

GROUP I.
Agents Acting on the Nervous System.

DIVISION 1.
Sedatives and Depressants.

CHAPTER I.
Sedatives Commonly Used in the Control of
Fevers—Antipyretics.

GELSEMIUM.

VERATRUM.

RHUS TOXICODENDRON.

ACONITE.

BRYONIA.

SYNTHETIC DEPRESSANTS.

Note—During the entire history of the evolution of the present method of direct prescribing, the search of every investigator has been after a single remedy which may be applied to each of the common conditions which are found among both premonitory symptoms, and among those subsequently developing. The investigator, in the course of his work, develops an innate ability to quickly determine which of these indications are basic, and which are secondary. He endeavors at once from these, to determine what the disease is, and what is its cause.

Failing in this in the first examination, he does not under any circumstances wait until the entire condition can be determined without doubt, and the disease named, before he prescribes, but he at once prescribes for that most conspicuous condition, or for two or even more, if they seem to be sufficiently plain.

By this course, he is convinced that conditions are at once controlled which would have led to very important, serious, or, perhaps, fatal disorders. Prescribing for the total disease by name has led many a physician into error. It is important that he know what the group of symptoms is called, as soon as possible, but he must never lose sight of the specific indications present in that individual which require immediate attention.

With those of us who are trained in this method of practice, the first condition in acute disorders to which our attention is directed is the circulation. We endeavor to keep this always as near as possible to the normal point. The severity of any acute disease we are convinced, is in proportion to the variation of these conditions from a normal standard. In proportion then as we are able to bring the temperature to, and keep it near to the normal, are we able to restrain disease processes, or to remove the results of these processes in which the circulation and temperature are influenced.

Excessive action of any character in any of the body processes must be restrained. A violent impression will produce a correspondingly violent reaction. The persistent, steady effects of small, frequently repeated doses of medicine, with no reaction, are in every way superior to the violent effects of large doses. The violence of the disease is to be fully considered, however, and the dose prescribed accordingly.

The first four of the above named remedies are Motor Depressants, and are of first importance in the treatment of fevers. They may well be called Special Sedatives.

The progress of fever, its unarrested violence, is often the cause of localized inflammation—not always the result of it. Suppressed secretion is the cause of the fever in many cases, and the fever in time determines which is the susceptible organ, for there inflammation becomes seated.

Again, the severity of any acute inflammatory disorder depends upon the severity of the fever, and the control the physician is able to exercise over the fever determines the amount of control he exercises over the processes of the inflammation. No fever, however mild, notwithstanding frequent arguments to the contrary, should come to the knowledge of the physician, especially in children, without its being at once antagonized by the properly indicated remedy.

Masius and Stockweiss, Semmola., and others, confidently assert that fever is not an essential process to natural elimination and must be restrained.

In continued fevers the reaction which will follow the powerful depressing effects of large doses of active coal tar antipyretics is more

injurious than the fever processes, if such reaction occurs. If not, the depression is apt to be fatal.

In continued fevers the steady impression induced by small but frequent doses of those agents which restrain heart action and heat production by their tonic effect upon the nerve centers and vital processes, is in every way superior to the large doses of the commoner synthetic antipyretics. The depressing action of the latter, without compensation, is entirely too great.

GELSEMIUM. *Gelsemium sempervirens,*

Synonym—Yellow jasmine.

CONSTITUENTS—

Gelsemine, Gelsemic Acid, Gelseminine, Volatile Oil, Gum, Starch, Resin.

PREPARATIONS—

Extractum Gelsemii Fluidum, Fluid Extract of Gelsemium. Dose, from one-half to ten minims.

Tinctura Gelsemii, Tincture of Gelsemium. Macerate and percolate with dilute alcohol. Dose, from five to thirty minims.

Specific Medicine Gelsemium. Dose, from one-third to ten minims, prescribed, ten minims to five drachms in four ounces of water. Teaspoonful every half hour to two hours.

Administration—*Gelsemium* is a prompt remedy if given in sufficiently active dosage. The excellent results obtained by the older physicians were obtained from full doses. Children are more susceptible to its action than adults, and with them the smaller dosage is applicable. In spasms the maximum dose is needed. If toxic effects are obtained, they can be readily observed and antagonized with no harm to the patient.

Gelsemium is quickly eliminated from the system, largely through the kidneys, consequently the effects of single doses are quickly dissipated, and medicinal doses must thus be given frequently, especially in childhood, to insure good results. Single full doses should be given only to adults.

The remedy can be given in single doses of from fifteen to twenty

minims, but any dose of three drops or more must be watched for physiological effects, and diminished when these appear.

Physiological Action—Usually upon the administration of an overdose of this agent there is at first some excitement, followed by depression of the nervous system, with dizziness, amblyopia, double vision, dilated pupils, exophthalmos, complete prostration, with drooping of the, upper eyelids from paralysis of the levator palpebrae superioris and inability to keep the jaw closed. The temperature is reduced, the force and frequency of the pulse is lowered, with dyspnea, the breathing being accomplished with much effort, and death usually results from paralysis of the respiratory muscles, including the diaphragm. The influence appears to be exercised upon the base of the brain, on the brain, on the splanchnic nerves and on the spinal cord. It inhibits the nerve force of all the visceral organs and relaxes the sphincters. Convulsions are one of the results of poisonous doses in animals. In man, while there is loss of sensation and motion, the patient is conscious of what is going on around him, unless the symptoms are prolonged, when deficient oxygenation of the blood, with accumulation of carbonic acid, will produce coma.

In experiments made upon pigeons the effects are very similar to those resulting from destruction of a portion of the cerebellum. There are irregular backward movements, tremblings, flutterings of the wings, preceding complete paralysis.

Gelsemium in lethal doses paralyzes the nerves, both sensory and motor. The motor nerves are first influenced, the paralysis of sensation more slowly following. The writer observed a case of poisoning where the patient had taken sixty minims of the fluid extract within forty-five minutes. A sensation of general oppression occurred rather suddenly. The patient rose to her feet, noticed that vision had failed almost completely, walked two or three steps, then fell in a mass upon the floor in a state of complete muscular relaxation. There was no alarm or fear, a rather tranquil feeling mentally, and in this case there was no great difficulty of breathing, although we have observed dyspnea from single doses of two or three minims of the fluid extract. The recovery of this patient was rapid, although muscular weakness was present for several days.

The primary influence of *gelsemium*—that which probably always

underlies its remedial influence upon any condition—should be borne steadily in mind in its administration. Its direct action is upon the central nervous system. It diminishes the blood supply of the brain and spinal cord by lessening nerve power, inhibiting the nerve control, slowing, retarding or staying the functional action of the nerve centers over the nerves themselves, influencing them steadily in the line of their physiological activities. It thus subdues all forms of nerve excitation of whatever character, or wherever located. It inhibits excessive nerve action. Nerve irritation, whether direct or reflex, comes uniformly under its influence.

There must be, then, increased nerve tension, with its consequent irritation, and usually, local hyperemia or increased and undue blood supply in sthenic conditions. It is not the remedy when asthenia prevails.

It may be well to introduce a caution which is most important, if good results be secured from the action of this remedy. *Gelsemium*, more than perhaps any other of our agents, suffers from the fact that the market may be supplied by worthless preparations of the remedy. Any fluid extract or tincture made from the dried drug does not contain the full virtues of the plant, and if the drug has been long gathered will be almost inert. The green root should be gathered in the early spring, and its medicinal virtues should be immediately extracted. The green root fluid extracts, normal tinctures, and the specific medicine *gelsemium* represents the fullest possible virtues of the drug. Further, more, fluid preparations alone, of *gelsemium*, are prescribed by our physicians, as clinical experience has conclusively demonstrated to us that the alkaloid gelsemin does not contain the full virtues of the drug.

Specific Symptomatology—The characteristic syndrome which demands the administration of *gelsemium* is found in acute determination of blood to the brain—**acute cerebral hyperaemia**—manifested by a bright flush upon the face, bright eyes with contracted pupils, with a busy restlessness and excitability. With these there is a high degree of nerve tension and consequent irritation, with increased heat of the head and face. There is present in acute cases, elevated temperature, hot skin, usually dry, a sharp and quick pulse, but not always hard. Given in sufficient doses it slows the heart's action, reduces the temperature and quiets the respiration, speedily producing a restful sense of tranquility.

Increased arterial and nervous tension and local or general irritation present in many cases of local inflammation, especially of the kidneys, are specifically met by this agent.

Therapy—In the **acute fevers of childhood**, some evidences of nerve irritation are seldom absent. Here the agent exercises its happiest influence. **Muscular twitchings** with the above specific symptoms demand this remedy. If **spasms** supervene, the dose is increased in size and frequency until they are controlled. Often no other agent need be given.

The direct **contra-indication** is congestion, either of the nerve centers alone, or of any organ. The phenomena of dullness, hebetude, obstructed circulation, whether local or general, with normal or lowering temperature, with increasing weakness—asthenia—must be treated with the antitheses of *gelsemium*.

In **acute inflammation** of whatever organ or part, there is likely to be a time during its early course when *gelsemium* is the positively indicated remedy. Its administration should cease when its indications are no longer apparent.

In acute inflammations, especially those of childhood, or in persistent fevers, where reflex irritation threatens to induce convulsions, other fever remedies should usually be suspended for this until all irritation has abated, or until its beneficial action is no longer conspicuously apparent. If its physiological effects appear at any time during prolonged or protracted fever or inflammation, it should be suspended temporarily, or permanently, within the judgment of the prescriber, as its full physiological influence persisted in may impair nerve tonicity, and general tonicity of the muscular system, or of the heart, to such a degree as to retard recovery, or at least to prolong convalescence.

Fevers of nearly all kinds in adults, in the early and sthenic stage, are influenced by *gelsemium*, because the above conditions to some degree may be a part of the pathology of increased temperature.

The late Mr. Adolphus claimed that *gelsemium* exercised its first influence upon the heat centers in the cord and medulla. He always gave *gelsemium* for its influence here, in cerebro-spinal meningitis. It's

indications were the bright eyes, contracted pupils, the patient inclined to crowd the back of the head in the pillow. His results were highly pleasing. Recent reports in the treatment of **cerebro-spinal meningitis** in children are proving that *gelsemium* given in conjunction with *echinacea* is proving to be the very best treatment. The results from a large number of observers is very convincing. Where the opisthotonos is extreme, they give both this and *lobelia*—in some cases hypodermically. The relaxation is definitely induced by this method, and the spasms controlled. The use of these remedies in this disease is very rational.

In acute **cerebral, spinal, cerebro-spinal, or meningeal inflammations**, its symptomatology is usually strongly marked at first. If in adults, it may be given at first in pronounced doses, lessened as the symptoms abate or as its physiological action appears. In later stages of these disorders the dosage should be much smaller, or some remedy more directly indicated should be substituted. It should not usually be continued beyond the sthenic stage.

