used are extract and tincture. Extract made from the leaves in the dose of one grain, and that prepared from the seeds, half a grain. Tincture of Strammonium prepared from the seeds; dose ten drops gradually increased.

HEMLOCK—CONIUM.

Leaves and seeds of *Conium Maculatum*, a biennial herbaceous plant four or five feet high; native of Europe, and cultivated in the United States. Active properties of hemlock reside in an alkaline principle called *conia*. In addition to its narcotic and stimulating influence upon the brain, Conium is thought to possess a sedative influence over the circulation; it

is a virulent poison, and was used as such by the ancients. Therapeutical uses: usually given in the form of extract or tincture; dose of the former 2 grains, and of the latter half a fluidrachm The extract is generally of uncertain strength, from the difficulty of always having it prepared from the fresh and active leaves, and from the care required in its preparation, as a high heat is decidedly injurious to the activity of the extract.

SULPHURIC ETHER—ÆTHER SULPHURICUS.

Produced by the action of sulphuric acid upon alcohol. A very volatile liquid, of strong odor and pungent taste, and, when of officinal strength, has the sp. gr. of 0.750; stimulant to the arterial as well as nervous system; therapeutical application; dose 1 fluidrachm. Inhalation is an advantageous mode of administering ether, for the purpose of producing anæsthesia, particularly. Preferred by some surgeons and obstetricians to chloroform as an anæsthetic; two or three drachms poured upon a sponge or handkerchief, and inhaled therefrom is the usual mode of using it in this way.

CHLOROFORM—CHLOROFORMUM.

This is the Terchloride of Formyle, and is prepared with chlorinated lime, water and alcohol; colorless and limpid; very agreeable taste and odor; sparingly soluble in water; of the sp. gr. of 1.49 at the temperature of 60°; most convenient test of purity is to pour a small quantity into a glass of water, when, if pure, the chloroform will be seen in clear globules at the bottom of the glass; if impure, will exhibit a milky appearance. As an internal remedy chloroform is one of the most popular and useful cerebral stimulants. Useful in painful affections where the anodyne influence of narcotic remedies are generally required; dose, thirty drops suspended in water by gum arabic, and agitated just before taking.

As an anæsthetic, chloroform has acquired considerable reputation; a mixture of *chloroform* and *ether* preferred by some; used as an external application for its anodyne effect, by the report of some physicians, with benefit.

CLASS II.

CEREBRAL SEDATIVES.

To this class of remedies few articles of the Materia Medica properly belong. Many there are whose action is more or less to depress the cerebral energies, but for the most part do so by their secondary or indirect action. Those arranged under this head, do by their primary influence lessen the activity of the brain, and in consequence of this become sedatives to the heart and other organs indirectly. For this indirect or general influence, they are, perhaps, mostly prescribed in the treatment of disease. The sedative and relaxing effects of tobacco, for instance, are those for which the article is most frequently administered; and to the control exercised over the heart's action, and the excited nervous system by the preparations of Hydrocyanic acid does the therapeutist attribute its usefulness in many instances. It may seem of no practical utility to place this class under a separate head, but it must be remembered that remedies, in order to be properly understood and appreciated, must be classified according to the primary and direct effect which they produce.

TOBACCO—TABACUM.

Leaves of *Nicotiana Tabacum*, an annual, well known plant, supposed to be a native of tropical America, and cultivated in most parts of the world, has received a passing notice under the head of "Emetics;" one of the most sedative, relaxing and prostrating agents; seldom given, and when used at all, generally in the form of enema, to produce great

relaxation in strangulated hernia, or some other dangerous stricture or permanent contraction. For such purposes, an infusion is made in the proportion of a drachm to the pint of boiling water, one gill of which may be thrown up the rectum at a time.

HYDROCYANIC ACID—ACIDUM HYDROCYANICUM.

Prussic acid, as it is sometimes called, abounds in various vegetables, such as the bitter almon, peach kernels and leaves, laurel, wild cherry, &c., but more abundantly found in combination with mineral productions, whence it is generally obtained. A very active poison; never given in the concentrated form; dilute Hydrocyanic acid is officinal, and sometimes used in the dose of three or four drops; generally used in combination with potassa, in the form of cyanuret of potassium. Dose $\frac{1}{8}$ grain with lemon syrup; therapeutical application; seldom given in any form; the vegetables in which it exists are sometimes given with the view to obtain the sedative effects of the acid they contain.

Digitallis, which has already been noticed under the head of *Arterial Sedatives*, has perhaps some sedative influence over the brain, but as its specific action upon the heart seems also direct, and much more prominent than that upon nervous center, it is more appropriately considered in that class.

CLASS III.

EXCITO-MOTOR STIMULANTS, OR SPASMODICS.

This division of medicinal agents, which is sometimes called *Tetanics*, embraces those agents that, by acting on the system of nerves called excito-motor, produce spasmodic contractions of the muscles over which they preside. From this definition their application to those conditions in which the muscles are paralyzed from the want of energy in the nerves supplying

them, would appear reasonable; their effects are permanently useful, only, however, when the cause of derangement no longer exists in the nervous centre or elsewhere, which produced the paralysis. Temporary action may be induced in many cases where it cannot be maintained even under the constant use of such remedies, because the great centre of nervous influence is still oppressed.

ARNICA.

Flowers of *Arnica Montana* or *Leopard's-bane*, a perennial, herbaceous plant, with a stem rising about a foot in height-native of the mountains of Europe, and is said to grow in the Northwestern portion of this continent. Its effects when given in full doses are those of irritation to the alimentary canal, and spasmodic action of the muscular system; therapeutical application; used in the forms of infusion, (made by 1 oz. to 0i) tincture and substance; dose in substance 15 grains; in infusion f℥i; tinct. ℥i. The tincture as a local application to swollen and inflamed parts is thought to be useful.

NUX VOMICA.

