

GROUP IV.
Agents Acting upon the Stomach.

CHAPTER I.

**Agents which Increase the Normal Functional
Activity of the Stomach—Stomachics.**

COLLINSONIA
CALUMBA
GENTIAN
CROCUS
GLYCERINE
EUPATORIUM
LYCOPodium
QUASSIA
SUMACH
CORNUS

Note—Among the agents of the second and third divisions of the first group of remedies in this book are several such as *nux vomica*, strychnine, *capsicum*, *zanthoxylum*, *hydrastis*, quinine, and *avena*, which serve a first purpose as stomach tonics although otherwise classed. Three or four of the above named remedies have been popular as such in the entire profession for many years. Other than these, the remedies here included in this and the following chapter although presented at some length, are mild in their action and possess properties, which are without doubt included in the influence of the remedies first above referred to, which possess an essentially wider and more positive influence.

There is great similarity in the action of such remedies as *cornus florida*, *ptelia*, *liatris*, *frasera*, *asarum*, and others of this character, which is mild throughout the entire field of their operation. They have no pronounced action.

Those in this first chapter at least have specific individual peculiarities that make them distinctive.

In the administration of the pure stomach tonics, if the indications for

an acid are present, as shown by deep-red membranes, and a dark, narrow thin tongue, the agents of this group are best given in conjunction with hydrochloric or nitro-hydrochloric acid, or if the indications are those described in the specific symptomatology of this agent, indicating an excess of acids, certain alkaline remedies, as the sodium, potassium or ammonium salts, will increase the influence of these vegetable tonics.

COLLINSONIA.

Collinsonia canadensis.

Synonym—Stone Root.

CONSTITUENTS—

Volatile oil, resin.

PREPARATIONS—

Specific Medicine Collinsonia. Dose, from one to sixty minims.

Extractum Collinsoniae Fluidum, Fluid Extract of Collinsonia.

Dose, from two to fifteen minims.

Tincture Collinsoniae, Tincture of Collinsonia. Dose, from five to thirty minims.

All preparations should be made from the green plant.

Physiological Action—*Collinsonia*, stimulates the stomach, promoting its own absorption. It is actively tonic in its influence upon the entire function of this organ, and from this influence its beneficial action is exercised upon the function of all the vital organs.

Collinsonia acts as a tonic to enfeebled muscular structure of the heart. It is conspicuous in its ability to overcome relaxed and out of tone conditions of the walls of the veins. It has a direct influence upon atonic and dilated or otherwise impaired conditions of the veins and arteries.

Specific Symptomatology—In **piles** with a sense of fullness, or of a foreign body in the rectum, in all relaxed conditions of the mucous membranes of the lower bowel, *collinsonia* is the remedy. It works more promptly if there is passive congestion with blueness or dark discoloration of the membranes, showing imperfect venous capillary

circulation.

Collinsonia is given where there is a sensation of constriction, heat and weight in the rectum; where there is deficient secretion from imperfect capillary circulation in the mucous membranes, the patient passing the feces in the form of dry scybala.

Therapy—It is a specific remedy for **hemorrhoids**. If they are of recent origin they can be cured in a comparatively short time with this agent. The most intractable cases will be relieved and permanently benefited by its persistent use. There is no therapeutic influence more reliable than this. I have relied upon it for years.

In **catarrhal gastritis**, where the circulation is defective, *collinsonia*, either alone or combined with *hydrastis*, is of first importance. These agents combined improve the tone of the stomach, strengthening its walls and its mucous membranes, and increasing the strength and character of its glandular structure. They increase the appetite and greatly improve the digestion and assimilation of food.

This combination is a superb general tonic in relaxed and debilitated conditions, and combined with iron can hardly be excelled.

Acute inflammations do not promptly yield to *collinsonia*, although it is an excellent auxiliary to the indicated treatment.

When **piles** are operated upon, this remedy may be given before and after the operation to most excellent advantage. The author has cured many cases by combining equal parts of the fluid extracts of *collinsonia* and *hamamelis virginica*, and giving from twenty to thirty drops of the mixed extracts every two hours. The distilled extract of *hamamelis* can be injected into the rectum, or kept in contact with the external piles by a compress, especially during sleep. Or an occasional application of the liquor of the persulphate of iron in full strength can be made to stubborn external piles.

Collinsonia is of great value in the hemorrhoids of the pregnant female, with imperfect venous circulation in the pelvic viscera.

Pain in the rectum from whatever cause, especially pain not attributable to a definite cause, and pain after surgical operations or a

sensation of weight, constriction and general uneasiness in the rectum are quickly and more or less permanently relieved by *collinsonia*. In pain in the lower bowels, persistent and steady, *collinsonia* is specific. Either single full doses, or doses of five minims of the tincture every ten minutes, should be given in water. It is superior to *opium* in some cases.

Collinsonia is a **heart tonic** of direct and permanent influence. It does not seem to stimulate the heart to sudden action, but its continued use induces steady, permanent and highly satisfactory improvement in the strength and character of the organ, and a correspondingly improved general circulation.

It is valuable when the heart is debilitated from protracted fevers, or from **rheumatic inflammation** or from overstrain. It will be found excellent in the **bicycle heart**, in conjunction with small doses of *cactus grand*.

In chronic **laryngitis** or **pharyngitis**, with relaxed walls of the larynx, with dark discoloration and enfeebled capillary circulation, *collinsonia* exercises a specific influence, especially in the condition known as **clergyman's sore throat**, caused or increased by the use of the voice.

In atonic conditions of the circulation of a local character, where **passive hemorrhages** are of frequent occurrence without apparent cause, where there is increasing debility, *collinsonia* and *hamamelis* in conjunction given as above indicated are positively curative.

I have made some important observations within the last five years, and have collected the observations of others, which must be added to our knowledge of this remedy. Guided by its influence upon the walls of the veins, I have given it in large doses persistently in the treatment of **varicocele**, and have obtained satisfactory results. I would advise that it be given in the early stage of this difficulty, and if the condition is anticipated in boys, or youth at the age of puberty, the patient may be put on this remedy and kept on it, for some time.

My suggestions concerning its positive action in **hemorrhoids** alone, or combined with *hamamelis*, as may be indicated, have been acted upon by very many physicians who have reported brilliant results, and an increasing confidence in the remedy.

This agent having a specific influence as suggested above, upon the walls of both the veins and the arterioles has been my most reliable remedy in the treatment of **varicosis**. This may be general or local, it may be permanent or temporary, as in pregnancy. I have had admirable results with this and *hamamelis* combined in the treatment of extreme cases of **varicosis of the vaginal walls** and pudenda, during pregnancy. Cases which would certainly otherwise have demanded an operation before delivery for the patient's safety, were cured fully before delivery with no complicating influences. I would prize it most highly for this result alone.

I had under observation, for a short time, the worst case of **epilepsy** it has ever been my lot to treat. The paroxysms, if the patient was not saturated with medicine, would occur many times a day. The patient's mind ultimately became a blank.

The paroxysms were completely controlled during a period of nearly two years, by tablespoonful doses of the fluid extract of *collinsonia* three or four times daily. Given at the beginning of an attack, it would ward off the attack.

I have not been able to find many other physicians who have made any observation of the remedy in the control of convulsions, but it certainly exercised that influence in this case, and therefore should be used in similar cases, and the results reported. It acted in every way similar to the bromides for which it was given as a substitute.

Other writers attribute anti-spasmodic properties to *collinsonia*. In the treatment of **chorea**, some writers have given it with excellent results, believing it to be superior to cimicifuga or arsenic in this disease.

In subacute proctitis, and **muco-enteritis**, with **dysentery**, or following dysentery, or when dysenteric phenomena are present during cholera **infantum** with pain or inflammation in the rectum, this agent is important.

Where operations have been performed upon the rectum for **ulcers**, **piles**, **fistula**, or the removal of pockets, the consequent soreness is directly relieved with full doses of *collinsonia*. Pain in the rectum that cannot be attributed to any given cause can be relieved by *collinsonia*.

Dr. Scudder advised the use of this agent in small doses. I have been obliged to give it in doses of from ten to twenty minims to secure the desired results. I am confident that the larger dosage will give more satisfaction.

Foltz employed this agent where there was **inflammation** in the **middle ear**, when there was **follicular pharyngitis** is and hypertrophy of the glands of the throat. Chronic thickening of these membranes with enlarged capillaries, will be relieved by it.

Shoemaker extols *collinsonia* in the treatment of **acute cystitis**. Combined with *aconite*, he has excellent results, In some cases he combines it with narcotics, and uses it as a rectal or vaginal injection, or it may be incorporated in a suppository for this purpose. It promptly relieves **spasms** of the **sphincters** and **vaginismus**.

CALUMBA.

Jateorrhiza palmata.

Synonyms—Columbo, Columba.

CONSTITUENTS—

Calumbin, a white, bitter, crystalline principle. Berberine., the alkaloid, identical with the alkaloid of *Berberis Vulgaris*, Calumbic acid.

PREPARATIONS—

Extractum Calumbae Fluidum, Fluid Extract of Calumba. Dose, from three to thirty minims.

Tinctura Columbae, Tincture of Calumba. Dose, from twenty to one, or even two drams.

Specific Medicine Calumba. Dose from five to thirty minims.

Physiological Action—This agent is a gastric tonic and one of the typical stomach bitters. It is believed to increase the flow of the saliva and of the gastric juice, and increases also the appetite and the power of digestion. It is an intestinal antiseptic to a limited extent and is anthelmintic.

It is similar in action to *hydrastis canadensis*, but does not extend its influence so positively to the nervous system.

Therapy—It is indicated when there is atonicity of the digestive apparatus, especially when there is any irritation whatever. In debilitating disease of the stomach or bowels it is an excellent remedy. It is restorative in fevers, improving the general nutrition by the improvement of the tone of the organs of digestion and assimilation. It is useful after protracted **diarrheas** and **dysentery**, after **cholera infantum** when a non-irritating tonic is needed, and in cholera morbus, being of benefit in promoting restoration in these cases. It will relieve the vomiting of this disease, and a few drops of the tincture will also relieve vomiting in seasickness, and has been beneficial in the vomiting of pregnancy.

It is useful in overcoming **intestinal flatus**, an infusion in inflammatory intestinal disease being most satisfactory.

In **chronic malaria** with marked intermittent fever it is valuable.

GENTIANA.

Gentiana lutea.

Synonyms—Gentian, Yellow Gentian.

CONSTITUENTS—

Gentiopierin, gentisic acid.

PREPARATIONS—

Extractum Gentianae, Extract of Gentian. Dose, from two to ten grains.

Extractum Gentianae Fluidum, Fluid Extract of Gentian. Dose, from five to thirty minims.

Specific Medicine Gentian. Dose, from five to thirty minims.

Physiological Action—Tonic in large doses, irritant, causing nausea, vomiting and diarrhea. The fresh root is more active than the dry.

Therapy—This is a popular stomachic tonic in cases where enfeeblement has occurred as the result of protracted disease. It has long been given in combination with other tonics or in wine, as an agent in the **dyspepsia** of the aged, or of gouty patients, and in the

gastric inefficiency of infants and children, and to a good advantage in **catarrhal diarrhoea**.