There are some forms of **nervous wakefulness** in which no better soporific can be given than this agent. Begun early in the evening, a few full doses will produce tranquillity and restful repose. If there be busy excitability and extreme restlessness, its influence will be greatly enhanced by combination with *hyoscyamus*. Nervous headache, which drives away sleep, can often be removed and sleep satisfactorily induced with this remedy. The nervous system is in part restored during sleep so induced, and the patient is rested.

In nervous excitation of women consequent upon **acute peritonitis, ovaritis, salpingitis, metritis, puerperal fever, or mastitis**, this agent has no peer. It is especially commended in the early stages, and if hysterical phenomena develop. Given in the early stages in pronounced, but carefully watched dosage, it will occasionally abort the entire condition, especially if the cause has been removed by proper methods. Extreme full doses are sometimes admissible at first.

In **puerperal convulsions** this agent has a conspicuous place. If given in accord with its exact symptomatology, in sufficiently large, often heroic doses, but it must be exactly given. The symptomatology of *veratrum* is more often present than that of this agent in eclampsia or the two may be combined.

In **intestinal inflammation** it has not seemed to me to be often indicated for the actual fever, and yet the reflex nerve phenomena, especially of children, often quickly demand it. It controls nervous or spasmodic pain in these conditions, and I have found it of great service in **appendicitis**. It seems to retard the inflammatory processes. It is of great advantage in the **tenesmus** of **dysentery**, sometimes allaying this troublesome symptom in a single full dose. Usually several frequent, pronounced doses are demanded.

In inflammation within the chest I have not used the agent as often as **bryonia** and **aconite**. Others speak highly of it, and there are conditions when the demands for them are too plain to be ignored. Certain forms of **asthma** are relieved by it quite promptly. Others have had good results from its influence in **whooping cough** and in **laryngismus stridulus**. It controls certain forms of **spasmodic cough** and cough from reflex irritation.

Dr. Bugg, of Georgia, reported a case of hiccough which developed with a severe bronchial cough from a cold. It had continued without cessation for forty-eight hours until the patient was in a condition of exhaustion. The doctor gave him—a previously strong negro—fifteen drops of **gelsemium**, because his eyes were “very bright and the pupils contracted to pin heads.” This medicine was repeated until the spasm was relieved.

In **acute cold**, the whole system is influenced by it, the coryza being marked and all the usual symptoms pronounced. **Gelsemium** given in two or three drop doses, every half hour for a few doses, will often give relief most promptly and satisfactorily. In **epidemic influenza** it has been generally used with signal results in nearly all cases.

In **acute nephritis** it is certainly a sovereign remedy. It at first meets a wide range of the symptoms in a pronounced manner. It reduces the arterial tension, often at once, and consequently the quantity of albumin. It exercises a permanent, soothing influence upon nerves of the entire urinary apparatus in a most satisfactory manner. The quantity of urine is increased, the general nervous phenomena are delayed, the fever abates, and any pain or spasms are controlled. My practice has been to give **cimicifuga** with the **gelsemium** in acute nephritis from cold, but I am positive the beneficial influence could not

be obtained without *gelsemium*.

In **post diphtheritic** or **post scarlatinal** nephritis it controls any undue irritation, but *belladonna* acts upon the actual condition more satisfactorily than *gelsemium*. In **post puerperal nephritis**, I should certainly fail of a cure without this agent. In three very bad cases I gave *gelsemium* in full, large doses with the best results. It anticipates the uremic symptoms, preserves tranquility of the nervous system, and wards off the otherwise almost inevitable convulsions. It is of especial service in the spasmodic retention of urine of hysterical women, or in acute urinary irritation.

Spasmodic pain in the urinary organs has no more reliable antidote than *gelsemium*. Spasmodic pain in the bladder, or in the cystic sphincter, is controlled quickly, and **acute cystitis** should be treated with *gelsemium* from the first. The soothing influence of the agent upon the entire nerve distribution of these organs is soon evident. In **spasmodic urethral stricture**, where pain is excruciating and nothing but a catheter will apparently do any good, *gelsemium* in full doses is often all sufficient. I have had two marked cases where the catheter could not be passed, in one case, even under chloroform, where full repeated doses of *gelsemium* relieved the irritation and retention within two hours. I give from two to five drops of the Specific Medicine every twenty or thirty minutes, even if mild physiological symptoms appear. In the **tenesmus of chronic catarrhal cystitis**, it is excellent.

In **Gonorrhoea**, in the acute stages, it is a very prompt remedy, especially if used in conjunction with irrigation of the urethra. This remedy alone will often produce much relief in twenty-four hours. Where there is much excitement with **chordee** no remedy is more prompt.

Spasmodic types of **ovarian neuralgia** and **neuralgic dysmenorrhea** are controlled with *gelsemium*. It relieves uterine colic and exercises a satisfactory influence in many cases as an emmenagogue, where nervous excitability is present.

In **vomiting of pregnancy**, Dr. Henderson has given ten drops of *gelsemium* hypodermically in extreme cases, controlling the vomiting when the physiological influence appeared. Caution is necessary, especially in asthenic cases.

In **confinement** it dilates a rigid os uteri, especially when the parts are dry and hot, and the edges of the os are hard, thin and unyielding, where nervous excitability is present. It soothes the general nervous system at this time, overcomes erratic, sharp, cutting, nagging pains, that seem to be of no benefit, preserves the integrity of the nerve force, and if the pains are exaggerated, and the labor does not advance, the labor is sometimes satisfactorily suspended or retarded until all parts are ready for the expulsive effort.

It is a most soothing remedy after labor, relieving nervous excitability preventing or controlling **after pains**, but I do not consider it a proper or safe remedy with which to control these pains, as I am confident that its influence upon the normal muscular contractility of the uterine fibre, causes relaxation, permits uterine hemorrhage, and retards normal involution. Dr. Broadnax made this observation also.

It is a valuable remedy for **hysteria**. It is combined with *pulsatilla* to advantage in young girls. In pregnant women with frequently recurring paroxysms, *cimicifuga*, in small doses, will facilitate its action, as will viburnum or aletris.

Bloyer says "if the use of *gelsemium* be extended to those parts of the organism involving unstriped muscular fiber, we will find that it acts directly upon this class of muscles. These occur in the liver and its ducts; in the kidneys and the ureter, the bladder and the urethra, as we find also, on the womb and ovaries and in the heart. Upon the pelvic organs, especially if used with *pulsatilla*, *viburnum*, *helonias*, or *cimicifuga*, its influence is satisfactory. It certainly conduces to the relief of high tension."

In diseases of the nervous system of a chronic character, the influence of *gelsemium* is beneficial, but not so pronounced. In **excitable mania** it exercises a controlling influence, and if sleeplessness be present its influence is enhanced by combination with *hyoscyamus*. It has exercised a beneficial influence in **epilepsy**, especially in those cases where acute cerebral hyperemia is present.

This agent has its place in **chorea**, but only when its specific indications are present, not in those cases characterized by anemia.

In the treatment of **facial neuralgia**, especially of the fifth pair, its influence is pronounced. It should be used hypodermically over the sciatic nerves in the treatment of **sciatica**. It controls **headaches** from **cerebral engorgement** with nervous irritability and excitability.

It is a serviceable remedy for **migraine** and **tic douloureux**. In persistent stitchlike pains, in the deep muscles of the back, which often completely incapacitate a man for work of any kind, full doses, just short of its apparent physiological action, will act in a most specific manner.

In **rheumaticstiffness** of the muscles of the neck, often accompanied with sharp pain, this agent should be freely given. In **acute rheumatism** and in **rheumatic fever** it is often sharply indicated. Given in connection with *aconite*, *bryonia* or *rhus tox*, as these are indicated, no better treatment can be instituted.

I consider *gelsemium* a most important heart remedy. The cases are those of **rapid heart** from over excitability; from irritability, with exaltation of nerve force, but where the patient is in full strength. No other remedy need be given in some of these cases. It relieves palpitation so induced and cures **cardiac neuralgia**. It is especially useful in the irritable heart of hysteria, influencing the entire train of symptoms at once. It is contra-indicated in weak heart, and where there are valvular lesions of any considerable character.

In **seasickness** specific *gelsemium* has been used with marked success. A teaspoonful of a mixture of thirty drops in four ounces of water is taken at the time of sailing, and repeated hourly the first day. Afterward it is taken less frequently. In this connection, be it said, in seasickness the remedy that cures one person may fail in another, and it is not to be expected that *gelsemium* will affect all alike.

I am inclined to the belief that in the South, its natural habitat, the conditions assumed by acute disease are more directly and specifically influenced by *gelsemium* than in the colder climates. Perhaps those factors of disease in which *gelsemium* is specifically indicated are more frequently induced or increased by the climatic influences of that locality. At least, our physicians in the South, who use the remedy to any extent, use it much more freely, and seem to find its indications present more often than we do in the North.

Recently a number of observations have been made on the action of *gelsemium* in **epilepsy**. One writer used it with *veratrum* in his cases, and has had unusually good results. He endeavors to anticipate the spasms, whenever possible, and gives the remedies in combination between times.

Many physicians have treated **stage fright**, or fear in meeting the public, or of students in fear of examinations, and have abolished it entirely with five drop doses of *gelsemium*, repeated two or three times, according to the susceptibility of the patient. *Aconite* also acts well here, but in smaller doses.

In the treatment of **tetanus**, Dr. Lewis of Illinois prevented the development of three cases, with *echinacea* for the toxemia, and *gelsemium* and *passiflora* for the spasms, used by the mouth and hypodermically. Dr. Matthew combined twenty drops each of *gelsemium*, phenol, and water as a hypodermic injection. In twelve cases he injected this entire quantity every three to six hours, saving all the patients. This combination has been subsequently used with much success. In 1880 Dr. J. Marion Sims gave *gelsemium* for tetanus and produced very satisfactory cures. He gave forty minims of the tincture every hour or two, reducing it to twenty minims, as the convulsions decreased and continuing this to full convalescence. In the tetanus of horses, it has been frequently used, hypodermically, by veterinarians throughout America. They claim that it cures many cases.

Dr. Smith, of Leesburg, Florida, told me that in the **malarial disorders** which prevail in his locality he found indications for its use in nearly all acute cases and almost invariably obtained prompt and satisfactory results. He has occasion to prescribe larger quantities of it than of all other fever and sedative remedies combined. Dr. Wm. M. Durham, of Atlanta, Georgia, and several other physicians of the South confirmed Dr. Smith's opinion as to the frequency of the occurrence of its indications.

All these physicians unite in the opinion that *gelsemium* quickly brings about that condition in periodical **malarial disorders** in which the antiperiodic, quinine, can exercise its happiest influence. It restores secretion, softens and slows the pulse, reduces nerve excitation and

irritation, causes a mild transpiration from the skin, and assists in cleaning the tongue. All these conditions must be present if quinine be given to marked advantage and with no unpleasant results.