The seeds of *Strichos Nux Vomica* a small tree, native of the East Indies; fruit about the size and appearance of the orange, in the pulp of which the seeds are found; general characters of the seeds; effects upon the system; therapeutical application.

Two alcaloid principles have been discovered in the nux vomica, Strychnia and Brucia. In these the virtues of the drug reside, and are usually given, particularly the former, when the medicine is required. Dose of Nux Vomica, 5 grs.; of Strychnia, one-twelfth of a grain, and of Brucia, one gr.

CLASS IV.

NERVOUS STIMULANTS.

These are defined to be medicines, which, in deficient and irregular distribution of the nervous power, stimulate the nerves to healthy action. This class of remedies, commonly called anti-spasmodics, which, although under favorable circumstances may counteract or relieve spasm, has no more claim to the title, nor even so much as those termed narcotics. That which relieves spasm is an anti-spasmodic; and to include all those means which are considered useful in such condition, would make a grand division of remedial agents, embracing articles acting on very different organs, and in an entirely different manner. The articles under the head of Cerebral Stimulants, or narcotics, cerebral sedatives, aromatics, arterial sedatives, nauseants, &c., may, with equal propriety, be denominated anti-spasmodics, because they all are occasionally used for their indirect effect in this way. When spasms or irregular and excessive muscular contractions are the result of imperfect action of the spinal nerves, nervous stimulants will prove to be anti-spasmodic, when of engorgement of the nervous centers from high arterial action, arterial sedatives, &c., &c. So it will be perceived that the term anti-spasmodic has no reference to the direct and specific action of any articles of medicine.

The author by no means covets the character of perplexing the medical student by a multiplicity of terms expressive of the same class of substances, but as the name given to this as well as other classes differing from most writers, have been sanctioned by works of the highest character in the United States, he does not hesitate to run the risk of being so considered, particularly since the practical advantages are so palpable.

ASSAFETIDA—ASSAFŒTIDA.

The concrete juice of the root of *Narthex Assafœtida*, an herbaceous plant with perennial root. A cluster of leaves shoot forth from the upper surface of the root, in the midst of which rises a stem five or six feet high; native of Persia; juice collected in autumn by slicing away the top of the root, and scraping off the exudation and hardening in the Sun. It is a gum resin, and has somewhat the appearance of Rosin. Has always been considered a valuable anti-spasmodic, but is somewhat less used, on account of its fetid odor, than it would otherwise be; corrects that deranged condition of the nervous system called Hysterics, with which females are often troubled.

Dose in substance ten grains; tincture one drachm.

MUSK—MOSCHUS.

A concrete substance found in the follicles of the prepuce of the *Moschus Moschiferous*, or Musk deer; closely resembles the deer in shape and size; inhabits Asia; best variety of musk is brought to us from China; an inferior article is obtained from Europe. Musk is of bitter, unpleasant taste, and strong penetrating odor. Dose three grains, repeated in two or three hours; generally given in substance; rarely found pure, as temptation to adulteration exists, from the high price of the drug.

OIL OF AMBER—OLEUM SUCCINI.

The distilled oil from the *succinum*, or amber, a peculiar fossil resin, found in various parts of the world in alluvial deposites; found particularly in Russia, also in the United States. It has a resinous appearance, and is of a brown or yellowish color.

The oil when pure, (rectified,) is nearly colorless, and of a strong odor and disagreeable, bitterish taste. One of the best

nervous stimulants. Therapeutical application; made into emulsion, or rubbed with sugar, and suspended in water. Dose of the *Oleum Succini Rectificatum* is 10 drops.

CASTOR—CASTOREUM.

A peculiar concrete substance found in tollicles of the prepuce of Castor fiber, beaver, an animal found in Russia and America, valued particularly for its skin. From these countries the drug in question is obtained. Castor is an unctuous substance of a strong feted odor and bitterish unpleasant taste, seldom used as medicine in this country. Dose in substance 15 grains.

CLASS V.

NERVOUS TONICS.

Tonics are defined to be medicines that give strength and energy to the system generally; and so far as any regular classification goes, no distinction between those tonics affecting the nervous system, and those acting upon the organs of digestion and assimilation, has been made by writers on Materia Medica. It will be perceived that in our first general division of remedies, or those affecting the alimentary canal, under the head of "Tonics," those substances only were mentioned which promote digestion, or furnish more abundantly the means of support to the economy, by their direct effect. Those tonics which we have now to notice affect a system of the body, yet more important to the proper operation of the functions generally. These act upon that system which presides over all the organs, all the systems. It is indeed the system of systems. Important, then, must be nervous tonics in those annormal conditions of the body which depend upon nervation, from the want of energy in the centers or con-

ducting cords which lead out from them. These bear the same relation to nervous stimulants, that tonics proper, as they are called, or bitter tonics do to diffusible stimulants and aromatics. The latter excite to vigorous action temporarily, while the former produce, by slow degrees, permanent energy of the organ upon which they act. The division of tonics into "bitter tonics" affecting the digestive organs, and nervous tonics affecting the nervous system is, we conceive, of practical utility; and the classification in the lectures has been adopted with this conviction, prefering rather to take the risk of being censured for adding to the list of names already large, and for perplexing the student by destroying the uniformity of classification with teachers of Materia Medica, than to sanction that which will lead to erroneous conclusions in the application of remedies to disease.

PERUVIAN BARK—CINCHONA.

The bark of various species of Cinchona, varying in size from the small tree or shrub to the most lofty tree of the forest, measuring two or three feet in diameter. The Cinchona is found exclusively in South America. The bark, deprived of the epidermis, is peeled from the tree and dried. Two important varieties of bark, the Red Bard and Yellow, or Callisaya Bark. The latter considered preferable; whence derived; three alkaloid principles; found to reside in the bark, viz: Quinia, Cinchonia and quinidia.

