

THERAPEUTICS.

Veratrum is inferior to Aconite in most of the fevers and inflammations, by reason of its lacking power over excretion. It renders good service in the early stages of many parenchymatous and serous inflammations when occurring in sthenic subjects, especially pneumonia. It is highly esteemed in puerperal fever and in simple hypertrophy, irritable heart and other cardiac disorders. It has been used with remarkably good results in acute mania and puerperal convulsions, and is of service in aneurism to depress the circulation to the lowest point, but in this case the recumbent position must be strictly observed in order to secure safety. It should always be administered in small doses and its effects carefully watched. In puerperal eclampsia large doses have been administered without danger and with decided benefit, as much as 20 drops of Norwood's tincture every hour for 5 consecutive days and nights in one case, the patient making a good recovery. The same preparation may be given hypodermically, in doses of m ij-iv .

Veratrine is chiefly used externally. The ointment or oleate is applied with benefit in many cases of superficial neuralgia, myalgia and headaches, a small quantity being rubbed in over the seat of the pain. It may be absorbed through an abrasion of the cuticle and give rise to dangerous symptoms. Internally it has been employed as a cardiac sedative in fevers and inflammation, also in acute articular rheumatism, dropsies, dysmenorrhea and various nervous affections, but its uncertainty of action and the dangerous depression which it may produce have caused it to lose favor as an internal remedy.

VERBASCUM, Mullein (Unofficial),—the leaves of *Verbascum Thapsus*, the Mullein-weed, a plant of the nat. ord. Scrophulariaceæ, having large woolly leaves and yellow flowers in dense spikes. Its chief constituent is mucilage, but the flowers contain an oil in very small quantity. An infusion of ʒiv of fresh leaves to the pint of milk is the form in which it has generally been given; a pint to be taken thrice daily.

Mullein is emollient and demulcent, perhaps also slightly anodyne. It has long been a popular Irish remedy in pulmonary affections. Under its use the weight steadily increases in phthisis and other wasting disorders, while expectoration is rendered more easy, cough is palliated and the general condition improved. It is recommended in cystitis, irritable bladder, and diarrhea, and is employed as an enema in dysentery and as a poultice for hemorrhoids. The dried leaves may be smoked with benefit in aphonia from laryngeal irritation.

VIBURNUM OPULUS, (Cramp Bark),—is the dried bark of *Viburnum Opulus*, a shrub of the nat. ord. Caprifoliaceæ. Dose, gr. x-xlv [av. gr. xxx].

Fluidextractum Viburni Opuli, Fluidextract of Viburnum Opulus. Dose, ʒx-xlv [av. ʒxxx].

Viburnum Opulus is highly valued by many practitioners as a remedy for uterine and abdominal pains. The so-called *Viburnum Compound of Dr. Hayden* is stated by its manufacturers to consist of "the active principles of the Viburnum Opulus, Dioscorea Villosa, Scutellaria Lateriflora, and a combination of aromatics, prepared by a process peculiar to ourselves." This they call publishing the formula of the preparation.

VIBURNUM PRUNIFOLIUM (Black Haw),—is the dried bark of the root of *Viburnum Prunifolium*, or of *Viburnum Lentago*, indigenous shrubs of the nat. ord. Caprifoliaceæ. It contains tannic, oxalic, citric and malic acids, sulphates and chlorides; also two resins, one

named *Viburnin*, and *Viburnic Acid* which is identical with Valeric Acid. Dose, gr. x-xlv [av. gr. xxx].

Fluidextractum Viburni Prunifolii, Fluidextract of Vib. Prun. Dose, ʒx-xlv [av. ʒxxx].

Viburnum Prunifolium is considered to possess nervine, antispasmodic, astringent, diuretic and tonic properties, and to be especially useful in preventing abortion, in the nervous diseases of pregnancy, and in spasmodic dysmenorrhea. It may be administered with cannabis indica, morphine, nerve-sedatives or simple aromatics. No exact observations have been made regarding its action, and its therapeutical claims are denied by many who have used it. It often excites nausea and vomiting.

VIOLA TRICOLOR, Pansy (Unofficial),—is the wild-grown, flowering herb of *Viola tricolor*, the Heart's-ease Pansy, a plant of the nat. ord. Violaceæ, native in Europe, but naturalized in the southern United States. It contains an active alkaloid, *Violine*, allied in many respects to Emetine, and poisonous. Dose, gr. x-ʒj, in decoction.