These physicians claim further, that given during the time of the administration of quinine, it prevents undue stimulation of a sensitive nervous system, does away entirely in most cases with the tinnitus aurium, and other unpleasant phenomena, and enhances the influence of the quinine in all lines of its action, the desired effect being obtainable by a less quantity of this antiperiodic than would otherwise be required. These suggestions are no doubt applicable in other localities to a degree.

I have heard physicians say that they believed there were times or seasons when *gelsemium* influenced their patients with the same indications much more directly and positively than at other times. Perhaps this is in line with the theory of "epidemic remedial influence" or "epidemic remedial conditions" advanced by Rademacher and referred to by Scudder and other writers.

Co-operative Agents: *Cimicifuga racemosa* is an excellent remedy with which to combine *gelsemium* where the **muscular system** is involved. It promotes the action of *gelsemium* in all heart troubles, and in irritable and inflammatory conditions of the entire urinary tract. Opium intensifies the effects of this agent, but is slower in its action and its effects are not so quickly dissipated. They are not often prescribed together by those who are familiar with the action of *gelsemium*.

Lobelia and this agent will be found to act well together in certain selected cases; in severe convulsive manifestations especially. When **morphine** is given for relief of pain during powerful spasms, it acts as an antispasmodic. *Gelsemium* combined with it when indicated will be found to exercise all of its influence and control the pain which would otherwise continue, and thus prevent the antispasmodic effects of the remedy to an extent. Dr. Owen of Texas dissolves one grain of morphine in 240 grains of specific *gelsemium*. He gives this for **premature labor pains** in doses of from ten to fifteen drops, and in other conditions where both remedies are indicated, he gives from ten to twenty drops, as in severe persistent lumbago, sometimes with immediate results.

Other agents which act harmoniously with it to a greater or less extent are *passiflora incarnata*, the bromides, and chloral hydrate, *conium maculatum*, *physostigma*, *veratrum*, and *Jamaica dogwood*. It works nicely in fevers in careful combination with *aconite*.

Antagonists—This agent is antagonized by alcohol, by strychnine, *nux vomica*, *digitalis*, *ammonia* and, to a certain extent, by caffeine and *belladonna*.

Antidotes—In overdoses, heat applied, with electricity, and alcoholic stimulants, friction, artificial respiration, and hypodermics of atropine or strychnine should be administered. Strong coffee and the physiological salt solution are active antidotes also.

ACONITE.

Aconitum napellus.

Synonym-Monkshood.

CONSTITUENTS—

Aconitine, amorphous and crystalline; Pseudo-Aconitine, Aconine, Pseudo-Aconine, Picraconitine, Aconitic Acid, Sugar, Fat and Resin.

PREPARATIONS—

Extractum Aconiti Radicis Fluidum, Fluid Extract of Aconite Root. Dose, one minim.

Tinctura Aconiti Radicis, Tincture of Aconite Root. Dose, from one to ten minims.

Specific Medicine Aconite. Dose, from one-twentieth to one-half minim.

Aconitine Crystalline. Dose, one five hundredth of a grain.

Aconitine Amorphous. Dose, one one-hundred and thirty-fourth of a grain.

Physiological Action—In a moderate dose of five minims of the tincture, a sense of numbness and tingling is felt in the tongue and lips, with muscular weakness and depression; by doubling the dose these symptoms are intensified and prolonged, the pulse falls and the breathing is slowed. A poisonous dose causes tingling in the skin, pain

in the joints, vertigo, dimness of vision, extreme debility, pulse forty to fifty per minute and irregular, skin cool and moist, burning heat in the esophagus and stomach, nausea, vomiting and purging. There may be severe gastric and intestinal spasms, headache, complete loss of sight, hearing and speech, while consciousness remains; pupils dilated. muscles tremulous or convulsed, pulse imperceptible; death by syncope.

Aconite acts on the vaso-motor nervous system. It is a powerful depressant of the heart, and if given in sufficient quantity will paralyze that organ. Its apparent influence is upon the terminal filaments of the sensory nerves first, and afterwards, more slowly, upon the nerve trunks. It depresses the nerve centers of the cord, and destroys reflex activity and voluntary power.

A drop of a solution of *aconite* in the eye causes the pupil to contract. Larger amounts induce toxic symptoms, the principal of which are increase of tingling and numbness, excessive perspiration, rapidly lowering temperature, pupillary dilation, dimness of sight, loss of hearing and sense of touch, and diminished action of the sensory filaments supplying the skin.

Muscular weakness is marked; trembling and occasional convulsions may ensue. Excessive depression comes on, and the power of standing is early lost. The feet and legs become cold, the face pale, and the patient has a tendency to faint. There may be violent burning in the stomach with great thirst and dyspnea, and vomiting and diarrhea may occur. The pulse is weak, rapid, and almost imperceptible; acute, lancinating pain may be felt, and more or less delirium may result, though as a rule the intellect remains unimpaired.

“The manner in which *aconite* affects the nervous system is not yet definitely known. That it is a heart paralyzer seems to be an accepted fact. Death may result from syncope, though usually it occurs from respiratory paralysis. The action of a lethal dose is rapid, toxic symptoms showing themselves within a few moments.” (Lloyd and Felter.)

Administration—In my earlier teachings of the action of this agent, I taught that it was a remedy for sthenic fevers only. I have since been convinced that its influence in very small and frequently repeated

doses, greatly broadens its application. Homeopathic physicians class it as one of the most important agents and their dosage is always minute. In such dosage, with small, feeble, frequent or corded pulse, in adynamic or asthenic fevers, it may be given with excellent advantage.

It restores normal conditions, so strengthening the action of the heart as to even bring a subnormal temperature, in some such cases as in cholera and malignant intermittents up to the normal point. It acts in harmony with *belladonna* in equalizing the circulation, lessening determination of blood, increasing arterial tension and greatly improving the capillary circulation.

In **sthenic fevers** it may be given in larger doses, with a view to producing results which are in line with its physiological action. It is contraindicated in that dosage, however, when the sthenic stage is passed. It should be given, if at all, in very small doses. One drop of the specific medicine in a four ounce mixture, a teaspoonful every half hour or hour, will sometimes produce the best results in patients under twelve years of age. In the sthenic stage five drops of the specific or fifteen drops of the U. S. P. Tincture in a four ounce mixture, to be given in dram doses hourly, is usually required.

So common is the use of *aconite* in fevers that all practitioners with experience recognize the **indications**. One physician suggests that in **intestinal fevers** the results are not so satisfactory, because of the fact that intestinal toxemia is so persistent. If the intestinal tract can be thoroughly cleansed and the toxemic influences removed, then the remedy acts as in other fevers. The same is true of **septicemia** from local causes.

Specific Symptomatology—When the pulse is small, hard, quick and sharp, the skin dry and hot, the secretions suddenly suppressed, the temperature rising, chilliness up and down the spinal column, a shivering when the bed coverings are moved, or from a slight draft, or on the least exposure, the agent is directly indicated.

It is also indicated when the pulse is full and hard and sharp, with suppressed secretions in the initial stages of acute inflammation of any organ, and at the onset of protracted fevers and especially of exanthematous diseases.

In **asthenic fevers**, which are usually protracted, the pulse small, feeble, frequent, sometimes wiry and corded, with or without evidences of impairment of the capillary circulation, the agent is specifically demanded, but in small dosage. With these phenomena, its use may often be continued for a few days, then discontinued to be resumed later as before, if needed.

In the early stages of local inflammatory disorders, which involve the mucous membranes, where the secretions of these membranes are perverted or suppressed, the agent in small doses is indicated. This condition is found in laryngitis, tonsillitis and bronchitis, also in gastritis, colitis, or enteritis, and especially in cholera infantum.

Therapy—*Aconite* has become the greatest of the agents used by the profession in the control of fever; but its indication must be complied with.

At the onset of fever *Aconite* is the remedy. At that stage of the disease when the evidences of some disorder are apparent, and yet its localization can not be determined, the indications for treatment pronounced, why should the physician wait until a group of symptoms appears that has a name—that is known as disease—when the indications for one remedy are so conspicuous? We have known of many cases where all the evidences of approaching inflammation were plainly apparent, where the initial fever has been promptly met with *Aconite* and no inflammatory condition has ever developed. It is the experience of all physicians.

Aconite is specifically **the fever remedy in childhood**. Infants are susceptible to minute doses often repeated, and it is kind and soothing in its action. Five drops of the tincture to four ounces of water given in teaspoonful doses every hour is the usual maximum dose for a child one year of age. Because of its prompt action and ready elimination the doses must be given frequently.

In **severe fevers**, it is better to give one half teaspoonful every half hour. As soon as the sedative influence is apparent, the skin becomes moistened, the restlessness abates and the temperature falls, the doses must be reduced in size or in frequency until no longer indicated. Simple fevers will abate in from four to twelve hours under this administration of *Aconite*.

Aconite promotes tone and power in the arterial capillaries, and is opposed to blood stasis. In this influence it has a powerful auxiliary in belladonna. The two agents, in small doses, work harmoniously in incipient inflammation. Their combined influence in capillary engorgement is most salutary.

At the onset of inflammation, the synthetic heart depressants will perhaps stay the fever, but their influence is not so beneficially exercised upon the inflammatory processes. If inflammation is in progress they will not dissipate its results. *Aconite* retards pathologic exudation, suppuration, adhesion, induration and hypertrophy. This can by no means be as truly said of any other agent. *Aconite* certainly antagonizes inflammation or inflammatory processes and their results. It hastens resolution and promotes rapid absorption of inflammatory products.

Under the influence of this agent there is an entire change in the heart's action. The heart beats more slowly and quietly, the pulse becomes fuller and more natural, there is a general soothing effect upon the nervous centers, and the natural secretions from all the emunctories are re-established. It promotes free diaphoresis, and thus, a more rapid dissipation of heat. It is thus especially indicated when the skin is dry and hot. The mouth is no longer dry, the eyes assume a more natural appearance, and there is a large increase of the urinary secretion and the arterial tension is materially lessened. *Aconite* has a direct effect on the heat centers, inducing marked reduction in temperature. It is due to this influence that it is so reliable whenever there is an excess of body heat.

In acute **congestion** or in inflammation of the **brain** and spinal cord or their meninges, this agent exercises a double influence in the initial stages, but as soon as prostration or lack of power is evidenced it must be discontinued. In **cerebro-spinal meningitis** of infancy, with *gelsemium* and other antispasmodic sedatives, its influence is of prime importance. Acute discrimination must be exercised as to the limits in which it will be useful.