The tonic effect of bark is confined principally to the nervous system. As an anti-periodic, corrects that state of the nervous centres, particularly the medulla spinallis, which gives origin to intermittent diseases generally. Particular therapeutical application.

The preparation of bark most commonly used, that of Sulphate of Quinine, though the extract, tincture and infusion,

are officinal preparations, and may, in some instances, be more advantageously used than the Quinia, as they contain ingredients of the bark of which that alkaloid is deprived.

Particular effects of quinine upon the system, and mode of administration. Dose of infusion of bark two fluidounces, repeated as circumstances require; Of *Extract of Bark* 20 grs.; of quinine 5 grs., repeated *pro re nata.*

DOGWOOD BARK--CORNUS.

Bark of *Cornus Florida*, a small branching tree, found abundantly in Georgia and other States of the Union. Supposed to be a substitute for Peruvian bark. Effects as an anti-periodic. Form of administration, that of Decoction in the dose of 2 f℥, three times a day, or more frequently.

WILLOW--SALIX.

Bark of *Salix Alba*, a well known small branching tree found throughout the temperate latitudes of North America. The bark has a peculiar odor and bitter taste. A crystaline principle is obtained from it called *Salicin.* This has been thought to be equal to quinia, as an intermittent agent, and although its good effects may have been, in some instances, exaggerated, yet it is certain that not only the Salix, but dogwood has properties similar to Cinchona, and may be found useful in those diseases in which quinine has become so famous. Salix is used in the same forms of preparation, and in the same doses as Cinchona; Salacin, for the same purposes and in about the same quantities as quinine.

SULPHATE OF ZINC—ZINCI SULPHAS.

This, together with other mineral tonics hereafter to be noticed, has been described under the head of emetics, and requires to be alluded to in connection only with its tonic pro-

perty. The effects of zinc, like the vegetable tonics above described, are suited to nervous disturbance, but is not applicable to the same variety of nervous disease. While the latter are suited to diseases or disturbances of the system arising from injurious impressions made on the medulla spinallis, the former is found to be more useful in convulsions and other affections arising from derangement of the brain. Particular therapeutical applications; must be gradually introduced into the system, and given for some time to produce its tonic effect upon the nervous system; dose, 2 grains three times a day, in the form of pill.

COPPER—CUPRUM.

The preparations of this metal, as a tonic in nervous diseases, particularly that of epilepsy, are thought by some practitioners, superior to all others. It is questionable, however, whether copper possesses virtues which should entitle it to more confidence than some other articles of the class.

Sulphate of Copper—Cupri Sulphas has been noticed as an emetic, and may be used appropriately as a nervous tonic. There is no very good reason for preferring any other preparation of copper for this purpose, yet it is not the one generally preferred. Dose, one grain three times a day.

Ammoniated Copper—Cuprum Ammoniatum is the favorite preparation of the metal, with those who are so lavish of their praises of copper in epilepsy. This, as its name imports, is a combination of copper with ammonia; prepared by triturating sulphate of copper with carbonate of ammonia; particularly desirable in epilepsy, given in the *dose* of $\frac{1}{4}$ of a grain three times a day in the form of pills, gradually increased to two grains or more.

NITRATE OF SILVER--ARGENTI NITRAS.

This, for internal use, is generally in the crystaline form. *Lunar Caustic*, the fused crystals moulded into cylindrical sticks, from the impurities which it sometimes contains, is intended principally for external application. Nitrate of silver is also much esteemed by some in the treatment of chronic convulsive affections; effects upon the skin; given in the dose of $\frac{1}{4}$ of a grain, three times a day, gradually increased to one or two grs.

SHOWER-BATH--IMPLUVIUM.

The shower-bath is effected by pouring water into a vessel with perforations in the bottom, through which it escapes in the form of a shower upon the patient. To make the bath effective as a nervous tonic, the water must be cold. A shock is communicated to the nervous system, and by this an important influence is exerted upon the energy of the nervous system. A very simple apparatus is sufficient. A gallon of cold water poured into a cullender, held or suspended over the bare head and shoulders, will be sufficient. Water, ten minutes after being taken from a spring or well, is of proper temperature. The patient should be wiped, dressed and put in moderate exercise in the air if not unpleasant—should not be put in bed if able to be up. Therapeutical application; best used early in the morning. When re-action does not occur readily the bath should be suspended or less water used, or of a higher temperature.

V. DIVISION.

Remedies that affect particularly the secernent system.

CLASS I.

DIURETICS.

The secretion of urine by the kidneys is a function without which general derangement must be expected. Notwithstanding this general fact, instances are given by authors in which no very material difficulty has resulted from the almost entire suppression of this valuable function. From what almost any practitioner has observed, the kidneys sometimes fail to perform their function, without any apparent increase of disturbance in the economy. Almost incredible tales are related of the want of this secretion. It is stated that for days, weeks, and even months, scarcely any discharge of urine has occurred. The retention in the blood of principles which these emunctories are, when healthy, supposed to eliminate, is a fruitful source of derangement throughout the organism, and when such arrest of the renal action occurs, and no very material injury is sustained, some vicarious depuration no doubt exists, by which the blood is relieved of that which is usually taken up by the kidneys.

Diuretics are defined to be medicines which promote the secretion of urine. In a more extended sense, all remedies which excite the kidneys or urinary passages, whether they increase the quantity of urine perceptibly or not, and those that, by their soothing, and sedative influence, facilitate its discharge from the bladder, are denominated diuretics. We have also diuretics proper which increase the secretion of urine, by actions the opposite of each other. A stimulating article, for instance, will increase the quantity of urine when the kid-

neys are in a state of inactivity, while in an irritable and excited state of the glands, unirritating and sedative means produce the same result. Various remedies may act as indirect diuretics in this way. When, for example, from renal inflammation, the function is suspended, any anti-phlogistic treatment, local or general, may restore the secretion.