Viola is mucilaginous, emollient, expectorant and slightly laxative. Its active principle is emeto-cathartic, but exists in very small quantity. A decoction of the fresh herb in milk, with a poultice of the same, was formerly recommended highly in crusta lactea and impetigo. It is used with benefit in some forms of eczema, especially in that of the head and face, and has had some reputation in bronchitis and constitutional syphilis. An infusion and a poultice of the leaves have been used locally in cancer, with some reported success.

Viola Cucullata, the common Violet, is used in Pennsylvania with success as an internal antidote against rattlesnake venom. The leaves are eaten, and a poultice of salt and indigo is applied to the wound.

VISCUM, Mistletoe (Unofficial),—occurs in two species, *Viscum album*, the European Mistletoe, a small, parasitic, evergreen shrub, of the nat. ord. Loranthaceæ, growing chiefly on deciduous-leaved trees, and *Viscum flavescens*, the American species, growing on oaks, elms, etc. They contain mucilage, starch, fixed oil, resin, salts, and *Viscin*, or Bird-lime, which occurs also in *Ilex aquifolium*, *Gentiana lutea* and other plants. Dose, gr. x-ʒj in decoction, or ʒv-xxx of a ten per cent. tincture.

The berries of the mistletoes have produced emeto-catharsis, with great thirst, tenesmus, bloody stools, convulsions and even death in young children. The leaves and twigs have been used in epilepsy, hysteria, chorea, asthma and other nervous affections. The American plant is asserted to possess qualities similar to those of Digitalis and to incite uterine contractions. It has been used in cardiac affections, dropsies, uterine hemorrhages and amenorrhea, also as an abortifacient.

XANTHOXYLUM, Xanthoxylum, (Prickly Ash),—is the dried bark of *Xanthoxylum americanum* the northern species, or of *Fagara Clava-Herculis* the southern species, of an indigenous shrub of the nat. ord. Rutaceæ. It contains an acrid, green oil, tannic acid in small quantity, two resins, and the alkaloid *Xanthoxyline*, which is probably identical with Berberine. Dose of the powdered bark, gr. x-xlv [av. gr. xxx].

Preparations.

Fluidextractum Xanthoxyli, Fluidextract of Xanthoxylum.—Dose, ʒx-xlv [av. ʒxxx].

Decoctum Xanthoxyli, Decoction of Xanthoxylum (Unofficial),— ʒj to the quart. Dose, a pint during 24 hours in divided doses.

PHYSIOLOGICAL ACTION AND THERAPEUTICS.

Xanthoxylum is a stimulant and aromatic bitter, a local and systemic sialogogue, also diaphoretic, diuretic and emmenagogue. Its taste is aromatic, soon becoming acrid and bitter, causing profuse salivation, tingling in the tongue and increased secretion from the stomach, intestines, liver and pancreas. It

increases the cardiac action and raises the arterial tension, and is classed among the vegetable alteratives with mezereum, guaiac and stillingia.

Xanthoxylum is highly valued in chronic rheumatism, myalgia, lumbago and similar disorders, also in jaundice from catarrh of the bile-ducts, in dropsies and chronic pharyngitis. It is one of the constituents of McDade's Succus Alterans (see page 466), a preparation which has considerable reputation among southern physicians in cases of chronic syphilis. In old cases of pharyngitis, the mucous membrane being glazed and dry, the decoction may be used as a gargle and $\text{m} \times$ -xxx of the fluidextract taken internally thrice daily. The bark, used as a masticatory, is a popular remedy for toothache and has been frequently successful in paralysis of the tongue.

YOHIMBINE (Unofficial),—is an alkaloid obtained from the bark of the Cameroon tree, indigenous to East Africa. It is highly aphrodisiac and a powerful local anesthetic. It is efficient in pure forms of sexual impotence, but not in those due to constitutional or organic disease, and has slight influence in persons of advanced years. It is contraindicated in all acute and chronic inflammations and hyperemia of the abdominal and pelvic viscera. As an anesthetic it acts efficiently when applied directly to a nerve or to the mucous membrane, but produces local hyperemia instead of the anemia caused by cocaine. It is readily decomposed by light, hence its solutions should be kept in amber-colored bottles and in a dark place. Dose, gr. $\frac{1}{10}$ - $\frac{1}{8}$, or $\text{m} \times$ -viii of a 2 per cent. solution, gradually increased to $\text{m} \times$ xvj.