As a tonic to the stomach, and the other organs of digestion and appropriation, in those cases where the system is greatly debilitated by protracted disease, it is one of the best remedies, especially by exhausting fevers of malarial origin. It is of much value in malarial conditions generally and has been used to a great extent instead of quinine.

When the periodicity has been overcome by quinine this is a rapid **restorative to the system**.

The tincture of *gentian* is given freely in conjunction with other tonics and with alteratives. It is given with the tincture of iron in the treatment of **anemia** complicating **malarial disease**. It is given in conjunction with the iodide of potassium where a tonic and alterative is demanded, and given alternately with hydrocyanic or hydrochloric acid, it is sometimes of great value in the **vomiting of pregnancy**.

This agent is perhaps the most valuable of this class. It can be depended upon as a bitter tonic and constant use will establish a confidence in it.

GLYCERINUM.

Synonyms—Glycerin, Glycerine.

Physiological Action—It produces heat in the esophagus and stomach when swallowed, which to some sensitive patients is exceedingly disagreeable. In greatly excessive doses symptoms not widely different from alcoholic poisoning may be induced.

It is eliminated by the kidneys and will cause dark colored urine, the quantity of which will be greatly increased. In purges in large doses, and by abstraction of water from the tissues, a property it possesses to a high degree, will sometimes induce hydragogue catharsis, especially if introduced into the rectum.

Therapy—For internal use glycerine is antiseptic, laxative and

nutritive, taking the place of cod liver oil to a large extent with children in the latter particular. This fact is denied, but it is capable of demonstration.

It is valuable diluted with equal parts of water to moisten the dry mouth and tongue of protracted fevers, and for the removal of sordes. It prevents decomposition in the stomach and encourages secretion, and if a small quantity be added to ice water and drank regularly in these fevers it is an intestinal antiseptic and nutritive.

In **dyspepsia** glycerine serves an excellent purpose; holding a fixed quantity of the peroxide of hydrogen in solution; it is known as **Glycozone**. It acts on enfeebled stomachs, especially if there be ulceration or **catarrhal gastritis**. It is a most efficient preparation. Glycerine will relieve many cases of pyrosis and excessive gastric acidity. It is useful in chronic intestinal dyspepsia, especially the flatulent variety and in certain forms of chronic constipation, stimulating the secretory and excretory functions of the intestinal glands. It is not yet determined that the above influences depend on the dehydrating action of the agent.

Glycerine injected into the bowels produces prompt and satisfactory evacuation, which renders it valuable with constipated infants, as it stimulates the secretions, encourages normal peristaltic action and may subsequently result in a cure. From half a teaspoonful to a teaspoonful injected at the same time each morning, or with very young infants morning and evening, will establish regular habits of evacuation. A larger quantity is necessary with adults.

Glycerine suppositories are prepared for adults which are often very convenient.

Introduced into the vagina glycerine will induce a large, in some cases excessive, watery excretion from the tissues, which is utilized as a local depletive in many cases of engorgement of the structure of the womb, in **congestion** and **subinvolution**.

Glycerine is applied to **fissures** and **chaps** of the skin, and is restorative to all cutaneous surfaces. It prevents the action of the atmosphere on these tissues and acts as a lubricant.

It allays **itching** of the skin and heals many forms of **scaly skin disease**, and serves also as a vehicle for the administration of more active skin remedies. It is of much service in eczema, psoriasis, lepra, prurigo, herpes and pityriasis and will modify the pitting in variola.

It is valuable applied to fissured nipples, to indurated glands and to erysipelatous inflammation, either of an acute or subacute character.

A foreign writer gives fourteen grains of glycerine for every pound of the body's weight in every twenty-four hours, to reduce the **excess of uric acid** within the system. He gives this in divided doses in seltzer water three or four times a day, repeating the treatment when the condition recurs. It is especially recommended if gravel is present. Hermann of Germany has experimented on it fully, and believes that the use of large quantities of the remedy as suggested will not only help expel the small granules formed, but will assist in dissolving the larger ones, making it possible for them to pass. At the same time it prevents muscular contraction of the walls of the passages. The entire influence is desirable.

A physician introduced an ounce of glycerine antiseptically high up in the womb when desiring to **secure premature birth**. Five cases out of six, aborted satisfactorily by this treatment.

EUPATORIUM. *Eupatorium perfoliatum.*

Synonyms—Boneset, Ague Weed.

CONSTITUENTS—

Eupatorin, volatile oil, resin, tannin, wax, gum.

PREPARATIONS—

Extractum Eupatoriae Fluidum, Fluid Extract of Eupatorium.
Dose, from ten to sixty minims.

Specific Medicine Eupatorium. Dose, from five to thirty minims.

Physiological Action—Stimulating tonic, aperient, diaphoretic, emetic, antiperiodic.

The action of this agent upon the stomach is somewhat unique,

differing in some important particulars from that of other stomach tonics.

Therapy—It is valuable in catarrhal disorders of whatever nature, whether gastric, intestinal, post-nasal, bronchial or vesical. It has an undoubted soothing influence upon the nervous system, and is of much value in stomach disorders of nervous origin. In a case of neurasthenia of long standing, complicated with emphysema, the patient, an extremely nervous woman, persistently **regurgitated** all the **food** she took. There was no nausea, no vomiting; the food simply came back after it was swallowed. Fifteen drops of the fluid extract of *boneset* every two hours was given. The second day the patient was relieved, and there was no return of the disorder after the fifth day, for several months, when it recurred for a short time, but was promptly relieved by the same medicine.

In a case of intractable hiccough in an old man, when every possible remedy had failed and death seemed inevitable, *boneset*, fifteen drops in an infusion of *capsicum*, every hour, produced a permanent cure.

It is a typical diaphoretic, although not powerful in its action. In intermittent fever of the severest types, in remittent fever, in continued fevers of any type, and in the exanthemata, given in hot infusion in the early stages, it produces delightful results.

Dr. Locke says the remedy is specific in **masked intermittent fever**, in which there is sluggishness of every function and irregular occurrence of chill and fever, the fever followed with but little reaction, almost no perspiration, but with severe aching in the bones. He uses the infusion, made by steeping one ounce of the foliage of the plant in a quart of boiling water. Of this a half teacupful is given every fifteen minutes until the patient vomits thoroughly. He then puts the patient to bed and continues the remedy in smaller doses at lengthened intervals until the patient has perspired for two or three hours, when the medicine is discontinued and tonics are then given.

In conditions due to malaria, where there is intermittent headache, or severe irregular browache, where many of the symptoms of ague are present, this remedy takes precedence over every other.

LYCOPODIUM

Lycopodium clavatum.

Synonym—Club-moss.

CONSTITUENTS

Fixed oil, sugar, volatile base (methylamine), alumina, phosphoric acid.

PREPARATIONS—

Specific Medicine Lycopodium. Dose, from one to fifteen minims.

Powdered Lycopodium. For external use.

Tincture of Lycopodium. Dose, from one to twenty minims.

The tincture prepared from the triturated sporules, contains to the fullest extent the medicinal principles of the herb.

Physiological Action—The older writers claimed that the agent acted as a stimulant to the sympathetic visceral system of nerves and influenced the functional activity of all organs so controlled. It was believed to increase the tone of the liver, and to restrain over-action of the kidneys and eliminative organs.

Specific Symptomatology—Extreme sensitiveness of organs of special sense. Pain under the ribs and around the waist; shooting pains under the shoulder blades; severe pains across the stomach; nausea; vomiting of sour and bitter food; persistent constipation; painful bleeding piles; coldness of the extremities; pale, ashy or jaundiced complexion, with dirty skin; in some cases of flatulence, with distention of the intestines; persistent constipation of children; irritation of the bowels following an injection; sour stomach and heartburn; in old standing congestions of the liver, with great desire to sleep after eating. All conditions accompanied with excess of uric acid are benefited by it.

Therapy—The simple powder is used extensively as an application to tender and irritable conditions of the skin, and as an application to certain skin diseases to which a dry powder would seem applicable—to **intertrigo, erysipelas, eczema, herpes**, and ulcerated surfaces and perhaps to burns. Its domestic use is in its application to chafed surfaces and as a dusting powder for infants.

The agent is said to be dependable in its influence upon certain severe forms of **dyspepsia**. That common condition present in catarrhal gastritis, evidenced by soreness on pressure over the stomach, and a sensation of fullness of the stomach when only a little has been eaten, is quickly relieved by its use.

It is advised in **rheumatic** conditions, especially if accompanied by any of the above indications. It is depended upon as a cure for the uric acid diathesis and in this probably lies its influence upon rheumatism.

Dr. Harrison of Illinois treated several cases of **fever** that had morning remissions, but the highest occurred in the middle of the afternoon, in which the urine was suddenly of a dark red color, and deposited the usual stains of the urates with considerable uric acid. In another case, there was cerebral and spinal irritation. The urine was similar in all the cases. Small doses of *lycopodium*, twenty drops in four ounces of water, a teaspoonful every two hours, was sufficient to modify all the conditions and overcome the fever.

In its action upon the urinary apparatus it relieves **urinary incontinence**, especially if caused by an excess of uric acid and the urates, painful urination and vesical catarrh.

It is also serviceable in gonorrhoea and in gleet.

CROCUS.

Crocus sativus.

Synonym—Saffron.

CONSTITUENTS—

Crocin, volatile oil, picrocrocine (saffron bitter), gum, wax, fat, albumen.

PREPARATIONS—

Tincture Croci, Tinctura Croci, Tincture of Saffron. Dose, from one to three drams.

Tinctura Serpentariae Composita, Compound Tincture of Serpentaria. Dose, from ten to sixty minims.

Therapy—*Saffron tea* was long in good repute among the grandmothers of our older men as an essential remedy to start new-born babes in normal health channels. It was thought necessary to encourage the action of the liver and to cleanse the intestinal canal and stomach. It was positively indicated, if the skin was yellow and **infantile colic**.

It has mild **diaphoretic**, stimulant, **antispasmodic** and tonic properties. It may be given in the early stages of fevers, and especially in **eruptive fevers**, in full doses if there is a retrocession of the eruption.

It checks mild cases of irregular **uterine hemorrhage**, menorrhagia or metrorrhagia, and encourages the lochial discharge when suppressed after confinement.

QUASSIA.

Quassia amara.

Synonym—*Simaruba Excelsa*.

CONSTITUENTS—

Quassin. Dose, one-third of a grain.

PREPARATIONS—

Extractum Quassiae Fluidum, Fluid Extract of Quassia. Dose, from ten minims to one dram.

Tinctura Quassiae, Tincture of Quassia. Dose, from one-half dram to one dram.

Physiological Action—The taste of *quassia* is so intensely bitter that with some patients it acts as an emetic at once. It stimulates most positively the salivary, mucous, gastric and intestinal canal. It is an anthelmintic and parasiticide.