Diuretics are serviceable in the treatment of diseases of various kinds. In inflammation of the urinary passages they are of benefit by diluting the urine, so as to prevent the irritation produced by the more acrid secretion.

Particularly useful in dropsical effusions by creating a demand in the blood for fluid, which excites the absorbents to vigorous action, thereby promoting the absorption of collections in the cavities and tissues of the body.

In inflammatory and febrile diseases generally, diuretics are beneficial, particularly those of the sedative and refrigerant varieties. It is thought that at least a part of the benefit they afford in such affections is ascribable to their depletory influence upon the circulation.

SQUILL—SCILLA.

The bulb or root of the Scilla Maritima, which has been sufficiently described under another head. As a diuretic, generally given in combination with other remedies. In dropsical conditions combined with alterative and tonic medicines, and with more active diuretics, such as digitallis, &c.

For this purpose generally used in the form of pill made of the pulverized squill, or vinegar of squill. Dose of the former one grain, of the latter ʒi.

FOX-GLOVE—DIGITALLIS.

The leaves of Digitallis Purpurea, referred to under the head of Arterial Sedatives, where the description and preparations are given. A valuable diuretic in dropsies, particularly

hydrothorax arising from cardiac disease, in which the sedative as well as diuretic effect of the drug is desirable. Forms of preparation and dose the same as for its sedative effect.

BITARTRATE OF POTASSE—POTASSÆ BITARTRAS.

Chemical composition, &c., given under the head of Cathartics. A desirable diuretic in cases of dropsy in which hydragogue cathartics are desirable. *Cream of Tartar*, as it is commonly called, may be used in cases where other cathartics less hydragogue in their action would not be admissible on account of the prostration they induce. May be conveniently used in the form of solution. Sparingly soluble in water, and when thus prepared makes a very agreeable drink for constant use through the day.

NITRATE OF POTASSA—POTASSÆ NITRAS.

This preparation of Potassa has also been noticed previously. It is a valuable diuretic, possessing cooling sedative properties; and but for the irritation it sometimes excites in the alimentary mucous membrane, would be universally applicable in those affections requiring diuretic, refrigerant and sedative remedies. Dose same as for the sedative effect.

HORSE-RADISH—ARMORATIA.

Root of Cochlearia Amoracia, an herbaceous plant with perennial root, sending forth numerous large lance-shaped leaves, in the midst of which a stem rises to the height of two or three feet.

It is a native of Europe, and is cultivated in the United States. The root is white, tapering, and of a burning, somewhat sweetish, agreeable taste; the officinal preparations are infusion and compound spirit. When grated and moistened

with vinegar, makes an agreeable condiment, particularly serviceable in dropsy, with debility of the digestive organs. It is an excitant to the stomach, and to the secretory organs, particularly the kidneys.

PARSLEY—PETROSELINUM.

Root of Apium Petroselinum, a well known garden plant; medicinally used as diuretic in the form of infusion for ascites and other forms of dropsy, to be taken *ad libitum*.

OIL OF TURPENTINE—OLEUM TEREBINTHINÆ.

Before noticed as an Anthelmintic and Arterial stimulant. The several varieties of Turpentine from which the oil is distilled possess diuretic properties. The spirit of Turpentine, as it is commonly called, is a stimulating diuretic, exciting the kidneys and urinary passages sometimes even beyond the point for secreting the usual quantity of urine, or its ready discharge from the bladder. Therapeutical application, manner of administration, and dose the same as when used as a general stimulant.

BALSAM COPAVIA.

Much used as a diuretic and a specific excitant to the passages. Dose ℥ss.

CANTHARIDES—CANTHARIS.

The *Cantharis Vesicatoria* is a coleopterous insect three-fourths of an inch long, and one-fourth in breadth, and of a shining greenish color. The Spanish Fly is found abundantly in the Southern portions of Russia, and in Spain, Italy and other countries on the coast of the Mediterranean.

They have a strong offensive odor and acrid disagreeable taste, which are retained, in a great measure, in the dried

state. Active ingredient a crystalline substance called *Cantharidin;* insoluble in water; soluble in hot alcohol, and in chloroform, Olive oil, &c.

Cantharides is, perhaps, one of the most exciting diuretics, producing an inflammatory state of the kidneys and urinary passages, particularly the neck of the bladder. Therapeutical application, and danger from over-doses. Given in the form of tincture, in the dose of 20 drops, gradually increased.

SPIRIT OF NITRIC ETHER—SPIRITUS ÆTHERIS NITRICI.

Sweet spirits of Nitre is a mixture of hyponitrous Ether and Alcohol. For process of preparation, consult U. S. Dis. It is a colorless liquid of pleasant odor and agreeable taste; increases the quantity of urine when suppressed from over-action of the kidneys; seems to have a specific influence over excitement of the urinary passages; therapeutical application. Dose ʒi. Useful to allay strangury.

JUNIPERUS.

Several species of this plant are said to have diuretic properties. Juniper, the berries of *Juniperus Communis.* Savine, the tops of *Juniperus Sabina*, and red cedar, the leaves of *Juniperus Virginiana*, are all of the same family of plants, and possessed of similar properties. The latter is native of the United States; the Juniper and Savine are small shrubs growing in the Southern parts of Europe.

These articles are of the exciting diuretics, producing excitement and heat, not only in the urinary organs, but in the stomach and bowels, when taken in large quantities. From the tendency to produce excitement in the bladder and other pelvic viscera, they are said to act as enemenagogues of the exciting kind, on which account designing persons sometimes avail themselves of their effects, to produce abortion.

Savine and Juniper are best given in the form of distilled oil. *Oleum Sabinæ and Oleum Juniperi*—the former in the dose of about three drops, of the latter ten drops. Cedar leaves are rarely used in medicine, but will be found to possess similar properties, to some extent.

SIALAGOGUES.