With the statements made, concerning the action of this remedy, it will be seen that in the diseases of children, and especially during the **summer**, *aconite* is more frequently called for perhaps, than any other

one **fever** remedy. The fevers resulting from heat, from gastric disturbances and intestinal faults, as well also as those of nerve irritation from any cause occurring during warm weather, nearly all show the **aconite** indications, and consequently respond very quickly to this remedy.

Aconite has a direct influence on respiration and upon the respiratory organs. In **pneumonitis** its influence upon the capillary circulation is so pronounced that it is impossible to overlook its benefits. Usually for the first five days of the fever its indications are conspicuous and no remedy will take its place. If given with **veratrum** at this time the violence of the circulation and temperature is restrained more promptly. In **bronchitis** it allays irritation, restores secretion, and by its paralyzing effect on the end nerve filaments quickly soothes the irritable or inflamed condition of the mucous membrane.

In **pleuritis** it is the first remedy to be thought of in the initial stage. Its influence is enhanced here by the use of **asclepias tuberosa**, and by alternation with **bryonia**. The chilliness, cutting pain on respiration, sharp cough and dry skin and mucous membranes, all point directly to it; but as soon as effusion to any great extent occurs, the agent may be dropped and the other agents continued.

It is of essential value in the treatment of mucous and serous inflammations. Its influence is evidenced in a marked manner in the treatment of acute **enteritis** or **peritonitis**, local or diffused, idiopathic, traumatic or septic. In gastritis, appendicitis and hepatitis; in acute **nephritis**, cystitis or urethritis, specific or non-specific, it is the first indicated remedy and may be continued until asthenia appears. In acute catarrh and other similar inflammations it may be persisted in as long as the inflammation lasts.

Its influence in stomach and intestinal troubles is in part due, although to no great extent, to its local as well as its general influence. In the inflammatory stage of **dysentery** and **cholera infantum** minute doses of **ippecac** and **aconite** exercise a specific effect when the causes of the disease are removed and intestinal asepsis secured.

In the onset of **diphtheria** it is an essential auxiliary. In acute tonsillitis, pharyngitis or laryngitis its specific influence is conspicuous because of its local as well as its constitutional effects.

Minute doses will often abort a case of croup or terminate it abruptly. Its internal administration in acute inflammation of the throat or post-nasal mucous membrane is greatly enhanced by a warm spray which contains *aconite* in an appreciable quantity.

In the treatment of continued or **septic fevers** *aconite* is usually indicated at the onset, but as soon as impairment of the blood, by the influence of high temperature and rapid destructive metabolism, with defective excretion of the waste products, is apparent, the agent must be discarded. The nerve force is deficient by this time and depressing agents are contra-indicated. This is especially true in typhoid conditions. The changes take place early, and the period of *aconite* indications is very short. *Cactus grand*, organic antiseptics and *bryonia* will produce a sedative influence, and we will find their indications conspicuous when the time for *aconite* has passed.

Aconite is of value in the treatment of **rheumatism** and rheumatic fever. In addition to its general influence upon inflammatory conditions it is a great promoter of excretion. It is combined to an advantage with *cimicifuga*, sodium salicylate, *bryonia*, or *rhus tox*.

In **exanthematous disease** *aconite* is doubly indicated because of its direct action upon the capillary circulation of the skin. It assists in determining the eruption to the surface and promoting exfoliation. It curbs the temperature and prevents complications and conduces, to a normal condition of the mucous surfaces, which is important where those surfaces are in danger of being involved also.

In acute **mastitis**, if treatment be inaugurated at once, an actual specific effect is accomplished by administering a full dose of *aconite* with ten drops of the tincture of *phytolacca*, one hour, and alternating it the next hour with *aconite* and ten grains of acetate of potassium. But few doses will be given until abatement of the active symptoms will be observed. The same course may be advised in prostatitis or acute orchitis with similar results. In metritis it has a prompt influence and gives excellent satisfaction.

Aconite is a remedy of prime importance in the treatment of **amenorrhoea** when the suppression results from acute cold. It is conjoined with other measures indicated, and is prompt and satisfactory. *Cimicifuga* enhances its influence here, as well as

Polygonum punctatum. When the secretion of the skin and mucous membrane is restored by *aconite*, a full dose of quinine will sometimes accomplish the desired result, when it would accomplish nothing without this agent.

Aconite is so assuredly a specific in febrile conditions that its influence in chronic diseases is almost entirely overlooked. It is in certain chronic and non-febrile conditions a very reliable remedy because of its certain action upon the nervous system. John King advised its use in treatment of non-febrile **spinal irritation** in young women, and the writer has followed his suggestions in this condition for years with superior results in many cases.

Its direct influence upon the cerebro-spinal system is recognized by homeopaths, Deschere says: "*Aconite* is useful in mental diseases and hysteria when there is particular aversion to excitement; the patients show an intolerance of music; they can bear no sounds."

Aconite is an important remedy in the treatment of **affections of the heart**. The symptoms indicating it in these cases are numerous and important, and necessarily so, since *aconite* restrains the blood flow and also exerts a special action on the heart and its nerves. There are congestions of both heart and lungs, palpitation with anxiety, cardiac oppression and even syncope. The palpitation is worse when walking, lancinating stitches occur and prevent the patient from assuming an erect posture or taking a deep inspiration. Attacks of intense pain at times extend down the left arm from the heart and are associated with numbness and tingling in the fingers.

The agent is advised by many in **angina pectoris** when there are strong contractions or pure hypertrophy, but not in enfeebled heart or where there is much valvular insufficiency.

In **reflex vomiting** without prostration or exhaustion *aconite* is useful. This is especially true in some cases of the vomiting of pregnancy.

In **neuralgia** it is of use externally as well as internally. The aconitine, in granules, is the best form for its internal administration in neuralgia. Externally the tincture may be applied.

Webster has used *aconite* externally for **pruritus**, with excellent results.

Occasionally the condition returns but in most cases the cure has remained permanent. Harrington confirms Webster's observations as does Robinson, who believes that the influence is induced by a direct anesthetic effect at first, with an influence upon the nerve endings, which prevents a return of the condition. The remedy is diluted and applied according to the discretion and knowledge of the physician.

Aconite is of common use in local pain, to relieve congestion, irritation and distress. Perhaps the most immediate influence obtainable in **acute pain** is to pour ten drops each of chloroform and *aconite* into the palm of the hand and hold it over the seat of the pain for two or three minutes. The effect is instantaneous and marvelous. It may be used in this manner in acute stomach or bowel pains until the cause of the pain is removed by other measures, or in acute pleurisy, and especially in angina pectoris. The pain ends with the application, and measures can be adopted to prevent its recurrence. Any local pain or neuralgia will yield, for a time at least, and in some cases it will not return. Sciatica treated two or three times per week with this simple formula will sometimes cease to return.

We have observed that *aconite* intensifies, modifies and otherwise improves the action of several other agents with which it may be combined or alternated. The characteristic effects of *Cimicifuga racemosa* will occur in much less time with this remedy than when given alone. The influence of *belladonna* upon all local congestions and in equalizing general circulation is intensified in a characteristic manner when the remedy is given with, or alternated with *aconite*. Given in proper doses with *veratrum* the influence of both remedies is active. Their influence on serous inflammation is most marked. In many cases either alone will not produce the same results.

Given with *gelsemium* in nervous excitement, cerebral fullness, nervous twitchings and fevers which result from irritation of the nerves and nerve centers, the effects of both are heightened.

Given with *asclepias tuberosa*, with proper external means, hardly any other agent will be needed in acute pleuritis.

Veterinarians find *aconite* immensely beneficial in the treatment of the inflammatory diseases of animals; but objections arise in the treatment of disease in horses, from the fact that horses are much more

susceptible to its action than man. A correspondingly smaller dose must be given, and repeated quite often.

Toxicity—Poisoning by *aconite* is not common. An overdose produces in the mouth and throat a tingling sensation, followed by symptoms of strangulation from paralysis of the nerve endings. The tingling becomes quickly general. This is followed by a sensation of numbness. The skin, relaxing, becomes covered with cold sweat, and finally becomes cold. The patient becomes too weak to stand, the respiration is greatly depressed and insufficient, the heart beats more feebly and the pulse may vary every few minutes in its character, but it is always weak. The temperature falls rapidly. *Aconite* depresses the heat centers, and, by dilating the capillaries of the skin, permits rapid heat radiation, thus at the same time, acting in a two-fold manner upon the temperature. Consequently the temperature of the surface of the body is a fairly correct criterion by which to judge of the internal temperature.

There may be vomiting, failure of the special senses from the general paralyzing effect of the agent, syncope or mild delirium and convulsions. These symptoms are not usual.

Antidotes—If a full toxic dose be taken, the above symptoms advance most rapidly, and no time whatever should be lost in combating the influence of the agent. It has no known physiological antidote. The conditions must be met according to their indications. If there is any reason for believing that the stomach contains any of the agent, large quantities of warm water should be swallowed and immediately evacuated. It may be vomited or siphoned out with a long stomach tube, or pumped out, but extreme nauseating emetics are contra-indicated. A mild infusion of oak bark, drunk freely, serves the double purpose of diluting the *aconite* and antidoting it by the tannin it contains. Tannic acid is believed to be a chemical antidote to a limited extent, and given in suspension in water is efficient.

The most immediately diffusible stimulants must then be given freely. Alcoholic stimulants, ammonia, *capsicum* in a hot infusion, and *digitalis*, *strophanthus* or *atropine* by hypodermic injection, or nitroglycerine are most serviceable remedies. External heat continually and electricity are demanded. *Lobelia* should prove valuable. A pint of vinegar, diluted, saved one life.

VERATRUM.

Veratrum viride.

Synonym-American Hellebore.

CONSTITUENTS—

Veratroidin, Jervine, Pseudo-Jervine, Rubi-Jervine, Cevadine, Starch, Resin.

PREPARATIONS—

Tincture Veratri Viridis, Tincture of Veratrum Viride. Dose, from two to ten minims.

Specific Veratrum. Dose, from one-tenth to five minims.

Physiological Action—Taken in moderate doses, *Veratrum Viride* reduces the pulse rate in a marked degree, which becomes extremely rapid and feeble on any exertion; this condition is followed by severe nausea and vomiting, together with muscular weakness. Taken in a poisonous dose these symptoms are increased in severity, the pulse becomes almost imperceptible, the skin cold and clammy together with vomiting, retching, hiccough, faintness, dizziness, blindness and unconsciousness. These symptoms indicate that the drug is a powerful spinal and cerebral depressant.

Although *veratrum* is a powerful poison, it is so regular and uniform in its action, and so devoid of erratic and unaccountable or uncontrollable influences, that it can be given within the limits of its maximum dosage with safety.