Specific Symptomatology—Extreme inactivity of the digestive and assimilating organs from debility—a cessation of function from lack of power, is an indication for the use of this remedy. The evidences are a broad, flabby tongue, pale, thick, indented with the teeth, sometimes heavily furred, coated with a dirty white or brownish coat, mucous membranes of the mouth pale, anorexia, general feebleness.

Therapy—It is one of the best of what is known as “stomach bitters.” In **debility** of the **stomach** or **intestinal** structures, and inactivity of the secreting organs, the tonic effects of this agent are most pronounced. In convalescence from severe acute disease, the conditions there often existing are satisfactorily corrected with this remedy.

Many forms of **dyspepsia** depending purely upon atonicity, are cured by the use of **quassia**, either alone or in conjunction with some of the other remedies of this group which possess a similar action.

Quassia, by enema, will destroy **ascarides**. **Pin** or **thread worms** in large quantities may be removed by a single injection of a strong infusion of the bark.

As these worms infest almost the whole of the large intestine, it is advisable for their complete removal that the patient lie on the left side with the hips elevated, and that a large quantity of the infusion, not too strong in this case, but as warm as can be borne, be slowly introduced into the bowel from a fountain syringe. Tonic remedies internally are advised in conjunction if there is a persistent tendency to their reappearance.

Quassia in infusion will destroy small insects, ants, flies and lice of all kinds. The pediculus capitis and pediculus pubis are readily destroyed by frequent washing with a strong infusion of the drug.

SUMACH

Rhus glabra.

Synonym—Smooth Sumach.

CONSTITUENTS—

Volatile oil, resin, tannic and gallic acid, albumen, gum, starch. The berries contain malic acid in combination with lime.

PREPARATIONS—

Extractum Rhois Fluidum (A. D.), Fluid Extract of Sumach Bark. Dose, from a half to one dram.

Extractum Rhois Glabrae Fluidum (U. S. P.), Fluid Extract of Sumach Berries. Dose, one dram.

Specific Symptomatology—Its influence is upon mucous surfaces in a relaxed, ulcerated and phlegmonous, but irritable and intractable condition.

Therapy—It is used in **aphthous stomatitis**, both internally and externally, in **gangrenous stomatitis** in conjunction with more active agents, and in **stomatitismaterni** it is a good remedy. It will serve a good purpose in atonic ulcerations of the stomach and intestinal canal, in some cases of prolonged diarrhea and dysentery with greatly debilitated mucous surfaces. Its field is well covered, however, with more active remedies.

CORNUS.

Cornus florida.

Synonym—Dogwood.

CONSTITUENTS—

Cornin or cornic acid, resin, gallic acid, tannin.

PREPARATIONS

Extractum Corni Floridae Fluidum, Fluid Extract of Cornus Florida. Dose, from a half to two drams.

Specific Medicine Cornus. Dose, from five to sixty minims.

Therapy—This agent is indicated not only to correct the atonic conditions of the glandular structure of the gastro-intestinal apparatus in malaria, but as an antidote to the malarial poison itself. It has marked control over many of the manifestations of malaria.

Its influence upon the stomach in these cases increases the appetite at once, improves the character of the digestion and relieves the drowsiness and dullness apt to follow imperfect digestion. It is a tonic in enfeebled conditions of the stomach from whatever cause and improves intestinal digestion.

GROUP IV.
Agents Acting upon the Stomach.

CHAPTER II
Mild Stomach Tonics.

FRASERA
PTELEA
ALNUS RUBRA
ASARUM
PANAX
LIATRIS
CONDURANGO
INULA
SACCHARINUM

FRASERA. *Frasera canadensis.*

Synonym—American Columbo.

CONSTITUENTS—

Gentioficrin, gentisic acid, two distinct yellow coloring matters
glucose, gum, sugar, salts.

PREPARATIONS—

Specific Medicine Frasera. Dose, from five to thirty minims.

Therapy—This agent operates upon the stomach and digestive apparatus directly, influencing the tone of the glandular organs of the entire digestive tract. It is a stomachic tonic of considerable power, exercising its best influence when the apparatus is impaired by protracted disease. Under these circumstances it is also a stimulant and astringent to the secreting surfaces, correcting **excessive night sweats** common to such a condition, controlling the **diarrhea** and **dysentery** where there are relaxed and atonic mucous membranes.

In that form of **catarrhal gastritis**, where there is a sense of fullness in the stomach after eating even a little food, it improves the digestion and relieves the distress, and where there is marked debility improves the tone of all the organs.

PTELEA.

Ptelea trifoliata.

Synonym—Wafer Ash.

CONSTITUENTS—

Oleoresin starch, albumen, yellow coloring matter, berberine, volatile oil, salt of lime, potash and iron.

PREPARATIONS—

Specific Medicine Ptelea. Dose, from one to twenty minims.

Therapy—The agent is a mild tonic, exercising a direct influence upon the stomach and digestive apparatus, correcting certain faults of gastric secretion, overcoming dyspepsia and improving the appetite. It may be given to good advantage with other stomachic tonics and iron. It corrects atonic diarrhea and is of benefit in dysentery, its pungent properties and sufficient astringency renders it of benefit in mild cases. In full doses it acts upon the skin as a diaphoretic. It has been given in lung troubles, but we have other active remedies which produce more gratifying results.

ALNUS.

Alnus rubra

Synonym—Tag Alder.

CONSTITUENTS—

Not analyzed.

PREPARATIONS—

Specific Medicine Alnus. Dose, from one to sixty minims.

Therapy—This agent combines both alterative and tonic astringent properties. It removes waste products, improves the tone of mucous structures and increases the secretory action of the glands of these structures. At the same time it prevents the flow of an excessive quantity of mucus into the stomach, and stimulates the flow of gastric juice and aids the digestion. It cures various forms of ulcerations in the mouth, or in the gastro-intestinal canal. It is advised in *rhus*

poisoning. It has accomplished satisfactory cures in pustular and eczematous disease of the skin.

Dr. Ramey of Lincoln, Neb., suggests the use of *alnus* in the treatment of **syphilis**. He gives it in conjunction with *echinacea* and *stillingia* with successful results. It can be given as high as thirty drops at a dose, four times a day and will undoubtedly add something to our list of good remedies for this disease.

ASARUM

Asarum canadense.

Synonym—Wild Ginger.

Dose, from one-half to one dram of the specific medicine,

Dr. Houts, claims that *asarum* is a reliable **emmenagogue**, and perfectly safe. He gives it alone when he needs to restore the menses, and says he needs nothing with it. It has a direct influence on the uterine system. For young girls with their early menstruation and in cases of painful menstruation, he uses an infusion of the fresh root and expects to get satisfactory results. He takes one ounce of the root and lets it steep slowly for one hour in a pint of water and sweetens it. He gives from one to two drams every half hour or hour. He takes from five to ten drops of the fluid extract to a cupful of hot sweetened water and gives this every half hour or every one or two hours as the patient needs. The results have established his confidence.

The stimulant properties of this agent are of a local character, acting directly upon the mucous lining of the intestinal tract, and overcoming flatulence. It is also a stimulant to the secretory function of the skin, acting as a mild but efficient diaphoretic.

In inflammatory conditions it should be avoided, but after the inflammation has abated, it will mildly stimulate the function of digestion and food appropriation.

The late Dr. R. S. Newton was quite enthusiastic concerning the action of this remedy. Other of our writers believe that it has a more important place than that given by most of our authors. It is advised in strong

infusion, freely given, as a stimulating diaphoretic.

Therapy—In acute **nasal catarrh**, where the discharge has not appeared, or has been suppressed, with the usual symptoms of headache and general oppression, muscular aching and general discomfort, it is given with good results. **Inflammation** of the **conjunctiva**, from taking cold, where there is profuse and constant lachrymation, will be relieved by it.

In painful or longstanding **spasmodic affections** of the pulmonary region, as in **whooping cough** or **bronchitis**, it will be advantageous and, at the same time, it influences the digestive apparatus, correcting **nausea**, **cholera** and **diarrhea**, which may be present.

Dr. Newton considered its most important influence to be exercised upon the generative apparatus. It is a stimulant to the muscular structure of the womb and to the ovaries, and is **abortive** and an **active parturient**, and may be given to good advantage in recent cases of **amenorrhea** from cold. During **labor**, when the pains are excessive, and when there is extreme erythism, a few drops of the tincture may be put in half a glass of water and a teaspoonful administered every five or ten minutes. It will induce quiet and render the labor more natural. It works in perfect harmony with small doses of *cimicifuga*.

In **metrorrhagia** and in **menorrhagia**, where the flow is steady but not free, where there are cutting pains in the abdomen and groin, extending down the thighs, with aching in the back, the patient nervous and irritable, this remedy will restore the flow to its normal proportions, will relieve the nerve tension and subdue pain. **Violent pain** in the small of the back on the approach of the **menstrual epoch**, which seems to interfere with the breathing, is said to be a diagnostic indication for this remedy.

Where there is **melancholy** and nervous disturbance in the early part of pregnancy, so that miscarriage seems to be threatened, a teaspoonful of *asarum* every two or three hours will sometimes restore the patient to normal condition.

PANAX

Panax quinquefolium.

Synonym—Ginseng.

CONSTITUENTS—

Panaquilon, gum, resin, starch, albumen.

PREPARATIONS—

Specific Medicine Panax. Dose, from five to sixty minims.

Therapy—This agent is an important article of commerce in China, being a general domestic remedy and highly prized. It is a mild sedative and tonic to the nerve centers, **improving** their **tone**, if persisted in, and increasing the capillary **circulation** of the **brain**. It is given in **cerebral anemia**, and if combined with other tonics is capable of doing some good. It is also prescribed in the failure of **digestion** incident to **nervous prostration** and general nerve irritation.

LIATRIS.

Liatris spicata.

Synonyms—Gay Feather, Colic Root.

PREPARATIONS—

Extractum Liatris Fluidum, Fluid Extract of Liatris. Dose, from one-half dram to one dram.

Specific Medicine Liatris. Dose, from ten to sixty minims.

Infusion Liatris. Dose, from one to four drams.

Physiological Action—The agent has the properties, to a mild degree, of a bitter tonic. It is said to act as an antispasmodic to spasm of the muscular structure of the intestines, relieving spasmodic colic. It stimulates the kidneys and has been used in dropsies. It may be used in the latter stages of fevers as an eliminant.

Therapy—*Liatris* stimulates the stomach mildly, and is a tonic and antispasmodic to the entire gastro-intestinal apparatus, relieving colic and soothing irritation, after fevers and after other acute prostrating diseases, restoring healthy glandular action. Its eliminative action is quite marked, it having been often used in syphilis and scrofula.

It is a prompt diuretic, relieving kidney irritation and assisting in the removal of dropsical effusions, but we have more direct and efficient remedies.

CONDURANGO. *Gonolobus condurango.*

Synonyms—Condurango (Cundur-angu, vine of Condor).

PREPARATIONS—

Extractum Condurangonis Fluidum, Fluid Extract Condurango, not miscible with water without precipitation. Dose, one-half to one fluid dram.