Any substance possessing acrid, pungent or exciting properties, when taken into the mouth, promote the secretion of Saliva. So also with saccharine, and acidulous substances; and all of these are, strictly speaking, Sialagogues. But this term is generally applied to those remedies which, from a specific constitutional action upon the salivary glands, excite them, and cause an unusual quantity of saliva. The condition thus induced is called *salivation.*

The remedies which come under this head are perhaps never used with the view of producing this effect, but when symptoms of ptyalism appear, it is taken as conclusive evidence of the constitutional or general effect of the medicine.

Cholagogues may very properly be considered under the same head; for not only does the organ whose secretion is increased by cholagogues belong with the salivary glands alike to the secernent system, but some of the very articles which, as cholagogues, excite the liver to more abundant secretion, also excite the salivary glands, and therefore become sialagogues.

MERCURY—HYDRARGYRUM.

The preparations of Mercury have been noticed under another head, and needs only to be mentioned as having a specific influence upon the liver and salivary glands.

Used for these effects in the various forms which were mentioned under the head of Cathartics, and in doses somewhat less than would be required as an aperient. In order to produce the exciting effect of mercury upon the liver, it is impor-

tant that the bowels should not be moved by it, and therefore, a quantity insufficient to produce cathartic action will act more powerfully as a cholagogue than a larger quantity, unless some combination be made to prevent the laxative effect. *Blue-Pill —Pilulæ Hydrargyeri*—is the most convenient form for the specific action of mercury; dose about 4 grains.

MINERAL ACIDS.

Nitric Acid, Acidum Nitricum and *Muriatic Acid, Acidum Muriaticum*, are perhaps the best glandular excitants of the mineral acids, and have been found peculiarly serviceable in inactivity of the liver, from their use internally, and external application in the form of bath.

These two acids combined, in the proportion of one part of Nitric to two of Muriatic Acid, making the officinal compound called *Nitromuriatic Acid—Acidum Nitromuriaticum.* For the foot-bath, or for sponging, this is generally used; mode of application; effects upon the liver and salivary glands; dose of Nitric Acid, three drops, diluted with a wine glass full of water; of Muriatic Acid, ten drops, and of Nitro-muriactic Acid, five drops.

APHRODISIACS.

Ordinarily any of the exciting diuretics are more or less aphrodisiac in their effects. These, it is known, produce an increase of blood in the genital organs, and by this means favor the secretion of the spermatic fluid. Aside from the increased quantity of semen thus promoted, these remedies cause involuntary erections by the irritability and superabundance of blood in the parts; and thus a fervor is created, in either sex, which may lead to increased venereal desires. This is, however, by no means so certain a result as has been supposed. Females have been poisoned with Savine, Cantharides, &c., by base, designing men, in their attempts to excite them to lascivious desires beyond the control of ordinary prudence.

Anaphrodisiacs, or remedies whose tendency is to allay inordinate excitement of the procreative organs, are perhaps more frequently called in requsition by the therapeutist.

In Spermatorhoæ, Gonorrhœa, &c., it sometimes becomes necessary to administer remedies which have a controlling influence over the excitement in the seminal glands and venereal organs generally.

Such remedies as possess a quieting influence over the nervous system, as hops, camphor, opium, &c., particularly hops, which may be conveniently given in the form of *Lupuline*, in the dose of 5 grains, have this sedative influence.

VI. DIVISION.

Remedies that Affect Particularly the Uterine System.

CLASS I.

EMMENAGOGUES.

These are medicinal agents which promote the menstrual discharge; and like some other classes, this is composed mostly of indirect agents. Few articles of the class are entitled to the term direct emmenagogues, and perhaps none strictly so. Deficient menstruation often depends on general bad health from disease in an organ remote from the uterus, and the means employed for its removal become the emmenagogue in the particular case; these are called indirect means. Those commonly considered direct agents acting upon the uterus exclusively, such as guaiac, strammonium, electricity, and perhaps others, are not such, strictly speaking; for their influence is exerted upon the assimilating vessels, and nervous system generally, and by the restoration of the functions of these important organs, the tone of the uterus, as well as other organs, is restored. In amenarrhoæ from anemia, that which restores the proper quantity and quality of the blood becomes an indirect emmenagogue. So with some of the exciting diuretics, and cathartics, which, by producing irritation and excitement, cause an increased flow of blood to the pelvic viscera, and the uterus partaking of the excitement from sympathy of contiguity, is, when in an atonic condition, stimulated to perform its functions properly.

GUAIAC—GUAIACI RESINA.

Concrete juice of *Guaicum Officinale*, a large tree growing in the West Indies. The juice is obtained from the wood

which is called *lignum vitæ;* mode of obtaining the gum resin; color, odor, taste; relations to water and alcohol; effects upon the system, those of excitant and alterative, promoting assimilation; character as an emmenagogue; character of cases in which it is useful. Usually given in the form of tincture in the dose of a drachm, three times a day, in sweetened water or sweet milk.

SENEKA—SENEGA.

Root of Polygala Senega, a small plant with perennial root, shooting forth annually several stems which rise about a foot in height. It is found abundantly in many parts of the United States—described under another division of this work; action upon the system that of an excitant with a tendency to the uterus and lungs. Applicable as an emmenagogue, more particularly about the time of the menstrual period. Given in the form of decoction, made in the proportion of an ounce of the bruised root to a pint and a half of water, boiled down to a pint; dose, f℥i, repeated every few hours.

THORN-APPLE—STRAMMONIUM.

Leaves and seeds of *Datura Strammonium*, known as Jamestown Weed; described under the head of cerebral stimulants. Applicability as an emmenagogue; usually given in tincture in the dose of ten drops, three times a day, gradually increased to fifteen.

Besides the articles mentioned above, many others are said to have emmenagogue properties. It must be borne in mind, however, that these indirect agents have no specific influence over the uterus. Among them are the following:

Aloes, a cathartic, with a specific tendency to excite the lower bowels, does by this action promote the flow of blood to the pelvic viscera generally; caution required in its use.