In overdoses it produces vomiting, usually before enough is absorbed to produce serious results. It is not rapid or violent in its first effects and is not cumulative. It is quickly eliminated and the effects of single doses are transient. It can be watched even when the doses are large, and stopped before harm results. It is really the safest of our active agents. Its poisonous effects are easily antidoted. It is better given in small doses, repeated every half hour or hour, in acute cases, as its influence is exercised in a more uniform manner, is more permanent, is more easily controlled and is not so apt to disturb the stomach. A large dose produces quick depression, although the effect is transient. If the dose be often repeated, the stomachic irritation quickly becomes so great as to interfere with all medication.

Veratrum is a better remedy for adults than for children. It is not as easily adapted to infants and the feeble as *aconite*, and its manner of action is not as satisfactory.

Veratrum, in its direct heart depression, resembles the coal-tar depressants, although much more regular and uniform in its action and perfectly controllable. It steadily slows the heart and circulation, the temperature declining correspondingly. Its influence upon the emunctories is not marked. *Aconite* influences the heat production and heat-radiation, stimulates all emunctories and the function of all the glandular organs and hastens the removal of inflammatory products. Effusion or suppuration are thus prevented, and if this agent is begun early, when the temperature has declined, there will be no local lesions remaining to contend with as the results of the inflammatory action.

Veratrum will assist in the removal of morbid products, but not with the immediate influence upon the results of inflammatory actions that are apparent from the use of *aconite*. It is an active eliminant which provides for its own elimination. *Veratrum* should not be given when inflammation has resulted in marked structural change and the products of inflammation are plainly present. Here *aconite* may be given as long as no general depression occurs.

Specific Symptomatology—*Veratrum* is indicated in the onset of **sthenic fever** when the pulse is full, large and bounding, and the tissues are engorged, where there is fullness of the capillary circulation.

It is especially serviceable when there seems to be **obstruction of the venous capillary circulation**. The face and skin are flushed, but usually of a full, dull, dark hue, and not always the bright-red flush with hot, dry skin which indicates *aconite* and *gelsemium*. The following indications suggest it.

- Tongue coated white or yellow with a red streak down the center.
- Congestion that occurs at the base of the brain.
- Convulsions that occur as a result of septicemia.
- Tissues full, not shrunken; marked arterial throbbing with bloodshot eyes.
- Erysipelas appearing like ordinary inflammation (red).

The skin is usually soft and covered with warm perspiration. In these cases *Veratrum* reduces the arterial pressure and permits, or even assists, the more rapid removal of the venous obstruction.

In administering *veratrum*, because of its direct action on the heart it is necessary, if given for a short time only, in full doses, that the patient remain in a recumbent position. In sthenic inflammations, especially such as results from infections—and this includes a long list—and exophthalmic goitre, it exercises a most delightful influence when given in small doses, frequently repeated, the patients should thus get the best results when in a recumbent position, but that position is not then obligatory.

Therapy—The characteristic indications for *veratrum* are found in the onset of **pneumonitis** in strong men previously healthy and vigorous. In these cases, given in doses of a drop of the tincture every half hour, it will slow the pulse and slowly reduce the temperature after four or five hours. This effect can be continued for a few doses longer, and then the doses should be smaller or given farther apart. The pulse should be slowed, in a case with violent premonitory symptoms, down to the normal beat and held there for awhile, and if the symptoms do not quickly abate, the influence may be continued until a pulse of sixty or fifty-five, or even, in a strong man, fifty beats is reached, if the stomach be not yet irritated.

In **pleuritis**, in **bronchitis**, in **peritonitis**, especially pelvic peritonitis from sepsis; in **hepatitis** and **nephritis** and **cystitis** always at the beginning of the acute stage before much structural change has occurred, it may be given, and will retard and often throw off the attack. It is of value in the earlier stages of **meningitis** and **cerebritis**, if given understandingly. If the violent heart action be controlled, the processes of disease and any tendency to convulsive action will be at once restrained.

In continued fevers this agent, like other depressants of nerve force, is not always the best remedy to use. The reactionary power of the nerve centers is greatly lowered by disease, and if depressants are given they are apt to still further decrease the nerve force and minimize its restorative influence over the system. Advantage will sometimes follow its early use in a case of extremely high temperature with violent and noisy delirium, but it is not the remedy to persist in nor to continue

when the prostrating influence of the fever is apparent.

In **tonsillitis aconite** as an internal remedy is almost specific, but its influence is greatly heightened and the inflammatory stage shortened by applying *veratrum* with a camel's-hair pencil over the tonsils. Diluted-one dram in a half-glass of water it is an excellent gargle in any inflamed throat. In these cases it aborts the inflammation and determines immediate resolution.

In **erysipelas** it is of value both internally and externally. For external use in this disease a somewhat dilute non-alcoholic preparation is preferable, or the fluid extract, full strength or diluted one-half.

It is seldom that other applications will be needed, and the force and frequency of the heart's action can well be restrained by its internal use. If begun early in erysipelas, there are few conditions likely to arise that will contraindicate its use.

The first investigators into the properties of *veratrum* pronounced it an excellent alterative. It has not been generally used as such, but those who have so used it have expressed the strongest confidence in it. Prof. A. L. Clark, writing on the subject in 1889, said: "As an alterative, especially as an antisyphilitic remedy, there is no better agent in the vegetable kingdom. Indeed, there is room for doubt whether the animal, vegetable or mineral kingdoms furnish a better remedy in purely syphilitic cases. If the patient has been already saturated with mercury, as is too often the case, doubtless the administration of some of the preparations of iodine will be a necessary, adjuvant. In the uncomplicated secondary forms of the disease it will be seldom that any other remedy will produce as satisfactory results as can be obtained with the *veratrum* alone.

Of a reliable fluid extract four or five drops three times a day will be usually well borne by the stomach, and the sensitiveness of that organ is my sole guide in dosage. If four drops disturb the stomach use three for a few days, then increase to four, then perhaps to five. Its smallness of bulk, not disagreeable taste, and, above all, its satisfactory effects, constitute strong recommendations for its use." Perhaps its power in this line increases its efficacy the treatment of puerperal convulsions.

Its alterative and eliminative influence as well as its sedative power

caused the older writers to say that *veratrum* would positively cure puerperal fever.

Other observers have spoken most highly of its action in developing **phthisis pulmonalis**. Positive claims are made that, judiciously administered, it has aborted the disease.

While I have spoken against its use in continued fevers, there are several writers who have given it in full doses at the **onset of typhoid fever**, while *sthenia* was yet present, and have had most salutary results.

In the early stages of **acute rheumatism**, its indications are present sometimes quite conspicuously, and if given in emphatic doses, it will sometimes quickly terminate the disorder. In articular rheumatism, it may be applied freely, externally, over the swollen and inflamed joints.

In the treatment of **rheumatic fever**, one writer says that when with the fever there is rapid strong pulse, caused by the toxins, *veratrum* used as a sedative is especially valuable because of its alterative properties, exercising a double influence, removing the causes of the disorder as satisfactorily as any other known remedy.

It is given in **sthenic inflammations** with the above symptoms, in **erysipelas** with general symptoms of inflammation, with a red stripe through the center of the tongue; in **nervous irritation**, with threatened convulsions; usually those which have suddenly appeared. In these cases the pulse is rapid, but may be full, or it may be corded or sharp, hard and wiry.

In cases where there is previous **gastric irritation** usually shown by a long, narrow and pointed tongue, with red tip and red edges, the agent will not be of benefit, but will increase that condition. Where there is **nausea** from the presence of undigested or foreign matter in the stomach, the rapid pulse, etc., being present, its action may be beneficial. In these cases the tongue is usually pale, broad and thick.

For **bilious colic** Dr. Bates wrote some years ago that he relied upon this remedy.

There are some cases of **chorea** in which *veratrum* will serve an

excellent purpose. These cases are more or less acute in development, and are usually very violent. The heart is irritable and the pulse rapid.

Dr. Woodward speaks very highly of *veratrum* in the treatment of **asthma**. In spasmodic cases he is confident of its beneficial influence, but he has given it principally in those sthenic heart cases where asthmatic breathing has developed within a few days and persists. He gives one or two drops every hour unless unfavorable symptoms occur. He expects favorable results within a few hours. It is a remedy for some cases of **hay asthma**.

The old writers cautioned against giving large doses of quinine and *veratrum*, at the same time, as their influences were antagonistic, and Dr. Percy claimed that it was a positive antidote to strychnine poisoning, quickly controlling the spasms and assisting the elimination of the poison.

A satisfactory cure of **tetanus**, with *veratrum* and *gelsemium*, has been reported. The case was one of a young girl, 14 years old, attacked after an operation, for the removal of the ovaries, with a most severe form of tetanus. The case presented the classic symptoms in the extreme. When paraldehyde, morphine, chloral and the bromides had failed, the antitetanic serum was used. This also failed, and the patient was put upon *veratrum*. Small doses failing, larger doses were given in conjunction with *gelsemium*. Eight minims of each every hour was given per rectum. The effect was prompt and satisfactory, but the agent was discontinued because of vomiting, when the symptoms returned. Ten minims of *veratrum* and eight minims of *gelsemium* were then given every hour, and the symptoms were promptly controlled. There is no doubt that the powerful alterative properties of *veratrum* add greatly to its efficacy in the control of tetanic mid puerperal convulsions.

It is useful in **acute gonorrhoea**, preventing **chordee** and abating the activity of the symptoms. It is as useful also in orchitis from whatever cause.

It is a valuable application in localized inflammation, such as boils, carbuncles, felons, ulcers with heat and swelling, "cold sores" on the lips and inflamed pimples.

The use of *veratrum* as an antispasmodic is now quite common. It may

be given in **convulsions** with active cerebral hyperemia. It is especially reliable as an emergency remedy in persistent cases of convulsions in childhood while the cause is being removed, its influence often assisting in the removal of the cause. From one drop to three or four may be given at a single dose, according to the age of the child, and repeated with caution.

In **puerperal convulsions** the mass of evidence in favor of *veratrum* is overwhelming. One old physician reported in the Medical Record (1888) an experience in the treatment of an average of eight cases per year for twenty-eight years, without the loss of a patient, with *veratrum* alone. Another treated twenty-three cases with *veratrum*, with recovery in all. In these cases full doses are given, closely watching the effects on the stomach, if given per os, and always watching its effects upon the heart. A dose of five drops can be repeated every half hour for three or four doses. At times five drops have been given every half hour for four or five hours. This important influence is exercised through its power to control blood pressure-reducing arterial tension. It is best used hypodermically.

In many severe cases with **active cerebral engorgement** as much as fifteen drops have been given hypodermically and repeated after a time.

Three drops of the tincture of *veratrum* twice daily, gradually increasing the dose to twelve drops, then gradually reducing, may be given with care in a desperate case of **exophthalmic goiter** with **tachycardia**. This agent at such a time is important. It will usually control the rapidity of the pulse in a satisfactory manner while it materially assists in antidoting the toxins, and thus conduces to the action of other indicated remedies.