Therapy—The influence of the agent is exercised directly upon the stomach as a tonic and corrective of perverted action. It is of service in **gastric ulcer** and in the early stages of **cancer of the stomach**, for which it was originally lauded as a cure. It is depended upon by some enthusiastic users to retard progress of some cases of this disease, and to relieve distress and urgent symptoms when fully developed. It cannot be curative. It will be found of service, probably, in catarrhal gastritis with extreme atonicity and threatened ulceration. In these cases its virtues as a tonic and restorative will find exercise to the full extent of their influence.

It deserves thorough investigation and faithful trial. It may be given in the form of a warm decoction with excellent advantage. A wine of *condurango* is prepared which has good influence upon the stomach. Half an ounce may be taken with the meals.

A Homeopathic writer gave *condurango* internally to a man 74 years of age who had small crusts forming on his lower lip for a long time suggesting the beginning of **cancer**. He gave a Homeopathic trituration and satisfactorily cured the case. This remedy being recommended externally should be tried internally for other cancerous conditions. In the above case a chronic catarrh of the stomach where there was vomiting of a green slime after dinner with hyperacidity and emaciation was inadvertently cured with the treatment as stated.

INULA

Inula helenium

Synonym—Elecampane.

CONSTITUENTS—

Helenin, inulin, volatile oil, acrid resin, bitter extractive.

PREPARATIONS—

Extractum Inulae Fluidum, Fluid Extract of Elecampane. Dose from ten to sixty minims.

Specific Medicine Inula. Dose from five to forty minims.

Administration—The agent is given in infusion to excellent advantage, and a syrup may be prepared which is serviceable in lung troubles.

Helenin is given in doses of from the one-twelfth to the one-fourth of a grain four or five times daily.

Physiological Action—The tonic influence of this agent has been recognized for many years. It acts directly upon the nutritive functions of the body. In general debility from protracted disease or from overwork, or from age, its influence is plainly apparent. It imparts tone to the digestive and respiratory organs and to the urinary tract.

Therapy—In atonic condition of the abdominal viscera with engorgement great relaxation and general inactivity this agent exercises specific properties. It influences not only the character of the circulation but acts also as an alterative, improving the character of the blood. It is of advantage in those **atonic conditions** where, with great inactivity of the gastro-intestinal tract, there is disorder of the skin and discoloration and eruptions.

The direct tonic influence of *inula* seems to be exercised also upon the **respiratory tract** after protracted disease promoting recovery. It lessens excessive bronchial secretion controls the **night sweats** and imparts real tone and strength.

Hare says that *inula* has an actively astringent influence. Giving it during the course of cough if there be great secretion the influence is very desirable but if there is but little secretion it makes the cough very tight.

Foreign authorities have written considerable in the last five years on the action of this agent in the treatment of **pulmonary tuberculosis** claiming that it has a directly toxic action upon the tubercle bacilli. They believe that a pure alkaloid of *inula* will exercise a more positive influence than creosote, or guaiacol preparations. Von Unruh experimented with *inula* and *echinacea* hypodermically (see *echinacea*). He uses *Subculoid inula*, from three to five cc. daily. His first report will be found in The National Quarterly, Volume I, Number 7. It certainly promises favorably. It must be carefully investigated. *Inula* is a useful remedy in certain coughs.

Perhaps the alkaloid *inulin* will be found superior to the fluid medicine in these cases. It is certainly an important remedy in the relief of irritation of the trachea and bronchi. Where there is persistent **irritating cough**, with pain beneath the sternum, and abundant expectoration, the condition being acute or sub-acute in character, and accompanied with sonic elevation of the temperature, it will be found serviceable. It is an expectorant of a soothing character. It is also diuretic and diaphoretic in its general influence. Excessive **catarrhal discharges** from the bladder are readily controlled by its use, and vaginal catarrh yields readily to its influence. It acts directly upon the glands of the cervix uteri and in catarrhal endometritis it speedily overcomes the glairy mucous discharge and materially improves the condition. **Emmenagogue** properties are claimed for it but this property has yet to be demonstrated.

Dr. Burd says that he is acquainted with an old German physician who claimed to have cured forty-seven cases of hydrophobia with **elecampane**, without a single failure. The patients had the diagnostic symptoms plainly marked so that there was no doubt that the disease was present. He made a very strong decoction of the remedy in sweet milk. He gave half a pint of it every hour. He claimed that all these patients vomit a peculiar green vomit, and when this stops the medicine can be discontinued or given in less quantities.

SACCHARINUM.

Formula-- $C_7H_5SO_3N$.

Synonyms—Saccharin, Hydro-orthosulphaminbenzoic acid.

Physiological Action—Saccharin has no toxic influence on the animal body; when given internally or subcutaneously, is excreted by the kidneys in an unaltered state. It is therefore not decomposed in the body, nor do the saliva or the feces contain any traces even after large doses. Unlike benzoic and salicylic acid, it is not converted into hippuric or salicylic acid. It has scarcely any retarding effect on the digestion of either proteids or hydrocarbons, and in fact it is said to increase the diastatic action of malt. When given in large doses, however, fifty to seventy-five grains, injurious effects or disturbances of the appetite are sometimes induced. The urine is usually not altered either in specific gravity, quantity, or in the amount of urea and uric acid; it, however, does not readily undergo fermentation. The amount of chlorides in the urine appear to be increased during its use, while the phosphates remain normal. Animals on full diet with the addition of Saccharin increase in weight.

Therapy—It is given to replace sugar when that agent should be avoided. **Diabetic patients** use it freely for sweetening their food and beverages, and in most cases are as well satisfied with it as with sugar. Five grains will sweeten a cup of coffee as effectually as two teaspoonfuls of sugar. It sweetens sauces and fruits however acid they may be without chemical change.

It is used in the treatment of **obesity**, but its utility in this condition is questionable.

In certain forms of **acid dyspepsia** it has exercised a mild curative influence

It conceals the bitter taste of quinine and bitter tonics more effectually than sugar.

GROUP IV.
Agents Acting upon the Stomach.

CHAPTER III.
Agents Used in the Relief of Gastric and Intestinal
Pain—Gastro-Intestinal Sedatives.

DIOSCOREA
COLOCYNTH
GINGER
PEPPERMINT
HORSEMINT

DIOSCOREA. ***Dioscorea villosa.***

Synonym—Wild Yam.

CONSTITUENTS—Saponin.

PREPARATIONS—

Dioscorein. Dose, from one to four grains.

Specific Medicine Dioscorea. Dose, from one to forty minims.

Physiological Action—Antispasmodic and anodyne.

Specific Symptomatology—In sudden spasmodic **griping** pain in the stomach and bowels it acts similarly to *colocynth*, but is more certain in the severer cases, especially if from malarial causes. It is specific in **bilious colic**—in the pain of the passing of **gall stones**, in mild cases, and is valuable in spasmodic colic of any kind. Spasmodic pain yields to it readily, but it is much more certain in pain and muscular spasm of the intestines. Its action produces either immediate or negative results. If, therefore, there is no benefit after one or two hours' use it may be discontinued.

Therapy—In the spasmodic pain of cholera morbus or cholera infantum, of diarrhea or dysentery it is useful.

In **neuralgicdysmenorrhea**, in **ovarian neuralgia**, in **cramp-like pains** in the uterus at any time and in severe **after pains** it often acts satisfactorily, quickly relieving the muscular spasm. Fifteen drops of the tincture of the specific *dioscorea* in half a teacupful of hot water should be drunk at a single dose, as in acute cases it is much more certain if given in this manner. Five drops every hour or two can be given with good results in constantly recurring mild **colicky pains** without apparent cause. When given for after pains it is usually best to give the tincture in ten drop doses in cold water every half hour or hour, as the hot infusion may cause too great relaxation of the uterine muscular structure, and permit severe hemorrhage.

COLOCYNTHIS.

Citrullus colocynthis

Synonym—Colocynth.

CONSTITUENTS—

Colocynthin, extractive, fixed oil, resin, gum, pectin, calcium and magnesium phosphate.

PREPARATIONS—

Extractum Colocynthidis, Extract of Colocynth. Dose, from one-half to two grains.

Extractum Colocynthidis Compositum, Compound Extract of Colocynth. Dose, from five to twenty grains.

Specific Medicine Colocynth, Dose, from one-twentieth to three minims.

Physiological Action—Hydragogue cathartic, tonic. In excessive doses it causes violent emesis, catharsis, bloody stools, severe burning colicky pains, spasms, and in some cases death.

Dr. Cressman of Illinois reported a case poisoned by *colocynth*. The patient was taken with violent pain in the stomach and bowels, followed immediately by vomiting. The bowels moved once, then. The tongue was clean; the pupils were dilated; pulse weak and rapid; respiration short; skin cool and moist; intense frontal headache. The pain in the extremities increased with the pain in the back. In twenty-four hours the pulse was weak, temperature subnormal, bowels moving

every fifteen or twenty minutes, movements streaked with blood, headache very intense, tenesmus extreme. By hypodermics of morphine for the pain, and carbolic acid and subnitrate of bismuth for the intestinal disturbance, she slowly recovered, but subnormal temperature continued for several days.

Specific Symptomatology—Acute, cutting pains in the stomach and bowels in infants-in otherwise perfect health. Intestinal derangements denoted by screams and sharp crying out in sleep, persistent crying and screaming with drawing up of the legs in very young babes. Spasmodic pain of all kinds in the stomach or bowels.

Therapy—Five drops of the tincture in half a glass of water, a teaspoonful every fifteen minutes, will cure **infantile colic** with the above symptoms in an hour. It is serviceable in all forms of colic in these small doses, whether from the liver, stomach or the intestines, if the pain is sharp, quick and of a cutting character. It will cure neuralgic colic wherever located, and also some cases of idiopathic neuralgia.

In large doses it is **cathartic** and depressant in its action, slowing the heart and reducing the temperature and at the same time producing great irritation, consequently feebleness and inflammation are contraindications to its use.

In **bilious dyspepsia**, so-called, with distension or a feeling of fullness in the stomach after eating, it is a good remedy in minute doses given after meals. The tincture is a better remedy than the specific, as the latter is too active. It is a good plan to dilute it for every day prescribing, in the proportion of one dram to nine drams of dilute alcohol. Of this ten minims in a four-ounce mixture will produce excellent results.

Colocynth is advised for **ovarian trouble** where the pain is sharp and cutting; where the ovaries are enlarged and tender from neuralgia. Also during menstruation if the pain is griping, spasmodic, sharp, and severe. Ten drops in a four-ounce mixture, a teaspoonful every half hour or hour. In the latter case better results may be secured by adding to the mixture ten or fifteen drops of **dioscorea**.

ZINGIBER.

Zingiber officinale.

Synonym—Ginger.

CONSTITUENTS—

Volatile oil, resin, starch, gum, gingerol.

PREPARATIONS—

Extractum Zingiberis Fluidum, Fluid Extract of Ginger. Dose, from ten to thirty minims.

Oleoresin Zingiberis, Oleoresin of Ginger. Dose, from a half to one minim.

Tinctura Zingiberis, Tincture of Ginger. Dose, from fifteen to sixty minims, diluted with water.