Many of the exciting *diuretics* produce excitement of the uterus in the same way.

Electricity, by increasing the activity of the nerves supplying the organs of generation, becomes, in conditions adapted to its use, a valuable emmenagogue; mode of applying electricity; cases suitable for its use.

ABORTIVA.

Of all the remedies said to act directly upon the uterus, none do so, except those belonging to this class. Abortiva are defined to be those medicines which promote the contraction of the womb. While it is true that certain exciting articles, such as we have named of the cathartics and diuretics, likely to produce excitement in the uterus, may lead to contraction and expulsion of the contents of the womb, none of them have any specific and direct effect upon it in any way. The abortiva possess this specific influence. They do so, however, not with undeviating promptness; for they sometimes fail entirely to produce contraction of the uterine fibre. So frequently has this failure been observed, that some authors deny the existence of such properties in one of the most prominent articles of the abortiva. The use of this class of medicinal agents is very apparent. They are valuable not only under circumstances requiring additional energy in the expulsion of the contents of the uterus, but where, from the existence or threatened occurrence of hemorrhage, it is necessary to promote the firmer contraction of the organ.

ERGOT—ERGOTA.

The diseased seeds of Secale Cereale, or Rye. Ergot is in irregularly shaped grains, somewhat larger than the healthy grains of rye, of a dark color externally, and of a whitish interior. Possesses parturifacient properties, in a high degree, and is serviceable in all cases where it is necessary to increase the expulsive contractions of the womb, during labor, or to

promote the firm contraction of the organ where hemorrhage exists.

Given in substance in the dose of 10 to 15 grains, and repeated if necessary. About twenty minutes are required for its effects to be produced upon the uterus.

Wine of *Ergot*—Vinum Ergota. This is a very agreeable and efficient preparation of ergot, and may be given in the dose of f℥ss. The *Infusion* and *Decoction* are also forms in which the remedy may be used.

VII. DIVISION.

Remedies that affect the Organs of Assimilation.

CLASS I.

ALTERATIVES, OR EUTROPHICS.

These are remedies which, by their imperceptible action, impress the assimilative or nutrient vessels, and restore their energies when enfeebled. No visible action upon any of the organs of digestion, respiration, or circulation, seems to be manifested in their use, save the gradual improving of the functions of the vessels above alluded to.

The first visible effects are exhibited in the evidences of increased nutrition. This is affected without any material change being made in the action of the stomach or any of the digestive organs, that we find to follow the use of "tonics."

They are useful in the various forms of specific contagious and non-contagious diseases, in which the promotion of nutrition is the main therapeutical indication in their treatment.

MERCURY—HYDRARGYRUM.

PREPARATIONS OF MERCURY.—*Blue Pills, Rilulæ Hydrargyri, Calomel, Chloridum Hydrargyri mite, and Corrosive Sublimate, Hydrargyri Chloridinum Corrosivum*, are the simple preparations of mercury. From any of these the alterative action may be obtained, but the last named, from the violence of its action as an irritant in over doses, requires to be given very cautiously.

The first two preparations, for their alterative effect, should be given in doses somewhat smaller than for their cholagogue action; the last in the dose of one-twelfth of a grain twice a day.

ARSENIOUS ACID—ACIDUM ARSENIOSUM.

Arsenic, though an active poison in over doses, stands deservedly high as an alterative, particularly in periodical and cutaneous affections.

Solution of Arsenite of Potassa—Liquor Potassæ Arsenitis, or Fowler's Solution, is the preparation of Arsenic preferred for internal administration, and may be given in the dose of ten drops three times a day. The acid in substance is given in the dose of one-sixteenth of a grain.

The symptoms by which to determine that the specific effect has been produced, are œdema of the face and eyes, and stiffness about the eye-lids.

IODINE—IODINIUM.

A non-metallic substance, found in Marine vegetables; one of the best alteratives; acts in this way, in removing glandular and other enlargements.

Given in substance, in the dose of one grain or in solution with Iodide of Potassa, in the dose of 8 drops, gradually increased.

SARSAPARILLA.

The root of *Smilax officinalis*, a twining plant, found in New Granada.

Used in the form of decoction and syrup. Dose of the former, four fluidounces; of the latter half a fluidounce.

Many other articles possess eutrophic properties, and may be used with advantage in cases requiring alterative action.

Various compounds of Iodine and mercury, with Sarsaparilla, &c., are in use, and afford the means of obtaining the combined influence of these several articles.

VIII. DIVISION.

Remedies that act locally, and affect all the tissues to which they are applied.

CLASS I.

ASTRINGENTS.

Various definitions of the term "astringents" have been given, some of which are not at all satisfactory. They are by some recognized as agents affecting alone the muscular fibre, and are defined, "substances which produce contraction and condensation of the muscular tissue," in accordance with this opinion. This class is, in works on materia medica, placed under the head of general excitants, from their supposed action upon the circulatory system, and hence have been termed agents affecting the muscular fibre and blood vessels.

While we would not deny that under some circumstances astringents may affect the circulation, it would seem more in accordance with their most prominent effect to define them remedies which produce condensation of all the tissues which they affect. They may do so by being applied directly to the part which it is desirable to impress, or, by being carried through the circulation to the point to be affected. The opinion is entertained that in the latter mode of action the blood itself is so modified in its quality that the same changes are affected in parts diseased as might be expected from their local application to similar conditions. There is some plausibility in this view of their *modus operandi*, when used for hemorrhages, &c., in organs so situated that they can be reached only through the circulating fluid, yet from their known constringing effect upon the tissues in arresting the flow of blood from capillary vessels, it is perhaps more reasonable to sup

pose that the astringent principle itself is carried by the blood to the part, and produces the ordinary effect of astringents as when applied locally.