In its influence upon exalted activity of the heart, *veratrum* is of service in **palpitation** from temporarily increased functional power of the heart—the irritable heart of otherwise strong, vigorous men—the violent action induced by the use of tobacco in some cases inducing high arterial pressure and the palpitation of hypertrophy without valvular incompetence. It is likewise valuable in **aneurism**, restraining hyperactivity by reducing the vasomotor tonus. In these cases a dose of from three to four drops four times each day will do better than the small and frequently repeated dose.

BRYONIA.

Bryonia alba.

Synonym—Bryony.

CONSTITUENTS—

Bryonin, Starch, Gum, Sugar, Albumen, Wax, Fat and various Salts.

PREPARATIONS—

Tinctura Bryoniae, Tincture of Bryonia. Dose, from one to five minims.

Specific Medicine Bryonia. Dose, from one-tenth to two minims.

Physiological Action—In large doses *bryonia* is an active hydragogue cathartic and sometimes causes inflammation of the stomach and bowels. In poisonous doses it causes a fall of temperature, dizziness, delirium, weak pulse, cold perspiration, dilated pupils and other evidences of a depressing action on the nervous system. The recent root is highly irritant when locally applied, and capable of producing vesication. The results from laboratory observations of this agent do not to any degree suggest its clinical adaptations. These have been determined by the closest of clinical observation.

Specific Symptomatology—The following symptoms demand the use of *bryonia*: Distress or pain in acute inflammatory disease, which is aggravated by movement increased by pressure; elevated temperature, with hard, frequent, vibratile pulse; the muscular structures sore and tender, as if bruised; acute lung or bronchial disorders, with no expectoration, dry cough, short and harsh, or hacking, with soreness increased by coughing; flushed right cheek frontal pain extending to the basilar region; irritating cough.

Again: Sharp, cutting, lancinating or tearing pain from serous inflammation; increased muscular tension, and tenderness on pressure, aggravated by motion; headache on the right side; inflamed lung structure, with pain and soreness relieved by lying on the inflamed side, usually with a bright spot on one cheek. Chronic soreness in the chest, without fever, with harsh, dry, sharp cough. With this latter indication its influence is often enhanced by alternation with small doses of *belladonna*.

Bryonia promotes the elimination of heat, and like *aconite*, it opposes the dryness of the mucous membranes induced by inflammation which suspends secretion. It acts upon all serous membranes directly as stated. It also acts upon the viscera covered by these membranes. It is thus valuable in **enteritis**, in the inflammation of the **glandular organs**, and in pulmonary and bronchial inflammations, always looking for its precise indications—tenderness on pressure, tiny shooting pains, or pain increased by motion.

The absorption of inflammatory products, either of a serous or sanguineous character, is greatly facilitated by this remedy. It opposes the breaking down of tissue and pus formation. Its influence upon inflammatory processes and upon the results of inflammation is even more positive in certain cases than *aconite*.

Therapy—*Bryonia* is a remedy of great value in the treatment of all acute inflammations of the thoracic viscera or of the pleura. In **pleuritis** its indications are usually all present. Uncomplicated cases will yield to this agent alone. Occasionally, though, more rapid results will be accomplished by alternating it with *aconite* or with *asclepias tuberosa*. It must be continued if effusion be present.

One physician, in two cases of pleurisy where there was at least a pint of serum in the pleural sac of each, gave *bryonia* alone, and persistently using it for a reasonable time, the entire quantity in both cases was absorbed, and the patient made an excellent recovery.

In **bronchitis**, with short, quick cough, with quick, sharp pains, especially if the sputum be bloody or frothy, *bryonia* acts directly. It should be given in small doses, at short intervals, and should be persisted in. It will subdue the pain and the cough promptly and exercise as marked an effect on the fever as any special sedative known.

In **pneumonitis** it may be positively indicated. If used in combination with other specific remedies, abatement of the symptoms will be even more rapid in these cases. Although opposed to complex medication, the author has used the following combination in these conditions in infants and children with the most happy results. The two prescriptions should be given as specified in alternation. In severe cases in small children, or during severe paroxysms, it is very desirable to give a yet

smaller dose and alternate the remedies every twenty or thirty minutes:

Rx— Tinct. Aconiti, U. S. P.	5 drops
Tinct. Belladonnae, U. S. P.	8 drops
Aquae Dest.	32 ounces

M. Sig. Half of a teaspoonful every hour, alternated with the following prescription every half hour:

Rx— Tinct. Bryoniae	8 drops
Tinct. Ipecacuanhae	4 drops
Aquae Dest.	32 ounces

M. Sig. Half teaspoonful every hour, alternated with the above as stated, every half hour.

I have in late years been using *bryonia* in **acute neuritis**. I have found in many cases the precise indications for the use of this remedy, and in one exceedingly bad case, I got excellent results, indeed, but I combined it with Mag. Phos. 3x, though the indications for *bryonia* alone were very plain.

Dr. Henderson specifies a form of **neuralgia of the face**, usually on the right side caused by cold or from a draft with dull pain and stiffness or tenderness of the muscles, especially if there should be a sharp catch under the right shoulder or in the right side increased by inspiration as immediately relieved by a combination of *bryonia* and *sticta*, ten drops of each in four ounces of water, a teaspoonful every half hour.

Bryonia controls the temperature and the fever processes, when the exact indications are present, as positively as any of the other known special sedatives.

Synovitis with sharp pains on motion wherever located, demands *bryonia*, and **rheumatic conditions**, where the distress is increased by movement, with sudden, sharp pains, especially where there is acute rheumatic swelling of the finger joints, it is demanded. The **fevers of infancy**, where movement causes pain, evidenced by sharp, crying out; inflammation of any organ, accompanied with sharp stabbing pain or stitches, a sensation of fullness and deep soreness are controlled by it.

In **protracted fevers**, with dry mucous membranes, cracked lips, excessive thirst; constipation, with hard, dry stools; scanty urine, with dark color and high specific gravity, *bryonia* should be given, and in asthenic fevers the remedy in small doses may be persisted in, with no depressing influence upon the patient.

In chronic **disorders** of the **liver** or **spleen**, with deep-seated soreness and quick, shooting pains, especially if there be some elevation of the temperature, it will produce the best of results.

It should invariably be used in **acute appendicitis** from the appearance of the first indications. I am convinced that we have no more important or efficient remedy than this in this disorder. It will save many operations if given early.

In a most obscure case, in consultation at one time, I discovered extreme tenderness on pressure over the pancreas—little shooting pains—pain increased by motion, the patient lying immovable on the back, temperature of 101 1/2 degrees. I diagnosed **acute pancreatitis**. The patient was certainly near death. The persistent use of *bryonia* relieved every condition in a satisfactory manner, causing me to conclude that the diagnosis was correct, and that we had prevented the formation of pus by the prompt use of this remedy. When these indications pointing to the pancreas are present in **diabetes**, this remedy should be given.

Dr. Jones says that *bryonia* is the remedy for inflammation of the **mammary glands** when those glands are of stony hardness, pale, hot, painful and sore, when they must be supported. He says that it is a remedy for **headache** when it is of a bursting character, as if the head would split, worse on movement or on stooping over, relieved by lying still. He has found where a patient suffers from nose bleed at the time of menstruation, that *bryonia*, given in small doses, will restore the normal condition.

I am so confident of the action of this remedy in **cough**, especially in children, that with many patients suffering from no other trouble but a dry, hacking, persistent cough with or without some irritation and soreness, I am apt to give *bryonia* as the first remedy, or I combine it with any other simple, directly-indicated remedy.

Auxiliary measures should be adopted as the character of the case suggests.

In **peritonitis** with quick, sharp pains, flushed face and anxious countenance, *bryonia* is indicated. This agent, in mild cases, will subdue all the inflammatory processes and **control the pain** satisfactorily without **opium**

During the early stages of any inflammation in which *bryonia* seems to be indicated, *aconite* will facilitate its action and assist in the control of the processes, but *bryonia* can be continued to most excellent advantage when the results of inflammation are extreme, and weakness and prostration are present, when *aconite* might have a depressing effect and be contra-indicated.

In acute **pericarditis** and **endocarditis** the specific indications for this agent are often present, and its influence is prompt. It will be of great service if there is effusion with evidences of decreasing power of the heart.

In acute **rheumaticinflamm** ation of the **heart** or pericardium it is one of the most direct remedies. Properly combined with indicated auxiliary measures, no remedy will act more satisfactorily:

It is of much value in typhoid conditions, especially in **typhoid pneumonia** or in **pleuropneumonia** or broncho-pneumonia with typhoid complications. In **typhoid fever** with severe enteric symptoms this agent is often of great service in restraining the retrograde processes and controlling excessive temperature. In **septic fevers** its influence will be marked and valuable. In septic peritonitis it may be given alternately with *aconite*, or *aconite* and *echinacea*, the latter remedy directly controlling the sepsis.

Bryonia is indicated in **rheumatic fever** and in acute **rheumatic arthritis**. It must be given as in other acute conditions, in small doses frequently repeated. In muscular rheumatism and in rheumatic muscular pains it will accomplish good results if given in conjunction with **cimicifuga** or alternated with **cimicifuga** and **aconite**. In acute rheumatism of the joints of the fingers or hand, it seems to be of value.

Because of its direct action on serous membranes, a few years ago I was led, from the extreme tenderness and pain on pressure, to prescribe *bryonia* for **spinal tenderness**. I immediately found that I had made the important discovery of one of the best remedies with which to relieve that serious condition. Indications for other remedies will suggest their combination in some cases, especially when this condition is present during pregnancy.

In **mastitis** or **orchitis** it is useful, and if the fever be high, the pains sharp and cutting and the face flushed, the influence will be prompt, indeed. In these cases, it is seldom given alone, but usually with *aconite*, *phytolacca* or other direct remedies.

RHUS. *Rhus toxicodendron.*

Synonyms—*Toxicodendron radicans*, *Rhus Radicans*, Poison Oak, Poison Ivy.

Locality—North America.

CONSTITUENTS—

Toxicodendric Acid, fixed oil wax, tannin, mucilage.

PREPARATIONS—

Specific rhus tox. Dose from one-twentieth to two minims.

(Since Specific Rhus Tox is no longer manufactured, and a simple leaf tincture still retains the Poison-Ivy allergens, this remedy may now a bit of a moot point—too bad. For years I have been reluctant to try it - MM)

In the preparation of the **specific rhus**, the freshly gathered mature leaves are used. It is at first green in color, afterward light-brown or yellowish. It is volatile, and irritating to many. From two to ten drops in four ounces of water is the usual administration. A tincture of *rhus* is prepared, but it varies according to its manufacture and the quality of the drug used, and is not reliable. Dose, from one-tenth to two minims.