Infusum Zingiberis, Infusion of Ginger, prepared by adding a teaspoonful of powdered ginger to half a pint of hot water. Drunk at once, it acts as an emetic and diaphoretic.

Physiological Action—This agent is mentioned in but few therapeutic works, although it occupies an important place, and should not be neglected. It is a profound and immediate stimulant, an active diaphoretic, an anodyne in gastric and intestinal pain, and a sedative to an irritated and overwrought system when there is extreme exhaustion. An infusion of the powder drunk warm produces immediate but mild emesis and active diaphoresis.

Administration—*Ginger* is an emergency remedy. In every case in which brandy or whisky is given to produce an immediate stimulating influence, the tincture of *ginger* can be given with even better results. From half a teaspoonful to a teaspoonful will produce greater stimulation than half an ounce of brandy. It may be stirred into half a glass of cold water, but is much more immediate in its action if given in hot water. The tincture does not produce emesis.

Therapy—The agent stimulates the stomach actively, producing a pleasing sense of warmth. It overcomes flatulence and quickly relieves **flatulent colic**. In **atonic conditions** of the **stomach** and intestinal tract, it stimulates the structure to renewed activity and materially assists in the restoration of normal tone. It relieves pain from any cause except inflammatory action, when this remedy must be avoided.

In **acute colds** the entire train of symptoms may be aborted in a single night, by advising the patient to take a hot *mustard* foot bath at bedtime, while the body, prepared for bed, is wrapped in warm blankets. During the foot bath the patient should drink a glass or two of hot water, each of which contains half of a dram of the tincture of *ginger*.

Acute inflammations may be aborted by this course. In **dysmenorrhea**, **ovarian neuralgia** and **uterine pain** from any cause at the menstrual epoch, this agent is reliable. If given at the beginning of an **hysterical attack** it will often abort the attack, and produce quiet and restful sleep.

Its influence as a rubifacient is slow and by no means as satisfactory as *mustard*, and it is now seldom used as a counter-irritant.

MENTHA.

Mentha piperita

Synonym—Peppermint.

CONSTITUENTS—

Volatile oil, resin, tannin, gum.

PREPARATIONS—

Aqua Menthae Piperitae, Peppermint Water. Dose, ad libitum.

Olium Menthae Piperitae, Oil of Peppermint. This is a volatile oil prepared from the fresh herb by distillation with steam—a greenish-yellow liquid, having a pungent odor and taste. Dose, from one to fifteen minims.

Physiological Action—*Peppermint* is a powerful diffusible stimulant, carminative, antispasmodic, stomachic, and in the form of the volatile oil a local anesthetic.

Specific Symptomatology—Flatulent colic, gastrodynia, nausea, **vomiting**, spasmodic pain in the bowels, hiccough, **palpitation** from indigestion, griping, cholera morbus, cholera infantum, spasmodic cholera, irritability of the stomach, **diarrhea** with abdominal pain, nervous headache, painful gonorrhoea.

Therapy—In fevers of an inflammatory character caused by exposure to cold and damp, with nausea and vomiting, a warm infusion of *peppermint* may be given to produce perspiration and promote a cure, as it is a very efficient diaphoretic.

The oil of *peppermint*, on account of the menthol present in it, is a local anesthetic, and may be employed to relieve local pain, as in the inflamed joints of **rheumatism**, as a spray in painful inflammation of the throat and fauces, and in any painful condition where a direct application of the anesthetic can be made.

Where the food tends to ferment in the stomach and bowels, it may be given in doses of three to five minims in capsules, as an antiseptic to prevent fermentation and promote digestion.

When a local application of the *oil of peppermint* is made, the parts, where practicable, should be covered with oiled silk or rubber cloth to prevent evaporation.

A spray of *oil of peppermint* may be inhaled with relief of many of the distressing symptoms incident to asthma and chronic bronchitis of the aged.

Oil of peppermint applied to carious teeth will promptly relieve the pain of **toothache**. The cavity should be dried and a pledget of cotton saturated with the oil placed in it.

In the extreme irritability of the stomach in **cholera morbus** and in painful stasis of the stomach and bowels, the *spirit of peppermint* may be given at frequent intervals in hot, sweetened water, while hot fomentations should be applied to the abdomen at the same time.

In the pain of **acute indigestion**, and in painful diarrhea and dysentery, while *peppermint* will prove a valuable analgesic it is more important to the safety of the patient to empty the stomach with an emetic of the compound powder of *lobelia*, or move the bowels with a cathartic of sulphate of soda; when the cause is removed the pain and danger will pass away.

In burns and scalds *peppermint* is both soothing and curative, the parts being kept wet with it. It is a stimulating dressing, but is not

objectionable on this account.

In **rectal pruritus**, and in painful papillary growths at the orifice of the female urethra, either the *oil of peppermint* or menthol may be employed as a local anesthetic to relieve the itching and pain.

In painful bowel complaints with inflammation—pain on pressure, tongue dry, with reddened tip and edges, *peppermint* should not be given. In any case if the remedy does not afford relief in a reasonable time it should be discontinued.

MONARDA.

Monarda punctata.

Synonym—Horsemint.

CONSTITUENTS—

A dark-yellow volatile oil which contains thymol. Soluble in alcohol. Dose, from one to five drops.

Physiological Action—In its general influence *monarda punctata* is a pure active stimulant of a diffusible character; a few drops of the oil on the tongue will produce a stimulation which will be felt at the tips of the fingers in a few minutes. It stimulates the nervous system and increases the heart's action, taking the place of alcoholic stimulants to a great extent. The essence, tincture or infusion are all prompt in their action. It soothes nervous excitement when due to exhaustion, promoting sleep and rest. Upon the stomach, in whatever form taken, it is a stimulant tonic and carminative.

Therapy—It soothes **gastric and intestinal pain** in the absence of inflammation, especially in Cholera Morbus and overcomes nausea and vomiting. It controls diarrhea from debility with relaxation of the mucous structures of the intestinal canal.

The agent is efficient in the control of **vomiting** due to exhaustion, or persistent nausea with flatulence present in dilated stomach, or the **vomiting of alcoholics**, in whom it will, in part, **supply** the craving for liquor, and impart a temporary tone to the stomach and nervous system. Dr. Laws claimed to prevent fully, all nauseating influence of

lobelia and *ippecac* by this agent and from this influence he learned to try it in all cases of vomiting, usually with much satisfaction. He believed its influence controls irritability of the pneumogastric.

It may be given with *turpentine* or *gaultheria* in extreme atonicity of the intestinal tract in protracted fevers with tympanites. It is to some extent a diaphoretic, and has also a diuretic action which is important in these fevers.

The agent has been used to considerable extent as an emmenagogue, and is sometimes efficient in simple retention of the menses from cold.

Note—As sedatives to nausea and gastric irritation, other agents, as hydrocyanic acid, ingluvin, ferrocyanide of iron, and *ippecac* in small doses, are efficient, and this property is fully described in the consideration of the therapy of those agents in other chapters.

GROUP IV.
Agents Acting upon the Stomach.

CHAPTER IV.
Agents Used as Sedatives to Gastric Irritation—
Anti-Emetics.

AMYGDALUS PERSICA
BISMUTH SUBNITRATE
BISMUTH SUBGALLATE
OXALATE OF CERIUM
ARSENIC OXIDE

AMYGDALUS. *Amygdalus persica.*

Synonym—The Peach Tree.

PREPARATIONS—

Tincture Amygdalus Persica. Dose, from ten to sixty minims.

Specific Medicine Amygdalus. Dose, from five to thirty minims.

Therapy—The older physicians suggested this remedy as specific to irritation in the stomach, with **persistent nausea** and **vomiting**, especially valuable in childhood where the tongue was elongated and pointed, the edges red and the stomach tender on pressure. It has invariably disappointed the author, but other physicians use it with much confidence. it is said to relieve **nervous vomiting** and the **vomiting of pregnancy**, and the persistent vomiting of **cholera infantum**. It is sometimes best given in strong infusion of the bark of the green twigs. The influence claimed for this by Scudder has not been confirmed by more recent observers.

BISMUTH SUBNITRATE.

Synonym—Subnitrate of Bismuth.

This salt is formed from purified bismuth, by the action of nitric acid in

the presence of distilled water.

Physiological Action—It is a mild and soothing agent in its local influence upon the skin and inflamed mucous surfaces. Internally its influence is confined almost exclusively to the gastro-intestinal mucous membranes.

The agent is not entirely devoid of toxic properties, when applied very extensively to large, open wounds. It sometimes produces poisonous effects owing to a not uncommon adulteration with a salt of arsenic. It has produced gastro-intestinal irritation and symptoms of arsenic poisoning. Desquamative nephritis with albuminous urine has occurred from its free and long continued use.

In all cases where its use is persisted in, it produces a greenish or black discoloration of the feces, and an odor of garlic upon the breath which is due partly to decomposition of the salt and partly to the presence of tellurium.

Therapy—It is applicable in all cases of vomiting from local irritation. It has long been in use for this purpose. It is one of the best known remedies in **chronic catarrh** of the **stomach** with much nausea and the secretion of large quantities of mucus. The writer has used an arbitrary combination of this salt with an equal part of ingluvin in all cases of irritation of the stomach. The combination is much more serviceable than either agent alone, and is applicable to very many conditions particularly to the **summer complaints** of children with extreme and persistent nausea.

In these cases it is well to add half a teaspoonful of this powder to half a glass of water, and after thoroughly stirring it, to administer a teaspoonful every few minutes for an hour or two, all other remedies being suspended. When the irritation is controlled, the agent should be continued for a short time in alternation with other necessary remedies.

Its influence is not confined to the stomach alone, but extends to the intestinal mucous surface, where it materially assists in controlling many forms of **diarrhea** through the astringent properties of the bismuth.

In the use of bismuth subnitrate for the cure of chronic gastric catarrh,

large doses are necessary. Fifteen grains of the pure salt, given once in three or four hours, is of more service than five grains often repeated.

It is useful also in **pyrosis**, in gastric **flatulence** and in extreme acidity of the **stomach** especially from the presence of lactic and butyric acids.

In **diarrheas** where extreme relaxation is present with lack of tone the intestinal membranes, this agent is of but little value as it lacks tonic properties.

When the tongue is clean and the bowel movements are watery, **Liquor Bismuth** is indicated in dram doses, after each stool.

As an **external application**, bismuth is one of the most valuable remedies. It forms a most perfect dusting powder for **chafings** and **excoriations** especially in young infants. It is applicable also to the skin of the face when easily chapped or when sensitive from shaving, and to chapped hands.

Incorporated in an ointment of lanolin, is is excellent applied to cracked and fissured nipples. It should be kept constantly applied, any excess being wiped off before nursing, and the ointment fully reapplied afterward.

This ointment is most superior as an application to **superficial burns**. After the pain and heat are reduced by the application of a carbonate, if this ointment is kept constantly applied to the burned surface, the healing is very rapid and the cicatrix is in some cases scarcely perceptible, usually no contraction of tissue taking place.