Astringents are usetul in the various hemorrhages; such as hæmoptisis, hæmaturia, and uterine hemorrhage, as well as the effusion of blood from any part of the alimentary canal. In diarrhœa, from the many forms of disease affecting the primæ viæ, the various astringent articles hereafter to be enumerated, are important curative means. As topical applications in the many varieties of external disease, such as chronic and illconditioned ulcers, ophthalmia, &c., they are serviceable.

By their direct application to chronic and specific diseases affecting the urethra and vagina, material alteration in their condition is produced.

OAK BARK—QUERCUS.

Bark of different species of oak, many of which may be used to advantage as astringents. Only two, however, are recognized as officinal, viz: *Quercus Abba* and *Quercus Tinctoria*. Principal active ingredients, tannin and gallic acid. The astringent property, as has been thought, does not always depend upon the presence of these acids in the various astringent articles belonging to the class. They are found in most vegetable astringents, but in many articles possessing astringency in a high degree they do not exist.

Oak bark is rarely used internally. Quercus Alba or white oak preferable when used in this way; generally used internally, and for external application in the form of decoction, made by boiling ℥i of the bark in Oiss of water down to a pint. The dose of this, f℥ii; used also externally in the form of bath, for relaxed and enfeebled states of the system.

GALLS—GALLA.

Excresences found on the branches of *Quercus infectoria*, a small tree found in Asia Minor. General appearance and sensible properties of galls; several varieties, named according to their color, or the place whence obtained.

Galls are used internally, generally in the form of Tincture, or infusion; dose of the former, f℥i; of the latter, f℥ii; in substance, grs. xx.

Tannin or *Tannic Acid*, prepared from galls, possesses in a concentrated form the astringency of galls, and is generally preferred to the ordinary preparations of the article. Tannic acid is a yellowish white powder; astringent taste; soluble in water. Dose 5 grains, in solution or in the form of pill.

Gallic Acid, also prepared from the gall nut, is obtained at the expense of Tannic Acid; the latter being converted by what is termed the fermenting process, into the former. Said to be less constipating than other astringent preparations. Particularly useful in internal hemorrhages, from its chemical nature rendering it more easily taken up. Dose 10 grains.

BLACKBERRY-ROOT—RUBUS VILLOSUS.

Root of *Rubus Villosus*, a well known indigenous plant, found abundantly in many portions of the United States. Used in the form of decoction—made with ℥i to Oiss of water, boiled down to a pint. Dose f℥ii. When used in substance may be given in the dose of 20 grains.

From the readiness with which this, and the succeeding article, may be obtained, and from the mildness of their action, they have come into very general use.

DEWBERRY-ROOT—RUBUS TRIVIALIS.

Root of *Rubus Trivialis*, found in great abundance in the United States. Forms of administration, medicinal qualities,

and dose, the same as preceding article. These are useful articles in bowel affections of children, and are found efficient articles where astringents are required.

CRANESBILL—GERANIUM.

Root of *Geranium Maculatum*, an indigenous herbaceous plant with perennial root, and grows throughout the United States, in low moist grounds; one of the most powerful indigenous astringents. Given in the form of Tincture, decoction and extract. Dose, in substance, 20 grains; Tincture, f℥i; Decoction, made by boiling an ounce of the root in Oiss of water, down to a pint, f℥ii.

RHATANY—KRAMERIA.

Root of *Krameria Triandria*, a shrub found in Peru. Tonic effects are produced by rhatany, as well as powerfully astringent. Particular diseases in which it is given. Forms in which it is used. Dose of the Tincture f℥ii.

LOGWOOD—HÆMATOXYLON.

Wood of *Hæmatoxylon Campechianum*, a tree of medium size, found in Campeachy and other portions of tropical America. Comes to us in the form of billets or chips; color, odor and taste; forms of preparation, those of extract and decoction. Dose, of the former, 20 grains; of the latter f℥ii.

Therapeutical applications—Particular diseases in which it is used.

CATECHU.

Extract of the wood of *Acacia Catechu*, a small tree, native of the East Indies. Catechu is generally given in substance, in the dose of 20 grains, or Tincture in the dose of one or two drachms. One of the most useful of the vegetable astringents. In the form of Tincture, enters into various diarrhœa and dysentery preparations.

KINO.

The inspissated juice, which exudes from incissions made in the bark of *Pterocarpus Marsupium*; varieties named according to the countries from which they are obtained. Used in the forms of Tincture and infusion; the former in the dose of one or two drachms; the latter, f℥ii; in substance, 20 grains.

CREASOTE—CREASOTUM.

A peculiar substance, having the nature of volatile oils, obtained from tar; differs from ordinary astringents, in its action, having peculiar exciting properties by which the tissues are made to contract. Special use in excessive vomiting and chronic diarrhœa; poisonous, in over-doses; acting as an irritant to the mucous surface of the alimentary canal. Given in the form of emulsion with gum arabic, or rubbed with sugar and suspended in water, in the dose of one drop.

ALUM—ALUMEN—SULPHATE OF ALUMINA AND POTASSA.

This is a double salt, consisting of the tersulphate of alumina, united with sulphate of potassa; obtained from minerals, containing the constituents, called *alum ores*. Sensible properties of alum. In large doses acts as a cathartic. Used externally, where astringents are required, and as a wash to the vagina in hemorrhage and relaxed conditions, in the form of solution. *Alumen Exsiccatum*, or *burnt alum*, is used mostly as an escharotic to destroy fungous gramulations, &c. Internally, alum may be given in the dose of 20 grains.

ACETATE OF LEAD—PLUMBI ACETAS.

The result of the action of acetic acid upon metallic lead; sensible properties; danger of over-doses, or the too long continuance of its use; nature of the poisonous effects. Particular application as an internal hæmostatic; its use as a collyrium, and refrigerant astringent to other inflamed parts;

ingredient in the compound astringent application to the urethra in gonorrhœa. Dose for the suppression of hemorrhage, from internal organs, 2 grains, combined with some preparation of opium.