Physiological Action—Most persons are poisoned by handling the poison oak and the several poisonous varieties of *rhus*—*Rhus toxicodendron* or *radicans*, *Rhus venenata* and *Rhus pumilium* It causes

an erysipelatous inflammation of the skin, the swelling sometimes being so excessive as to obliterate the features, or the body may become so greatly swollen that the person is unable to move. Internally in poisonous doses of the berries it causes drowsiness, stupor, vomiting, convulsions, delirium, dilated pupils, hurried respiration, pulse at first full and strong, finally small, frequent, feeble. Poisoning by an infusion of the root causes a vesicular eruption, burning, in the throat and esophagus, dry, hoarse cough, nervous twitching and wandering of the mind, constriction of the temples, chilliness, nausea, thirst, debility, faintness and convulsions.

It relieves cerebral engorgement by increasing arterial pressure. In minute doses it acts as a cerebral sedative to the overworked and irritable brain and improves its tone and functional activity. It acts somewhat similarly to strychnine in that it produces increased functional activity of terminal nerve filaments and is beneficial in some forms of paralysis.

Specific Symptomatology—In inflammatory fevers with sharp hard pulse; acute inflammation involving the skin, with bright circumscribed redness, extreme soreness or sharp burning pain; extreme redness of local parts inflamed, with great local heat and sharp pain; sharp supra-orbital pain, especially of the left orbit; burning in the eyes with flushed face; inflammation with constitutional impairment, evidenced by a sharp red tongue and deep red mucous membranes. The tongue has a pointed tip upon which the papillae are elongated and pointed; In subacute or in chronic disease also with the above specific evidences, it is demanded.

The differential diagnostic points between *rhus* and *bryonia*, are that *rhus* is the remedy when the patient suffers, most when warm and at rest, or when the distress is aggravated by heat, while *bryonia* is indicated when the distress is increased by motion. One prominent homeopathic writer is authority for the statement that it has direct influence upon the tendons, sheaths of the nerves and fasciae, hence its influence in rheumatism. Restlessness seems to be a leading indication for *rhus*, as a specific agent. Whether it be a **meningeal irritation** or “**rheumatism**,” the patient shows this same symptom. In many respects in its indications *rhus* is the opposite of *belladonna*.

Therapy—The indications for this remedy are present in **acute**
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erysipelas to a marked degree, especially in erysipelas of the head and face, or that involving loose cellular tissue. If it be given in the first stages of this disease the symptoms abate rapidly. If typhoid symptoms be present in erysipelas it is an excellent agent, its influence being marked upon typhoid conditions. It is useful in **typhoid fever** and in typhoid conditions complicating acute inflammations. It seems to exercise the influence of a special sedative in these cases when *aconite* and *veratrum* are contraindicated. Sordes with dry red tongue and dry mucous membranes, flushed face, bright restless eyes, with tympanites, all demand *rhus*. It soothes the **cerebral irritation** of typhoid; inducing rest and quiet, and controls delirium. It has antiseptic properties also which antagonize the disease processes within the blood. It prevents disintegration of the red blood corpuscles, and increases the vital powers.

In **scarlet fever**, **measles** and **smallpox** the indications for this agent are often conspicuous, and it will be found of first importance, especially if there be great injection of the conjunctiva, swelling of the palpebrae, extreme lachrymation and photophobia. In the latter stages of these diseases when the skin is livid, the tongue red, or red and glazed, with offensive breath, and offensive discharges, and with failing vitality, it is demanded.

In acute **inflammatory rheumatism** the indications for *rhus* are conspicuous. The agent is often of first importance in this disease. It may be alternated with *aconite* or other suggested remedy for the fever, or if there be deep muscular soreness, with *cimicifuga*. Its value in all forms of rheumatism is great, and cannot be explained on the basis of its physiological action, as the homeopaths obtain excellent results from very minute doses. It is given in chronic rheumatism and to relieve the results of rheumatic inflammation.

In persistent dry, tickling **bronchial coughs** *rhus* is a good remedy, whether they be acute or chronic. It is combined with or alternated with *bryonia* or *aconite* in capillary bronchitis with those characteristic coughs.

Dr. Hurd claims that when **Lagrippe** first made its appearance, the first two cases had a guiding symptom that caused him to give full doses of *rhus tox*. The patient would seize the head with both hands and groan as if he were in agony. This peculiar **frontal headache** was relieved

within an hour by this remedy, establishing a line of investigation for its use.

The use of this remedy in small doses, internally, frequently repeated with **rhus poisoning**, has long been advised. The experience of the editor has confirmed the belief that it is of benefit.

When **gastric** or **intestinal disorders** in children induce **cerebral engorgement** with great restlessness and flushed face, the specific tongue, mouth and mucous membrane indications being present, **rhus** is the remedy. These cerebral symptoms may be induced by any inflammatory disease, and successfully cured with **rhus**. In adults they are found in prolonged adynamic fevers, and often are a serious complication. **Rhus** will meet other prominent indications often while correcting the brain phenomena.

It has an **antispasmodic** influence, preventing **spasms** when induced by cerebral engorgement, or irritation which is of reflex origin or caused by gastric or intestinal irritation, the characteristic indications for the remedy being present. Webster says he values it more highly than **gelsemium** or **lobelia** in infantile convulsions, if its indications are present.

In gastro-intestinal disturbances accompanying the inflammatory conditions over which **rhus** has an especial influence, this agent is a direct sedative. It arrests nervous and reflex vomiting promptly, and vomiting from any cause when the **tongue** is pointed with **reddened tip and edges**. The so-called "strawberry tip" directly suggests **rhus**. In acute abdominal pain, in **cholera morbus**, with extreme vomiting and spasmodic pain, this agent is valuable.

In local inflammations, induration and swelling tending to suppuration, as of boils, felons and carbuncle, the indications point to this remedy, and given internally its influence is often excellent. In ulcerations with red areas and red edges, in scrofulous indurations and ulcerations, it is useful. In eczematous and erythematous conditions it is of value. It is of service in parotitis and in inflammation of the sub-maxillary glands.

This agent must be used continually, and the prescriber must familiarize himself with all its side influences before he can fully

appreciate its great value.

In pruritus of the vulva or other localities where there is erythema, with redness, persistent in some cases, especially with blonde children with eczematous tendencies, or children of a scrofulous diathesis, this agent is most prompt and valuable.

There is a form of eczema, usually acute in character with the inflammatory evidences of burning, redness, itching, and perhaps swelling, that *rhus* will quickly cure. The homeopathist advises it for these in the second decimal dilution, five drops every two hours.

In any skin disease where there is violent itching, circumscribed redness, burning, swelling, pain and vesication, especially if fever be present, the condition more or less acute as above mentioned in erysipelas or other skin disorders, this remedy is prescribed with success.

SYNTHETIC DEPRESSANTS.

In my first editions I gave a conspicuous place to the use of coal tar derivatives as remedies that control fevers. During, the fifteen years that followed, these remedies did not gain ground in the opinion of the profession. Acetanilide and phenacetin perhaps held their own. Antipyrine was largely dropped except for pain. Exalgin is used in but very few conditions. I therefore have not in this rewriting given them separate space.

Antipyrine in its physiological action is similar to that of **phenacetin**, but more pronounced. All the four remedies herein included, produce pallor: first by impeding the circulation through depression, and secondly after protracted use, by destroying the red corpuscles and introducing a new toxin—methemoglobin. Cyanosis will follow large doses with all. There is languor, trembling, and with antipyrine especially, profuse sweating, fall of temperature, impeded respiration, increased feebleness, and rapidity of the pulse, coma, and difficult breathing with full extreme doses with profound collapse.

Antipyrine relieves pain to a larger extent than the others, but the almost invariable depression caused, prevents its general use. If it were

not for this it would be a valuable therapeutic remedy. It reduces temperature, and controls nervous excitability.

Acetanilide is a safer remedy especially when combined with a sodium salt and caffeine. Its use is reduced to its control of headaches, but so many unpleasant results have occurred that it is under the ban. Its continued use is not advised because of its action named above on the red corpuscles. Fewer accidents occur with this remedy than with antipyrine. Five grain doses are within safe bounds, though this dose has produced alarming symptoms. None of these remedies should be used except in sthenic cases, and then repeated but few times.

Of all four, probably **Phenacetin** is the safest. It regulates sthenic fevers to a certain extent, relieves pain, and distress, unlocks secretions, produces a moist tongue, soft skin and full pulse. Cyanosis does not as readily follow it, as the others. These remedies are all erratic in their action. They are not like the organic agents; these exercise a steady, uniform, smooth, regular, permanent influence acting in perfect harmony with the natural forces in whatever they do, especially in overcoming fevers. There is no perceptible reaction after their action, while after these synthetic remedies the temperature recurs in many cases higher than before.

Exalgin never has held a high place except for some form of pain. For some special purposes it is relied upon. It is now no longer used as an antipyretic. I at one time cured a number of cases of **chorea** with this remedy, that would not readily respond to our other methods. At first I thought it would be an addition to our list, but later when I came to treat the feebleness, anemia and irregularity of the heart, I found in many cases, when only two grains, three times a day, was given, I discontinued it entirely. I am confident that a thorough knowledge of the organic remedies will produce in every way a more satisfactory class of remedies than can be secured from the use of these erratic chemical products.

COMPARATIVE SYMPTOMATOLOGY OF ANTIPIYRETICS.

Gelsemium—Fever with nervous phenomena—nervous excitability, restlessness, flushed face, bright eyes, contracted pupils, sharp, quick pulse, nervous twitchings, evidences of acute determination of blood to the brain.

Aconite—**Sthenic fever** with sharp, hard, quick pulse, dry hot or burning skin, chilliness up and down the spinal column, suppressed secretions; at the onset of acute fevers; in the early stages of acute inflammations; in the developing stages of the exanthematous fevers.

Veratrum—**Sthenic fever** with large, full, bounding, fast pulse, with high temperature, engorged capillary circulation; at the onset of acute local inflammation, in previously strong patients; in acute convulsions with high temperature and rapid pulse.

Bryonia—In the **fever of acute inflammation**; if in the lungs or bronchi there is sharp, hard, short, quick cough, inducing pain and soreness, quick pulse; if in serous membranes there are quick acute pains, diffused soreness and tendency to effusion. Acute synovitis, with pain on movement and threatened exudation, is relieved by it.

Rhus Toxicodendron—Acute **inflammatory fever** with sharp, hard pulse; **involvement of the skin**, bright, circumscribed redness, with burning pain and extreme soreness; fever with sharp supra-orbital pain, burning in the eyes, flushed face, red mucous membranes, dry tongue with reddened tip and edges, red, narrow, elongated tongue with brown coat; sordes.