Although antiseptic properties are not ascribed to the remedy, pus is not likely to form when it is used. Where an active antiseptic is needed, boric acid may be incorporated with it. An ointment of this character is applicable to **eczema** of the moist variety. If applied, and the surface closely covered, healing in some cases takes place with great rapidity. In eczema of the **scrotum** and **anus**, this agent is applicable, and in **piles** of an acute or sub-acute character, it renders excellent service. It is applicable to **fissures** of the **anus** and to **ulcerated conditions** within the rectum, especially if there are **offensive** and **irritating discharges**.

BISMUTH SUBGALLATE.

Synonyms—Subgallate of Bismuth. Dermatol.

Specific Symptomatology—Thornton says it is a specific in gastric troubles, usually those of a sub-acute character, in which there are a white tongue, acid eructations, feeling of weight in the stomach after meals—bloating, diarrheal discharges at irregular intervals, general dilation of vessels.

Therapy—This agent performs the function of the subnitrate in nearly every particular, but is more actively astringent and antiseptic. Although toxic properties have not yet been observed to any great extent, they are undoubtedly present in the agent. In all conditions in which iodoform has been used in surgery, this agent has been substituted with results in most cases equally as satisfactory. It apparently acts in a similar manner, destroying the ptomaines, and thus rendering the germ inert. In an ointment with lanolin or with equal parts of lanolin and zinc ointment, in the proportion of one dram of this substance to the ounce, its use is advised in all the cases we have named for the subnitrate. It is praised for its action upon **moist eczema**. In all the cases of gastric and intestinal inflammation, and as an agent to control vomiting, this agent is used in much the same manner as the subnitrate, in doses of from three to ten grains.

CEROUS OXALATE.

Synonym—Oxalate of Cerium.

Administration—The salt may be given in doses of one grain every three hours. Three grains three times daily may serve the purpose. Eight grains is the maximum dose. It may be given in pill form or in a capsule. Large doses are sometimes effectual where small doses fail.

Therapy—The agent is a sedative to **gastric irritation**, controlling **vomiting**. Although acting similarly to bismuth subnitrate it has a wider action, through its influence as a nerve sedative, thus being especially advantageous in reflex vomiting. In vomiting of pregnancy it

is commonly used; also in the vomiting or nausea present in **hysteria** and in **uterine disorders** and displacements. As a local **gastric** sedative, it is given in **pyrosis**, in **acid dyspepsia**, in **catarrhal gastritis**, especially if there are nervous complications and in small doses in vomiting of **cholera infantum**.

In the disordered stomach of **chronic wasting diseases**—phthisis, chronic diarrheas and chronic nephritis—it is sometimes advantageously used.

That the agent has an influence upon the nerve centers is proven by the fact that it effectually controls some cases of **chorea**, and has been given advantageously in other forms of nerve irritation, and in epilepsy. It must be given in full maximum doses of the pure salt to obtain good results in these cases.

ARSENIC.

ACIDUM ARSENOSUM.

Synonyms—Arsenous acid, Arsenic trioxide, Arsenicum album, white Arsenic.

Physiological Action—In its physiological action this agent is a caustic poison. It acts as an escharotic and local irritant. When a poisonous dose has been taken there is salivation, metallic taste in the mouth, nausea, vomiting, great pain, with diffused soreness and intense burning in the stomach, which radiates from this organ outward throughout the abdomen. It produces irregular heart action, palpitation, feeble pulse, shallow, rapid and oppressed breathing, edema and albuminuria.

The skin becomes cold and covered with a cold, clammy sweat. Finally, delirium and convulsions occur and are followed by death.

Almost all the phenomena of cholera in extreme cases, are apparent in the symptoms of arsenic poisoning.

In medicinal doses the agent increases the appetite and digestion, stimulating the intestinal glands to increased secretion and encouraging peristaltic action. It stimulates the function of the brain and the central nervous system, producing a feeling of exaltation and

exhilaration. Its tonic influences are quite marked. While power to improve the condition of the blood is attributed to it, the manner in which this improvement occurs is not understood.

Specific Symptomatology—It is especially indicated where there is a general plethoric or engorged condition, or an edematous condition of the cellular tissues, with a deficiency of normal elasticity. This condition when resulting from malarial influences, or from inactive liver and spleen, is especially susceptible to the action of this remedy.

In its absorption by the stomach, Ringer says if that organ is empty the arsenic enters the veins and is carried directly to the liver. If there is food in the stomach, the agent is absorbed by the lacteals, and is thence poured into the blood current.

Therapy—In **dyspepsia** from general atonicity of the stomach, arsenic taken before meals will stimulate this organ, promoting the flow of the digestive fluids, and materially improving its tone. It is a common remedy in the treatment of **gastralgia** and in ulcer of the stomach.

In that form of chronic indigestion which induces a necessity for an immediate evacuation of the bowels, quite common to some debilitated patients and to children, this agent is of specific value. It relieves the increased peristaltic action induced by the presence of food, which is the cause of the food being expelled before it is digested. In these cases the digestion is increased, rapid absorption of the food takes place and the patient shows an improvement in general nutrition. The agent should be given in small doses before meals, one drop of Fowler's solution being usually sufficient.

In chronic ulceration and **cancer of the stomach** it alleviates the pain and relieves the vomiting. It is useful in all cases of **vomiting**. The vomiting of cholera and of **cholera infantum** are relieved by it.

The **reflex vomiting** of **pregnancy** and the regurgitation of food, common to neurasthenic and hysterical patients, is sometimes cured with arsenic when other agents have failed.

It has been highly commended in treatment of the **vomiting** of **alcoholics**. Given in proper doses in these cases and persisted in it restores the tone of the stomach, improves the digestion and materially

increases the appetite. It is used in the treatment of alcoholism in combination with other measures.

In **membranousdysmenorrhea** this agent is of much service, and Simpson claims that the agent is specific to that form of **diarrhea** in women in which with copious evacuations from the bowels, there are shreds and particles of membrane freely discharged, a condition which results in great emaciation and nervous exhaustion.

In the treatment of **cholera**, arsenic has been experimented with very widely. It has been used both in large, and in homeopathic doses. In the latter form very much has been claimed from its use. In small or medium doses, it will, without doubt, materially assist the cure.

The agent is useful in **jaundice** due to **malaria**, where there is catarrh of the bile ducts, also in overcoming duodenal catarrh. Often repeated doses of arsenic, not exceeding the $\frac{1}{100}$ of a grain, triturated with sugar of milk, are exceedingly efficacious in some cases of **watery diarrhea**, with greenish discharges. This influence is thoroughly accomplished in the use of the arsenite of copper, to which the reader is referred.

Arsenic has won considerable reputation as an antiperiodic. In that class of cases in which there is marked impairment of the sympathetic nervous system, it imparts **tone** to the **nervous centers**. It is especially adapted if the paroxysms are of irregular occurrence, or erratic in character. Small doses will accomplish good results in such cases, even better than large ones. The functions of the stomach, liver and other glandular organs are improved at the same time.

In the treatment of diseases of the skin arsenic is in common use. It is adapted to all **scaly eruptions** and to chronic **eczema**. It is useful in **psoriasis**, in **pemphigus** and **lichen**. In that form of eczema which affects the soft tissues, such as those of the anus, scrotum and vulva, it is especially applicable. If satisfactory results from this agent in full doses do not soon occur, better results may be obtained if the dose be decreased.

Fowler's Solution applied freely will cure warts. In the case of long standing, large warts, give from seven to ten drops internally three times daily.

Although arsenic has been long used in **chorea**, it is not so advised by Eclectic clinicians, other methods available to them being more successful.

Dr. Lester reports the application of arsenious acid, full strength, into the cavity of a tooth to destroy the nerve. The patient had for some time been affected with **paralysis of the left side** of the body and face. He then had **tonic spasm** of the **right side** of the body. These would relax after a short time to recur. He had suffered with these for four years. Immediately after the application of the acid to the tooth, he said, "Look, I can move my hand," and slowly the power came back first to the fingers and thumb; then to the left foot. At the time of the report every condition was slowly improving, especially was the sight returning to the left eye which had been blind from the paralysis. This is a well authenticated case.

LIQUOR POTASSII ARSENITIS.

Synonym—Solution of the Potassium Arsenite, Fowler's solution.

Administration—This solution, probably the most common of the arsenic solutions and the most convenient for administration, contains one per cent of arsenious acid. Although ten minims is given as the maximum dose, we would advise, however, that a dose above five minims be always given with caution. Our range of administration is from one-fourth of a minim to five minims.

GROUP IV.
Agents Acting upon the Stomach.

CHAPTER V.
Agents Used as Evacuants of the Stomach-Emetics.

EUPHORBIA
MUSTARD
COPPER SULPHATE
ZINC SULPHATE

EUPHORBIA. ***Euphorbia corollata.***

Synonym-Large flowering Spurge.

CONSTITUENTS—
Euphorbin glucoside, resin.

PREPARATIONS—
Specific Medicine Euphorbia. Dose, from one to ten minims.

Physiological Action—Emetic, diaphoretic, expectorant, epispastic. In large doses it causes emeto-catharsis, and in some cases inflammation of the stomach and bowels.

Therapy—Though *euphorbia* acts as an emetic it is but little used for that purpose, being too harsh in its action, inducing hydragogue catharsis at the same time. While in extreme doses it may cause acute gastro-enteritis, in small doses it stimulates normal functional activity of the stomach, influencing the glandular function of the entire gastrointestinal tract. In the **atonic dyspepsia** of enfeebled conditions of the stomach, with bad breath, bad taste in the mouth, furred tongue, anorexia and constipation with a sense of weight in the stomach, and occasional colicky pains in the bowels, it is a good remedy. Ten drops of the tincture in two ounces of water, a teaspoonful every two hours, will relieve this common train of symptoms. It has been used in cholera infantum and other summer diarrheas of children with good results. It is advised in the tenesmus of dysentery, and in the diarrhea of exhausting diseases.

SINAPIS.

Sinapis nigra, Sinapis alba

Synonyms—Mustard, white, black or yellow Mustard.

PREPARATIONS—

Powdered Mustard. Oil of Mustard. Dose, from one-twentieth to one-tenth of a minim.

CONSTITUENTS—Volatile oil.

Physiological Action—Mustard is emetic, stimulant and actively revulsive with marked anodyne properties. Its application to the skin produces intense burning, violent inflammation, and if persisted in too long, sloughing or ulceration. Taken into the stomach in large quantities, if emesis be not produced, it causes a burning sensation and a mild form of gastritis.

Specific Symptomatology—For external application it is indicated in **acute** cutting **pain** local in character, usually intermittent and usually present as the result of rapidly developing acute inflammation, but dull, steady and constant pains or soreness, slowly developing and persistent, are not readily relieved by its application. *Turpentine* externally is of service in these cases.

Internally it is indicated to excite vomiting when non-corrosive poisons have been taken, when a foreign body is lodged in the esophagus, or when there is great distress from an overloaded stomach.