ZEA, Zea, (Corn Silk),—is the fresh styles and stigmas of *Zea Mays*, the Maize or Indian Corn, nat. ord. Gramineæ. It contains *Maizenic Acid*, a fixed oil, resins and salts. Dose of a fluidextract, \mathfrak{z} j-ij; of an infusion (1 to 8), \mathfrak{z} iv-vii, almost *ad libitum*. There are no official preparations.

Zea is a certain but mild diuretic when given in full doses at short intervals. It is by some observers considered demulcent and anodyne, and is generally believed to have a specific or alterative influence over many disorders of the genito-urinary passages and the urinary bladder. It has been used with success for incontinence of urine, uric and phosphatic gravel, gout, rheumatism, urethritis, pyelitis, acute and chronic cystitis, cardiac dropsy and obstructive valvular disease of the heart.

ZINCUM, Zinc, Zn,—is metallic Zinc, in the form of thin sheets or irregular, granulated pieces, a bluish-white metal, having the sp. gr. 6.9. It occurs native as *Blende* a sulphide, *Calamine* a carbonate, *Zincite* a red oxide, *Franklinite* a mixture of the oxide with that of iron and manganese; also as a silicate. The metal is soluble in the weakest acids and therefore should never be used for culinary vessels. Its salts are all more or less actively poisonous. Metallic Zinc is official but is not employed as a medicine.

Zinc Salts and their Preparations.

Zinci Acetas, Zinc Acetate, $\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2 + 2\text{H}_2\text{O}$,—soft, white, micaceous or pearly, six-sided tablets or scales, somewhat efflorescent in dry air, of faintly acetous odor, sharp metallic taste and a slightly acid reaction; soluble in 3 of water and in 36 of alcohol at 59° F.

in 1½ of boiling water and in 3 of boiling alcohol. Used locally as an astringent in solution of gr. j or ij to the \mathfrak{z} , or internally in doses of gr. $\frac{1}{2}$ -ij [av. gr. ij].

Zinci Carbonas Præcipitatus, Precipitated Zinc Carbonate,—a white, impalpable powder, permanent in the air, odorless and tasteless, insoluble in water or alcohol, but soluble in acids with copious effervescence. Used locally as a protective.

Zinci Chloridum, Zinc Chloride, ZnCl_2 ,—a white, granular powder, or porcelain-like masses, odorless, of intensely caustic properties; very soluble in water and in alcohol; very deliquescent. Is tonic and escharotic. For internal use a solution in Spirit of Ether is the most convenient form, strength \mathfrak{z} j to the \mathfrak{z} , of which four to eight minims may be given twice daily in water. Strength of injections and collyria, gr. j-ij to the \mathfrak{z} .

Liquor Zinci Chloridi, Solution of Zinc Chloride,—is an aqueous solution, containing about 50 per cent. of the salt. A clear, colorless, odorless liquid, of a very astringent, sweetish taste and an acid reaction. A powerful disinfectant for sinks, drains, etc. Used also as an injection in gonorrhœa, leucorrhœa, etc., in dilute solution, $\frac{1}{2}$ to 1 per cent. *Burnett's Disinfecting Fluid* is similar to the above but slightly stronger.

Zinci Iodidum, Zinc Iodide, ZnI_2 ,—a white, granular powder, very deliquescent, of sharp, saline and metallic taste and acid reaction; very soluble in water and in alcohol. Dose, gr. ss-ij [av. gr. j], in syrup.

Zinci Oxidum, Zinc Oxide, ZnO ,—an amorphous, white powder, odorless and tasteless; insoluble in water or alcohol; soluble without effervescence in dilute acids also in ammonia water. Dose, gr. j-x [av. gr. iv], in pill.

Unguentum Zinci Oxidi, Ointment of Zinc Oxide,—has of Zinc Oxide 20, Benzoinated Lard 80.

Zinci Phenolsulphonas, Zinc Phenolsulphonate, (Zinc Sulpho-carbolate),—colorless, transparent, rhombic prisms, very soluble in water and in alcohol. Dose, gr. j-v [av. gr. ij].