SULPHATE OF ZINC—ZINCI SULPHAS.

Before described, under the heads of emetics and nervous tonics, and requires to be alluded to in this place, only as an astringent. Not much use internally; particularly useful as a Collyrium, in a form of apthalmia, affecting the tarsi; may be useful in the latter stages of any form of inflammation of the conjunctiva; valuable in gonorrhœa, and in chronic ulcers. Dose, when given internally, as an astringent, 2 grains.

CLASS II.

RUBEFACIENTS.

This class of remedies embraces those local applications, that produce redness of the skin. These, as well as other means, hereafter to be mentioned, under this division of remedial agents, operate upon the principle of revulsion and counter-irritation, than which, no action is more important, in the treatment of disease.

Rubefacients, not only affect the circulatory system, by inviting blood to the part thus artificially excited, but by inducing nervous irritation at a new point, very materially modify the condition of the nervous system.

They are useful in the various forms of local inflammation of internal organs, and painful affections of the nerves themselves, or of derangement of their functions, by other organic disease. They are placed over the internal disease, when used their for counter-irritant effect, and in a distant part of the body from the local excitement or congestion, for their revulsive action.

MUSTARD—SINAPIS.

The seeds of *Sinapis Alba*, and *Sinapis Niger*, well known plants, cultivated extensively, as an article of diet and medicine; manner of preparing the seeds for use; mode of application, and time required for their effects upon the skin; one of the best rubefacients; interferes with the action of a blister, if not applied soon after the mustard is taken off.

OIL OF TURPENTINE—OLEUM TEREBINTHINÆ.

Before described; less painful in its action than mustard, and therefore more suitable for children and irritable females; mode of application; special forms of disease in which it is particularly useful.

AQUA AMMONIÆ—LIQUOR AMMONIÆ.

Rarely applied for its rubefacient effect uncombined with other substances.

Liniment of Ammonia—Linimentum Ammoniæ—is the form in which ammonia is best used to excite the skin; manner of application; particularly useful in rheumatic and other chronic diseases.

Dry Cupping, the application of *heat* and *friction* are also used for this purpose; best manner of applying heat; conditions best suited to friction, cupping and warm applications.

CLASS III.

EPISPASTICS.

Any substance which, when applied to the skin, causes sufficient excitement to produce vesication, may be termed an epispastic. All the good effects of rubefacients are realized from a blister, and the additional advantages of local depletion or the establishment of a drain, and permanence of effect.

On account of the tardiness of the action of most epispastics, compared with rubefacients, it is sometimes necessary to precede the former with the latter.

CERATE OF SPANISH FLIES—CERATUM CANTHARIDIS.

This is the common blistering plaster, as it is improperly called. It can be applied without the aid of heat, and is therefore not a *plaster*. Manner of spreading a blister, and length of time required for its action.

Cantharidin, the active ingredient of Spanish flies, and that by which vesication is produced, is obtained, and used as a vesicant in the form of *blistering cloth* and *blistering paper*, which may be used with less danger of producing strangury or excessive irritation than the ordinary cerate. A solution of Cantharidin in Collodion, called *Cantharidin Cullodion*, is sometimes used for blistering. It is not so speedy in its action as the other preparations of flies, but possesses the advantage of readily adhering to the part, by merely applying it to the skin with a brush. *Aqua Ammoniæ* is used as an epispastic as well as rubefacient, and by confining it to the part by some means which will prevent evaporation, complete vesication will be produced in a few moments.

CLASS IV.

ESCHAROTICS.

There are substances, which, when applied to the animal tissue, produce destruction of the part, from which is thrown off an eschar. Cauteries, both actual and potential, as they have been termed, when applied for the destruction of the organization of the parts to which they are applied, become escharotics. The hot iron, actual cautery, is used, generally, with this view; the same may be said of caustic potash; both of which come under the term cautery. Nitrate of silver

even, in many of its applications, acts as an escharotic, destroying unprotected, tender, or fungus organizations.

The above named articles, with *alumen exsiccatum*, or burnt alum, and the mineral acids, are the principal substances used as escharotics, and are called cauteries, when applied so as to produce only a slight impression.

This class not only affects diseases on the principle of revulsion and counter-irritation, but is often brought into requisition for the alterative effect upon illconditioned ulcers, and chronic inflammation in various parts of the body.

CLASS V.

DEMULCENTS.

These are mechanical agents, intended to protect irritable and inflamed surfaces from the air, and other exciting or irritating substances. Although possessed of no direct medicinal virtues, apart from this mechanical agency, demulcents are in many instances valuable remedial means.

Remedies belonging to this class are useful in inflammatory conditions of the various mucous surfaces, particularly that of the alimentary canal, and in abrasions of the surface of the body. An infusion or solution of demulcent articles is called *mucilage*.

GUM ARABIC—ACACIA.

The concrete juice of *Acacia vera*, a tree of ordinary size, found in Africa, and of other species of Acacia. Sensible properties; more conveniently used in the pulverized form; liability to become moist by the absorption of moisture from the atmosphere in this form, and become a hardened mass. Taken *ad libitum*.

FLAX SEED—LINUM.

The seeds of *Linum usitatissimum*, a well known plant, cultivated extensively in various parts of the world.

An infusion made from the seeds affords a useful demulcent, said to be particularly useful in nephritic and urethral inflammations.

SLIPPERY-ELM BARK—ULMUS.

The inner bark of *Ulmus fulvus*, a lofty, well-known tree. In the form of infusion *slippery elm* is a valuable demulcent.

The various species of *Lichen* are demulcent, and are usefnl articles where mucilaginous drinks are required, particularly that of *Iceland Moss*.

CLASS VI.

EMOLIENTS.

These are intended for external application, in ferunculous and other local diseases, and are used for the purpose of relaxing and softening the parts, by the warmth and moisture they afford. Poultices, as they are commonly called, are generally made of flax-seed, pulv. elm, &c.