Administration—In the use of *mustard* for counter-irritation, in cases of acute pain, it is desirable to obtain its sharp effects as quickly as possible. In order to do this, a fresh article should be procured, one in which the pungency is sharply indicated by its action on the nostrils and eyes, since *mustard* kept in a paper package on the shelves for weeks is inert from loss of the volatile oil. Vesication must be avoided, as the blisters thus caused are of no advantage, and exceedingly painful and difficult to heal. The white of an egg rubbed up with *mustard* and a little water, will produce a poultice which will not readily blister.

When mild counter-irritation only is desired, which is to be prolonged

for some hours, a poultice is made in the proportion of one part of *mustard* to four or six of linseed meal or flour. This is not, however, effective in acute pain, but only where there is soreness or prolonged distress. *Vinegar* and *mustard* also make a good poultice for prolonged use, as *vinegar* destroys an excess of activity of the *mustard*.

For a hot *mustard* pediluvium, a tablespoonful of the powder is stirred into a gallon or two of hot water, in which the feet are immediately immersed.

For a general *mustard* bath, two or three tablespoonfuls of *mustard* are mixed in a full bath. For a child one tablespoonful will be sufficient, care being taken to protect the eyes of the patient from the vapor.

Therapy—A teaspoonful of mustard in a bowl of warm water will produce active and immediate **emesis**. This should be followed by another bowl of warm water alone, which will continue the evacuation and wash out any remaining *mustard*, as even then the burning sensation from the local effects of this substance with a few patients is hard to bear. Emesis must be obtained as soon as possible after the ingestion of the *mustard*. An emetic dose must not be allowed to remain in the stomach, as inflammation may follow.

Mustard has but little therapeutic influence when administered internally. It does not seem to increase the tone of the gastro-intestinal canal, or promote the action of the secretory or excretory glands, or assimilative organs, to any great extent, but its external use is common.

In the treatment of **acute pleuritis** a warm poultice applied over the affected side sufficiently large to much more than cover the diseased area, will usually relieve the pain at once, and a large poultice is always more effective than a small one. It may be necessary to repeat its application within twenty-four hours, but if vigorous direct treatment is adopted, this is seldom necessary.

In **bronchitis** or **pneumonitis** in the initiatory stages, a quick poultice of *mustard* will exercise a good influence, but it does not give the immediate relief experienced in **pleuritis** or **pneumonitis** where acute pain is a prominent symptom. It should be followed, in the former conditions, as soon as the sensitiveness of the skin will allow, by

persistent heat, moist or dry, as seems indicated.

In acute **pain** in the **heart**, either in angina pectoris or from other cause a sharp *mustard* poultice is essential.

In acute **stomach** pains and in intestinal colic, or pain in the abdomen from any cause, a large hot *mustard* poultice will be of much service. In all cases where *mustard* is used it is only auxiliary to other prompt treatment, as its influence is usually transient.

A most efficient measure in **congestive headache**, or in headache from any cause with fullness of the cerebral vessels, is a *mustard* poultice on the nape of the neck.

Spinal irritation is most effectively treated by the use of a succession of these poultices. On the first day of the treatment one is applied on the back, across the upper third of the spine; on the second day across the middle third, and on the third day across the lower third, producing thorough sharp counter-irritation but no blistering. On the fourth day it is applied at the top of the spine again and the same course followed as before. This may be continued for two weeks or more if the skin is sufficiently restored in the interim, between the poultices. This course will most materially assist other measures adopted in the treatment of this condition.

A hot *mustard* foot bath is of great service in **congestive chill**, also in the chill at the onset of acute fever, or acute inflammation of any character. It produces immediate derivation, assists in equalizing the circulation, acts as a diaphoretic and perceptibly checks the progress of the disease.

In the **recession** of the rash of **eruptive fevers** no measure is more prompt than a general hot *mustard* bath, which should be continued until a mild redness covers the entire body.

At the onset of acute **cerebro-spinal meningitis** the disease has been completely aborted by the prompt use of a hot *mustard* bath. In some cases the patient may be wrapped in a blanket wrung out of hot *mustard* water, until the skin is reddened.

In conditions where there is a constant tendency for the skin of the

legs to become cold, and the muscles to cramp during the night, a hot *mustard* foot bath at bedtime is of direct benefit.

In **arrest** of the **menses** from cold, a sitz bath strong with *mustard* will sometimes produce an immediate restoration of the flow. It is always of assistance to other measures. It is sometimes necessary to take this bath each night for a week preceding the time the menses should appear and continue it until that result is obtained.

COPPER SULPHATE.

Formula— CuSO_4 .

Synonyms—Blue Vitriol, Bluestone.

Therapy—Given in doses of five grains dissolved in water the sulphate of copper is a **prompt emetic**, acting quickly and without irritation. It is used, though but seldom now for any purpose, in the same conditions for which the sulphate of zinc is advised, except as an emetic for the evacuation of the stomach after poisons are taken.

It was claimed that its influence in small doses upon the stomach would increase the flow of gastric juice, as it does of saliva in the mouth and also of the intestinal juices. Its use is limited by the irritation produced even by small doses. It has been advised in **gastric ulcer**, in atonic conditions of the stomach and bowels with loose, watery **diarrheas**.

This agent is one of the chemical antidotes for phosphorus in poisoning by that agent. It is administered carefully, as the agent itself is poisonous.

Externally it acts upon **raw surfaces** and **open sores** and **wounds** as a caustic and antiseptic, and is somewhat painful and irritating in its action. It serves a good purpose in solutions of one grain to the ounce of distilled water in purulent inflammations of the eyes, and in all catarrhal and ulcerative conditions of mucous membranes wherever located.

ZINC SULPHATE.

Formula,— ZnSO_4 .

Physiological Action—This agent is an active **irritating emetic**. It is used when profound and immediate emesis is necessary, as after the ingestion of poisons. When given in overdoses, the vomiting is extreme and there is persistent retching. If the stomach is in a state of irritation when evacuation seems imperative, the stomach pump or irrigation should be used and this agent should be avoided.

Therapy—With a very torpid stomach, heavy coating on the tongue, and pale, flabby mucous membranes, this agent will produce a good result, by arousing the action, unloading morbid secretion and stimulating the nervous influence of the stomach, but vegetable emetics devoid of irritating properties will accomplish the same result in a much more satisfactory manner.

It was in use at one time in the treatment of **gastric catarrh**. It was given in small dose, probably not exceeding one-fourth of a grain. It should be beneficial in this disease from its inherent properties, but we have not used it in this condition because we have not needed it.

It has been given as an emetic in **membranous croup**, and in **spasmodic croup** and **whooping cough** and in other laryngeal disorders. The agent has antiseptic properties, is very astringent, and is said to be tonic to the surfaces to which it is applied. It is widely used as a topical application or as an injection or wash.

It is so used in **gonorrhoea** with *hydrastis* in the proportion of about one grain to the ounce. It is used in leucorrhoea, and in other catarrhal or purulent discharges. An excellent combination for the eyes is made by dissolving one grain of hydrastine hydrochlorate and five grains of zinc sulphate in an ounce of rosewater. From five to ten drops of this is slowly instilled into the eye twice daily. It is useful in purulent conjunctivitis. It is used for indolent ulcers and gangrene, and the dried salt is made into an ointment for application to urethral caruncles, warts and fungoid growths, in lupus and in condylomata. In these cases at least one-fourth of the ointment should be of the sulphate. It should be used with care. In ulcers a much milder ointment may be used.

GROUP IV.
Agents Acting upon the Stomach.

CHAPTER VII

**Agents Used as Assistants to Gastric or Intestinal
Digestion-Digestives.**

PEPSIN

PANCREATIN

PAPAW

INGLUVIN

DIASTASE - TAKADIASTASE

PEPSIN.

Occurrence—Pepsin is the natural enzyme—a proteolytic ferment, obtained from the glandular structure of the lining membranes of the fresh stomach of the domestic hog—*sus scrofa*. It is an essential constituent of the gastric juice.

Description—Pepsin occurs in the form of scales, granules or as an amorphous powder. It is yellowish-white, translucent, has a characteristic odor and a peculiar, moist, elastic feel to the touch. To the taste it is slightly acid, bitter, saline. It is soluble in 100 parts of water, but by the addition of hydrochloric acid its solubility is greatly increased. It is insoluble in alcohol and chloroform.

It should have a digesting power equal to 3,000 times its own weight of freshly coagulated egg albumen.

Administration—It is given in the form of the powdered pepsin or as saccharated pepsin in doses of from three to ten grains. The essence of pepsin in dram doses is an excellent form for administration.

Physiological Action—Pepsin digests the nitrogenous constituents of food, converting them into peptones. Its action is increased by the addition of hydrochloric, lactic and citric acids.

Therapy—A deficiency of the digestive ferments in the stomach, evidenced in **painful** or **imperfect digestion**, is largely supplied by the administration of pepsin. Whenever severe disease induces inactivity of the glandular organs of the body, there is apt to be inefficient action of the peptic glands, and consequently a deficiency of pepsin. This is the case after **severe shock**, either from injury or from surgical operation, in **neurasthenia**, and in **brain** or **spinal disease**; also in severe acute **inflammatory disease**, in **protracted fevers**, in **heart disease**, in **diabetes**, and especially in **gastric ulcers** and **cancer**. In all these cases, there being atonicity with enfeeblement of functional operation, pepsin in conjunction with tonics, stomachics and hydrochloric acid is often demanded.

Infants fed on artificial food are benefited by the use of pepsin. It may be given during or at the end of the meal, and is often productive of excellent results.

Where malnutrition is marked, and the growth and development of the child retarded from this cause, this agent is sometimes the means of accomplishing a complete cure. In **diarrhoea** in childhood from indigestion, a most important factor in the treatment, is the perfect digestion of the food. A little skill on the part of the physician can often so adjust the administration of pepsin as to satisfactorily accomplish all desired results in such cases, often without the use of astringents. Mild intestinal antiseptics are often necessary in conjunction.

It is argued that artificial digestion, by doing the work of the gastric juice, is apt to produce impairment of the function of the gastric glands because of inactivity or non-use. It is the observation of those who have used pepsin, pancreatin and papoid, that they act not only as assistants to the digestive processes, but that they stimulate the gastric glands, and impart real tone and renewed functional energy. This may be in part due to the immediate improvement in general nutrition from the rapid appropriation of the more perfectly digested food. These digestives exercise a sedative influence also upon the stomach when there is nausea and irritation due to the presence of undigested food.

The partial predigestion or peptonizing of the food of infants suffering from malnutrition is generally recognized as an essential process. This process is adopted with invalids suffering from gastric disorder, and is

advised also in preparing milk for administration per rectum, when no food can be introduced into the stomach. In this case a few grains of pepsin added to the prepared enema, whatever its character, is of great assistance in its appropriation.

Pepsin in solution has been used to dissolve the false membrane in croup, and the exudate in diphtheria. It has also been injected into the urinary bladder to dissolve blood-clots, and applied to indolent ulcers to destroy unhealthy tissue and stimulate the surface to normal granulation.

PANCREATIN.

Occurrence—Pancreatin is found in the fresh pancreas of warm-blooded animals, and is obtained for general use from the pancreas of the hog.