Zinci Stearas, Zinc Stearate,—a very fine, white, unctuous powder, insoluble in water, alcohol or ether. Used locally as a dressing powder and a vehicle for dry antiseptics.

Unguentum Zinci Stearatis, Ointment of Zinc Stearate,—strength 50 per cent., made with White Petrolatum.

Zinci Sulphas, Zinc Sulphate, $\text{ZnSO}_4 + 7\text{H}_2\text{O}$,—colorless, rhombic crystals, of astringent metallic taste, and acid reaction; soluble in 0.6 of water, insoluble in alcohol. Dose, as emetic, gr. x-xx [av. gr. xv]; as a tonic and astringent, gr. $\frac{1}{10}$ -ij in pill.

Zinci Valeras, Zinc Valerate, (Zinc Valerianate),—white, pearly scales, having the odor of valeric acid, and a sweetish, metallic taste; soluble in about 50 of water and in about 35 of alcohol. Dose, gr. $\frac{1}{4}$ -gr. iv [av. gr. ij], in pill.

Zinol, (Unofficial)—is the trade name of a preparation composed of Zinc Acetate 1, Albumin Naphtho-sulphonate 4 parts, which is used in aqueous solution, gr. j-ij to the \mathfrak{z} , as an injection for gonorrhœa.

The Bromide is described under BROMUM.

Incompatibles.

Incompatible with *Zinc Salts* are: Acacia, Alkalies, Arsenates, Carbonates, Cyanides, Lead Acetate with Zinc Sulphate in solution, Lime-water, Milk, Oxalates, Phosphates, Sulphates, Sulphides, Vegetable astringent decoctions and infusions.

PHYSIOLOGICAL ACTION.

Zinc Salts are astringents, but milder ones than the salts of lead. Its soluble compounds (the chloride, iodide, sulphate and acetate) are corrosive poisons, causing violent gastro-enteritis and in some cases profound nervous depression. The Chloride is a powerful and painful escharotic or rather mummifier of the tissues, having great affinity for water, coagulating albumin and shrivelling the vessels. It is not a very active disinfectant. The Sulphate is an escharotic and a specific emetic, acting promptly by direct irritation of the stomach, without much depression or after-nausea. In small doses it is tonic and astringent, in larger ones it would be a severe irritant but for its causing prompt emesis.

The Acetate resembles the sulphate in action. The Oxide used externally is a mild, soothing astringent; used internally it enters the blood as a lactate or chloride, acting as a mild astringent and a nervous sedative. Being almost insoluble in the stomach, it has but feeble diffusive power and consequently but slight activity. The Carbonate resembles the oxide in action. The Iodide locally is a powerful escharotic and has been supposed to possess some alterative power when given internally, in addition to its astringent qualities as a zinc salt. The Stearate is feebly antiseptic but strongly astringent. The Valerate acts as a nervous sedative, but its properties are in all probability due to its zinc base and not to the acid combined with it.

The continued use of Zinc salts produces symptoms similar to those of chronic lead-poisoning, but of much less gravity. These salts manifest less tendency to accumulate in the system than other metallic salts and are excreted much more rapidly. Elimination takes place chiefly by the liver and intestinal glands.

The action of the Bromide is described under the title BROMUM.

THERAPEUTICS.

Zinc salts are chiefly employed in weak solution as mild astringent applications in catarrhs of mucous membranes, as conjunctivitis and urethritis, also as unguents and lotions in skin diseases, particularly eczema, impetigo, herpes and erythema. The Chloride is made into a paste with flour and glycerin for the destruction of lupus, epithelioma and other morbid growths, also for opening abscesses in locations where puncture or incision might be dangerous. The cuticle, if unbroken, should be removed by strong water of ammonia before the paste is applied, as it will not act through the epidermic tissue. It is a commonly used disinfectant and deodorant, and in weak solution (℥iij-v of the liquor to ℥j of water) makes a good lotion for putrid ulcers. A solution of gr. j-iiij to the ℥ is an excellent injection for gonorrhœa, and one of gr. ij to the ℥ is one of the best applications for purulent ophthalmia in the infant or adult. The Iodide is not employed as an escharotic, nor has it ever been a favorite remedy for internal use. It is chiefly employed in solution as an application to enlarged tonsils, and as an ointment (1 part to 8 of lard) for the reduction of glandular enlargements. The Sulphate is used locally as an astringent to mucous surfaces generally, internally as an emetic in narcotic poisoning and croup, and in small doses as a tonic and antispasmodic in convulsive diseases, as chorea, hysteria, epilepsy, angina pectoris and asthma. In diarrheas and dysentery it is a good astringent and is frequently combined with opium and ipecac. In weak solution, gr. j-ij to the ℥, it is the standard astringent injection for gonorrhœa after the subsidence of the acute stage. The Acetate is used for the same purposes as the sulphate, but is usually preferred for collyria. The Oxide may be employed as a dusting powder in intertrigo, also as an ointment in eczema and excoriated surfaces generally. In combination with bismuth

and pepsin it is an excellent remedy for the summer diarrhea of children, and with aromatic powder and morphine it is very efficient in gastralgia. It is a good remedy in 3-grain doses for the night-sweats of phthisis, and has been successfully employed in epilepsy and neuralgia, in whooping-cough, hysteria and nervous headache, and in bronchorrhea to check the profuse secretion. It is much employed as an ingredient of cosmetics. The Carbonate is by some preferred to the oxide for local use in skin diseases. Calamine Ointment, which is a mixture of the impure carbonate (calamine) with the oxide and an unguent basis, was until recently a favorite application as a soothing protective to abrasions and inflammations of the integument. The Phenolsulphonate is used as an astringent and antiseptic for indolent or foul ulcers, and in solutions somewhat stronger than those of the sulphate locally for subacute inflammations of mucous membranes. Internally it has been used with great satisfaction as a remedy for cholera infantum. The Valerate is employed in chorea, epilepsy, neuralgia, and various anomalous nervous affections, such as the nervous headache of hysterical women, nervous coughs and aphonia due to uterine and ovarian irritation. The Stearate is an excellent dusting and insufflating powder, much used in rhinological practice and in the treatment of gonorrhœa. It may be mixed with boric acid, eucrophen, menthol, chrysarobin, salicylic acid, and other antiseptics, for use in intertrigo, burns, eczema, coryza, hay fever and many other local affections.

ZINGIBER, Ginger,—is the dried rhizome of *Zingiber officinale*, a plant of the nat. ord. Zingiberaceæ, having dingy-yellow flowers on a leafless flower-stalk and long, lanceolate leaves on a separate stem. The plant is a native of India, but is cultivated in Jamaica, Sierra Leone, and other tropical countries. The rhizome occurs in irregularly branched pieces, laterally compressed, of agreeably aromatic odor, and pungent aromatic taste. *Green Ginger* is the fresh rhizome, *Black Ginger* is the dried rhizome with its epidermis on; *White* or *Jamaica Ginger* is the dried rhizome deprived of its epidermis. It is most active when fresh, becoming inert by the action of age and exposure. Its active principles are a soft, acrid and aromatic *Resin*, and a yellow, pungent *Volatile Oil*. Dose, gr. x-xxx [av. gr. xv.]

Preparations.

Fluidextractum Zingiberis, Fluidextract of Ginger,—alcoholic. Dose, ℥x-xxx [av. ℥xv]. *Essence of Ginger* is an unofficial alcoholic preparation of various strengths, generally about 1 in 2, sometimes 1 in 1 as the fluidextract.

Tinctura Zingiberis, Tincture of Ginger,—20 per cent. Dose, ℥x-℥j [av. ℥xxx].

Syrupus Zingiberis, Syrup of Ginger,—has of the Fluidextract 3 per cent. in sugar and water. Dose, ℥j-℥j [av. ℥iv].

Oleoresina Zingiberis, Oleoresin of Ginger,—is extracted by acetone and contains all the virtues of the root. Dose, gr. ss-j [av. gr. ss.]

Trochisci Zingiberis, Troches of Ginger, (Unofficial),—each troche contains about 2 minims of the Tincture, also Tragacanth, Sugar, and Syrup of Ginger. Dose, j-v troches.

Ginger is a constituent of Pulvis Aromaticus (see page 237), and Pulvis Rhei Compositus; also through the former it is an ingredient of Pilulæ Aloes et Ferri, and Pilulæ Aloes et Myrrha. The tincture is used in preparing Aromatic Sulphuric Acid.