CONSTITUENTS—Pancreatin is a mixture of several enzymes, consisting of the ferment **trypsin**, similar to that of pepsin, proteolytic in character, but active in an alkaline medium; a starch digesting ferment—**amyllopsin** resembling diastase or ptyalin; a milk digesting ferment, and a fat emulsifying ferment—**stearopsin**, closely allied to that found in the bile.

A solution of pancreatin is prepared, called **Liquor Pancreaticus**. The fresh pancreas is finely minced and exhausted with water, strained and treated with dilute alcohol for preservation. This is often more active than the powder.

Description—Pancreatin is a grayish or yellowish amorphous powder, with a characteristic odor and taste, soluble in water, insoluble in alcohol and chloroform.

Administration—It is most active in an alkaline medium, is destroyed in a strongly acid medium, and is consequently best given from two to three hours after eating, when it assists the intestinal digestion. Dose, from two to twenty grains.

Physiological Action—It will peptonize various articles of food, such as milk, oysters, broths and gruel, and will emulsify oils and fatty foods

intended for rapid nutrition.

Specific Symptomatology—Pain in the intestinal canal, beginning an hour or more after eating, and continuing for two or three hours; eructations of fatty foods; passage of undigested fats with the feces, are all indications for the use of pancreatin.

Without these indications it may be given in the slow convalescence of wasting disease, where anorexia and malnutrition are present and not corrected by pepsin and stomach tonics.

Therapy—The agent is of some use in **gastric inactivity**, but in the stomach, there is but little influence it may exercise that is not fully exercised by pepsin.

However, if administered at the beginning of a meal, it will sometimes exercise a full beneficial influence before enough of the gastric acids are poured out to retard its action—an influence sometimes more satisfactory than that exercised by pepsin, but as the acidity of the stomach fluids is apt to retard or destroy its influence, it is best given an hour or more after meals if there is **impairment** of the **intestinal digestion**, where it acts to the best advantage. If the stomach digestion is nearly complete, a dose of magnesium or sodium carbonate or bicarbonate may be given to neutralize any excess of acid.

It will accomplish desirable results in **lienteric diarrhea** and in the diarrheas of infants where there is marked emaciation, the stools containing fat cells in abundance.

Pancreatin, the liquor pancreaticus, or the powdered pancreatic glands are advised in the treatment of **diabetes mellitus**. It is possible that some benefit has followed this method of treatment in cases where the pancreas was diseased, but the author has but little confidence in it in the larger proportion of cases.

PAPAYA.

Carica papaya.

Synonyms—Papaw, Pawpaw, Melon-tree.

Part Employed—An active principle obtained from the juice of the unripe fruit.

CONSTITUENTS—

The active principle has been variously named **papain**, **papaotin**, **papoid** or **caroid**. It is precipitated by alcohol, is a nitrogenous principle approximating in character a true albuminoid, and is associated with vegetable peptones and a milk-curdling ferment.

Description and Administration—It is a powder of cream-white color, almost odorless and with but little taste. It is easily soluble in water and also in glycerine. Dose, from one to three grains. A larger dose may be given where immediate effects are desired, but is seldom necessary. It is sometimes advisable to repeat the dose in from one to two hours.

The natives have long had a custom of wrapping fresh meat in the leaves of the *pawpaw*, claiming that it prevented decomposition, softening it and materially assisting its digestion. They also applied the juice to open and offensive wounds, to cleanse them and promote healing.

Therapy—The indications for the use of papoid in treating digestive disorders may be summarized somewhat as follows:

Actual and relative deficiency of the gastric juice or its constituents.

(a) Diminished secretion of gastric juice as a whole; apepsia, anemia and deficient blood supply; wasting diseases.

(b) Diminished proportion of pepsin; atonic dyspepsia; atrophy of gastric tubules.

(c) Diminution of hydrochloric acid—achlorhydria; carcinoma.

(d) Relative deficiency of gastric juice; overfeeding.

In gastric catarrh.

(a) Where there is tenacious mucus to be removed, thus enabling the food to come in contact with the mucous membrane.

(b) Where there is impaired digestion.

In excessive secretion of acid, to prevent duodenal dyspepsia.

In gastralgia, irritable stomach, nausea or vomiting.

In intestinal disorders.

(a) In constipation due to indigestion; in diarrhea, as a sedative.

(b) In intestinal worms. (This claim the writer has not personally verified, but as the intestinal mucus which shields the worms is removed by papoid, it is easily understood that their destruction would naturally result, or would be more readily accomplished after its administration.) Hutchinson treated tapeworm successfully with five grains of the dried juice twice daily.

In infectious disorders of the intestinal tract.

(a) Where there is abnormal fermentation, by its antiseptic action, which may be heightened by combination.

(b) Where there are foreign substances present, its detergent effect may be utilized in clearing these out from the intestinal canal by their digestion.

In infantile indigestion. Here papoid not only readily peptonizes cow's milk, but the resulting curds are also rendered soft and flocculent, resembling those of breast milk.

In case of obstruction of the esophagus by the impaction of a piece of meat or gristle, a paste of papoid and water produces softening in a short time.

Nearly all of the above statements have been confirmed in the experience of the writer during ten or twelve years' constant use of the agent, alternated with, but seldom in conjunction with the animal ferment.

Where papoid or any form of *pawpaw* is used as a digestive agent, there may be observed an increase in the amount of uric acid when that substance is deficient, and if oxalates are present they are diminished.

It is a reliable remedy for **general distress** or **pain** in the **stomach** and bowels during the process of digestion. It can be prescribed almost without discrimination in these cases, and the results are in some cases surprising. It may be given during the meal, and pain not occur

for an hour. At that time, its influence being probably spent, another dose will continue the effects of the first. Its effects become permanent usually in acute or subacute cases after a few days, when it may be discontinued.

It is not a remedy for pain occurring before meals or after the food is digested, or for gastric pain occurring without regard to the taking of food—continuous pain and distress—since these pains are either neuralgic or organic in character. The agent is specifically one for functional disorder. It is a most valuable agent in **catarrh** of the **stomach** and in the **digestive failure** accompanying continued fevers. It stimulates the stomach in the beginning of convalescence, and in some cases increases the appetite and promotes absorption of the digested pabulum.

It is serviceable in the digestive **disorders of pregnancy**, stimulating appropriation and assimilation. In those cases where the digestion is seriously interfered with during the last three months of pregnancy, it being almost impossible, because of the great pain induced, for the patient to take any food into the stomach, the condition will be entirely relieved by this agent within a few days, the patient being enabled to eat large meals of meat without discomfort and with satisfaction.

The agent is a **solvent of fibrin**, and has been used to **dissolve false membranes**, old hardened tissue, warts, and tumors, and has been satisfactorily applied to **epithelioma**.

Mortimer Granville reports several cases of **cancer** of the **stomach** treated very satisfactorily with this agent. In **diphtheria** the powder serves a most useful purpose in dissolving and permitting the removal of the densest exudate, which in some cases covers the pharynx and naso-pharynx, and occludes the nares. Good results have been reported by Jacobi, Hubert and others, and have come under our own observation. Kota and Asche are reported in the *Prescription* as having observed more than a hundred cases treated with success by this method.

Empirically it has been used in a few cases of **nephritic colic** with the most marked results. It will diminish the formation of the oxalates, al. though in cases where tried there has been an increase in uric acid.

INGLUVIN.

Occurrence—Ingluvin is the active principle derived from the gizzard of the domestic fowl—*ventriculus eallosus gallinaceus*. The lining structure of the chicken's gizzard is a dense, hardened membrane, surrounded by powerful muscles. The motion of these muscles upon the contents of the gizzard is accompanied by the continuous exudation of a strong, organic fluid from glands located in the lining membrane. This fluid acts preliminarily upon the food before it reaches the gastric juices in the stomach, and also assists in the complete digestion of the food when there. It exercises in part the function of pepsin, as well as of the ptyalin of the salivary secretion.

Description—The substance occurs in scales or as a coarse granular powder, yellowish or brownish-yellow in color. It is bitter, slightly acid, and has but little odor. Dose, from three to twenty grains.

Therapy—The digestive powers of this agent are not as wide as those of pepsin, but it is efficient in cases where there is **indigestion** with **nausea** and gastric irritation. **Pain** in the **stomach**, with the above conditions, is relieved by this agent. In the deficient action of the stomach accompanied with **nausea** and **vertigo** in **neurasthenics** this is a useful remedy, as it certainly acts as a tonic or stimulant, increasing the functional activity of the stomach and soothing both local and reflex irritation. It is of much value in the **vomiting** of **infants** from local or undetermined causes. In these cases thirty grains may be stirred into half of a glass of water and a teaspoonful of this given every ten, twenty or thirty minutes. In small infants equal parts of Ingluvin and bismuth may be stirred together in the water and administered in smaller doses. It is given in capsules when large doses are needed in adults. This combination is of much efficacy in **cholera infantum** and in other protracted diarrheas with nausea. Sodium bicarbonate should be added where there is excessive acidity.

In the **vomiting** of **pregnancy** it has won its highest reputation and should be given in doses of from five to twenty grains before meals. It may be given in two ten-grain doses, one before and the other at the end of the meal, when the nausea is accompanied with indigestion. If the nausea is constantly present it may be given at any time at short, regular intervals, but with best results when the stomach is empty. In these cases when there is excessive nervous irritation with hysterical

phenomena, an active nerve sedative will greatly facilitate the action of this remedy. Dilatation or mild cauterization of the os uteri may remove one of the causes of nausea, the Ingluvin afterwards quickly soothing the stomach.

When given as a digestive it should be given during or after the meals. The agent certainly exercises an influence which differs widely from that of pepsin and pancreatin, and yet is fully as important and valuable.

DIASTASE - TAKADIASTASE.

Diastase is one of the principles of the digestive fluids of the animal body. It appears during the fermentation of starchy substances—grains. It is one of the enzymes capable of being classed with pepsin and pancreatin of the digestive group, Its especial function is the conversion of the starch molecule into a sugar molecule.

Takadiastase is a form of diastase which results from the growth, development, and nutrition of a distinct microscopic fungus known as the *eurotium oryzae*.

Administration—Two grains of Takadiastase is the usual dose, although five grains is often given. The dose is usually given in a capsule during or at the end of the meal, In liquid form one dram contains two grains.

Physiological Action and Therapy—As stated the agent possesses a diastatic and fermentative property. Its specific field is the correction of diastatic imperfections. It converts 100 times its weight of dry starch into sugar. It digests starches and prevents constipation, flatulence, malaise, insomnia, headache and vertigo, which result from the ptomaines of undigested and decomposed starch.

While starch digestion is its direct field of action, it is found of much benefit in apepsia—in incomplete digestion from atonicity. It is found to be a most useful remedy, and yet so recently has it been given to the profession, that complete observation cannot be said to have been made. It is believed that a much wider influence will yet be found to be exercised by it than has yet been observed.

Note—Other well known assistants to digestion are hydrochloric acid, described in another chapter, the malt extracts, lactopeptine and peptenzyme. The two latter preparations are proprietary, and the writer has no perfect knowledge of their composition, although they have served him a good purpose at times. Those described are in common use.