PHYSIOLOGICAL ACTION AND THERAPEUTICS.

Ginger is sialogogue when chewed, sternutatory when inhaled, and externally a rubefacient. Internally it is a grateful stimulant and carminative, produces a sensation of warmth at the epigastrium, promotes the expulsion of flatus, and reflexly stimulates the heart and the central nervous system. In large doses it is a gastro-intestinal irritant. It is used in domestic medicine as a stimulant carminative in colic, also in hot water for the cramps of suppressed menstruation due to exposure to cold. It may be employed with advantage in flatulence and atonic dyspepsia, in the latter being usually combined with other remedies. Though decidedly constipating by itself the Oleoresin is frequently used in purgative pills, to prevent griping; also as a stimulant ingredient of tonic pills. The troches are employed to increase the secretion of saliva, also in relaxed conditions of the throat; and the syrup is a favorite flavoring ingredient for prescriptions. Preserved Ginger is a favorite condiment, and carbonated water flavored with ginger is a common beverage under the name "ginger ale."

Ginger Beer is a favorite temperance beverage, but most of the preparations sold under its name are simply carbonated water flavored with ginger. The following recipe is furnished by Dr. William Hardman, of Blackpool, in whose family it has been used for over fifty years, and the excellence of which he guarantees:

Take $1\frac{1}{2}$ oz. of the best ginger well bruised, 1 oz. of cream of tartar, and $1\frac{1}{2}$ lb. of cane loaf sugar. Put all the ingredients into an earthen vessel and pour on a gallon of boiling water; when nearly cold add a gill of yeast, cover over with a blanket and let it stand in a warm place until next morning. Then skim it and run it through a filtering bag, bottle it, cork well with good corks and tie down the corks with string. In three days it will be fit for use. The bottles must be clean and sweet. A little lemon juice is considered an improvement by some. (*Lancet.*)

PART II.

PHARMACY AND PRESCRIPTION WRITING.

Pharmacy (*φάρμακον*, a drug or medicament),—may be defined as the art of selecting and preserving medicines, and preparing them for administration. It may be divided into—

Official or Galenical Pharmacy,—dealing with the processes and preparations of the Pharmacopœia; and—

Extemporaneous or Magistral Pharmacy,—which includes the operations of compounding and dispensing remedies as directed in the extemporaneous prescriptions of physicians.

PHARMACOPŒIAS AND DISPENSATORIES.

A **Pharmacopœia** is an official list of the drugs and their preparations recognized by the medical profession of a certain country. In other countries the Pharmacopœia is published under government auspices and has the force of a legal standard; in the United States its publication is left to the medical and pharmaceutical professions and it is revised every ten years by a convention called for that purpose. The official Pharmacopœias in the English languages, with the dates of their latest revision or additions, are as follows, viz.—

The Pharmacopœia of the United States of America, 8th Decennial Revision, 1900; official from September 1, 1905.

The British Pharmacopœia, 1898.

Besides the above there are—The Pharmacopœia Germanica; the Pharmacopée Française (*Codex Medicamentarius*); the Austrian, *Pharmacopœia Austriaca*; Russian, Ph. Rossica; the Swedish, Ph. Suecica, the Norwegian, Ph. Norvegica; the Danish, Ph. Danica; the Belgian, Ph. Belgica; the Swiss, Ph. Helvetica; the Spanish, *Farmacopea Española*; the Portuguese, Ph. Portugueza; the Indian, Ph. of India; the Hungarian, Ph. Hungarica; the Netherlands', Ph. Neerlandica; the Roumanian, Ph. România; the Finnish, Ph. Finnica; the Chilian, *Farmacopea Chilena*; the Greek, Ph. Hellenica; the Japanese, Ph. Japonica; the Mexican, *Neuva Farmacopea Mexicana*; the Croatia-Slavonian, Ph. Croatico-Slavonica; and the Italian, *Farmacopea Italiana*.

A **Dispensatory** is a commentary on one or more pharmacopœias, giving the physical and medicinal history of drugs and preparations, with their doses, physiological action and therapeutics, and includes similar information about many drugs which are not official in any pharmacopœia but are of occasional use or general interest. A dispensatory is a private publication, of authority