Many careful prescribers use **antipyrin** or **acetanilide** or phenacetin in the **sthenic stage of violent acute fevers**, or inflammations, and if care be exercised in their administration, and the patient closely watched for the first appearance of their depressing action, good results can be secured occasionally in adults, especially in strong men. The entire train of symptoms can be sometimes abated. There is but little distinction to be made in their symptomatology. If given with the first symptoms of acute influenza—**la grippe**—their action is usually salutary.

Phosphate of Iron—It is impossible to deny the marked benefit that will occur in very many cases of fevers, especially in the early stages of high temperatures where the cause is undetermined, by the use of the Homeopathic third or sixth decimal trituration of the above salt called Ferrum Phos. I have succeeded with the third. Ten grains of this dissolved in four ounces of hot water, and given to a child with a temperature of 104 to 106 degrees in teaspoonful doses every ten minutes, retaining the heat, have caused so many of these high temperatures to suddenly abate for me and a normal condition to supervene that I would not deny its influence.

After using the indicated remedies in the case without satisfaction, I have dropped them, and substituted this until the temperature was materially reduced and have then gone back to the original indicated remedy, with great satisfaction.

I have no printed authority for the fact that if persisted in, in these doses until the temperature is at the normal point, there would be a subsequent **subnormal temperature** in quite a proportion of these cases, that will be difficult to elevate to normal. I have only observed this in my own practice, and I avoid it by stopping this agent earlier. No harm comes from this, but it need not be induced.

The results are similar whether used in sthenic or asthenic fevers, but I have observed more promptness in the former than in the latter form, naturally.

Belladonna—Must be studied with reference to its influence in the **developing stage of inflammations**. It will be found classed with nerve stimulants. It is a *most important specific remedy* in equalizing the circulation and preventing the local hyperemia essential to all local inflammatory action. It is especially indicated when there is fever with dullness or tendency to stupor, with dull eyes and dilated pupils. It works in perfect harmony with *aconite* or *bryonia*. It is not a sedative to the fever, but combats the fever processes. It is given usually with a direct fever remedy.

Cimicifuga is a valuable remedy in fevers whenever there is muscular aching, general muscular soreness, or muscular irritability; when the muscles are sore as if pounded or bruised. The muscular distress

contributes to the general distress sometimes more than any one other factor, and must be allayed. This remedy, a few drops in a four-ounce mixture given with the other fever medicines, is immediately effectual.

Arnica for the same purposes as the above, ten drops in a four-ounce mixture, with the other remedies, accomplishes the same results for which *cimicifuga* is prescribed. In some cases, these two remedies can be combined with advantage. The above mixtures are given in teaspoonful doses, every hour.

ASTHENIC OR ADYNAMIC FEVERS.

It will be observed in the study of the above remedies as applicable to the reduction of fevers, that with the exception of one or two they are to be prescribed only in **sthenic fever**—in which there is an apparent temporary exaltation of vital force—in which the inherent dynamic influences have unwarranted exercise. Where temporarily, the nervous and vital powers have reacted above or beyond physiological limits, the agents are prescribed to exercise a restraining or inhibiting influence upon the fever, by a sedative or depressing influence upon the nervous system or upon the heart and circulatory apparatus. They depress vital force.

In many cases fever exists where the vital forces are already depressed or exhausted to a greater or less extent, and where there is extreme feebleness. In such a case depressants of vital force are contra-indicated.

In these **asthenic** or **adynamic** conditions, it is necessary that the fever be controlled as in sthenic but a class of remedies must be used which stimulate, encourage or increase the vital forces, in direct opposition to the action of those advised in sthenic cases.

The conditions in which adynamia with exalted temperature is apt to prevail, are in the later stages of typhus and typhoid fevers, in protracted fevers of any kind where there has been a great draft upon the vital forces, in the progress of severe inflammation which has resulted in the breaking down of structure and the deposit of inflammatory products, and in tubercular or other cachexia.

While the vital forces must be nourished, supported and encouraged toward ultimate restoration, measures must be used also, which will restrain the temperature, if possible, at the same time. We have a limited number of remedies that act specifically for this purpose, and they cannot be placed in a distinct class. This influence of these agents will be found fully considered in the class in which the agent is placed because of a wider influence. They will be found classed usually as nerve or heart stimulants.

Bryonia and **Rhus** of the previous class have a most important place in these fevers, as has been specified. One of the best, if not, the best of the remedies for this purpose is **Cactus**, which will be found among the specified heart tonics. **Digitalis** is excellent for this purpose, although while it sustains the heart through the progress of the fever, it does not, to so great an extent as cactus, cause a reduction of the temperature or improve the general nerve tone and add to the nutrition of the heart. **Strophanthus** acts much the same as *digitalis*. **Anhalonium** is said to possess this power, but it has not yet been widely used. Other agents will be mentioned as we progress.

One of the safest measures is the abstraction of heat by the use of water. Much care must be exercised that the water be not too cold. The temperature of the water is lowered in proportion as the vital force is able to react under it. In feeble cases, sponging with water at temperature from 100 to 110 degrees is most satisfactory.

Judicious nutrition and perfect elimination are essential considerations in the treatment of adynamic fevers.

Note—The study of this first chapter of remedies has proven the statement previously made, that it is impossible as yet to arbitrarily classify our agents. It will be seen that, while these agents are used in the control of fevers, and as nerve sedatives, they are also antispasmodics to a marked degree in some cases, hypnotics, analgesics, diaphoretics, diuretics or alteratives. In each of the following classes the same fact will be found true. We have endeavored to classify the remedies as they are most commonly used, but each must be studied without regard to class, in the entire field of its action, especially as indicated by its specific symptomatology.

GROUP I.
Agents Acting on the Nervous System.

DIVISION 1.
Sedatives and Depressants.

CHAPTER II.

**Sedatives Commonly Used in the Control of
Pain—Anodynes, Analgesics.**

OPIUM.

MORPHINE.

SALTS OF MORPHINE.

CODEINE.

HEROIN.

CONIUM MACULATUM.

CANNABIS INDICTA

OPIUM.

Papaver somniferum.

Opium is the concrete milky exudation obtained by incising the unripe capsules of the white poppy of Asia Minor.

CONSTITUENTS—

Morphine, Codeine, Thebaine, Pseudo-Morphine, Narcine, Narcotine, Papaverine and twelve other alkaloids combined with Narceinic acid.

PREPARATIONS—

Hopi Pelvis, Powdered Opium. Dose, one-half to two grains.

Tincture Hopi, Tincture of Opium. Dose, five to twenty minims.

Tincture Hopi Dehydrate, Tincture of Deodorized Opium. Dose, five to twenty minims.

Tincture Hopi Camphorate, Camphorated Tincture of Opium (Paregoric). Dose, from one-fourth to two drachms.

Pelvis Ipecacuanhae et Hopi, Powder of Ipecac and Opium (Dover's Powder). Dose, five to ten grains.

Pelvis Ipecacuanhae et Hopi Composites, Compound Powder of Ipecac and Opium. (Beach's Diaphoretic Powder.) Dose, three to five

grains.

Morphine Sulphas. Dose, one-tenth to one-fourth grain.

Pelvis Morphine Composites, Compound Powder of Morphine.
(Tulsa Powder.) Dose, five to ten grains.

MORPHINE.

A white or colorless crystalline body in shining prismatic crystals; soluble in thirty-six parts of hot alcohol, and in alkalies; almost insoluble in water. But little used in medicine. Dose, from one-eighth to one-fourth of a grain.

The following salts of morphine are in common use:

Morphine Acetate.

A yellowish-white crystalline body, or an amorphous powder, bitter, inodorous except a slight odor of the acetic acid; soluble in two and one-half parts of water. Dose, from one-twentieth to one-half of a grain.

Morphine Sulphate.

In white feathery, silky crystals, without odor; of an intensely bitter taste; soluble in twenty-one parts of water and in seven hundred parts of alcohol. Dose, one-tenth to one-fourth of a grain.

Morphine Hydrochlorate.

Muriate of Morphine occurs in white needle-shaped, feathery, lustrous crystals; bitter and odorless; soluble in twenty-four parts of water and in sixty-two parts of alcohol. Dose, from one-twentieth to one-half of a grain.

Apomorphine Hydrochlorate.

This is the product of the action of hydrochloric acid on a modified form of the alkaloid morphine. It may also be obtained from codeine. It occurs as white or grayish white crystals, without odor, bitter, turning slightly green upon exposure to the air; soluble in forty-five parts of either water or of alcohol. If it produces an emerald-green tint in solution in water it must be rejected. It may become changed in

character and dangerous. Solutions must be freshly made.

Apomorphine was first used only as an emetic; usually hypodermically. The dose for this purpose is from one-twentieth to one-sixteenth of a grain, although one-eighth of a grain may be given. It is not safe in any dose with children. It may be given to eject bodies from the esophagus to evacuate the stomach after the injection of poisons, and in extreme asthmatic or catarrhal attacks.

A field of action has developed for this remedy, outside of its influence as an emetic, which is important. There is a consensus of opinion among careful observers as to this influence. One writer says that in wild delirium, sleep may be induced with this remedy, and a restful quiet. It should be given in doses of from one one-hundredth to one-thirtieth of a grain, hypodermically injected. The dose is less than the emetic dose, and yet sufficient to produce a physiological effect. It is not given until after the patient is undressed and in bed ready to go to sleep.

Where it is used for its hypnotic effect alone, and the patient has not previously taken it, it might be well to begin with a dose as small as the one one hundredth of a grain. In sthenic, cases, with much delirium, a little nausea need not be avoided. The influence of the agent is not protracted, and in some cases it must be repeated in two or three hours. In others it produces a restfulness, which results in sleep, independent of further action of the remedy.

In hysterical attacks, the agent is valuable, as it produces general quiet, and refreshing sleep. It may be used in the place of morphine and *opium* with those who are addicted to a habit for these drugs, and it will produce the same results. The drug is a treacherous one, and consequently dangerous, and must therefore be given with care.

In very minute doses, it is given in **bronchitis**, where there is a deficiency of secretion, or in croup, producing relaxation and expectoration. It is given as an expectorant in cough mixtures, with good results, but its emetic influence should not be induced. One one-hundredth of a grain, repeated every two hours, will be sufficiently large dosage. It produces a watery secretion of mucus, which is often undesirable.

It should be used only with adults, as stated, as children are too susceptible to its influence. Kinnett has used it in pain from spasms of the pylorus, and others mention its influence for **spasmodic pain** in severe, acute stomach disorder in sthenic cases.

Dr. Dice believes apomorphine given in small doses frequently repeated in the initial stage of appendicitis will prevent the development of many cases of this disease. He dissolves also a dram of sulphate magnesium in four ounces of water and gives a teaspoonful every two hours with it.

Apomorphine in doses of One-thirtieth of a grain or less, frequently repeated controls some very severe cases of vomiting.

In the treatment of alcoholism, this agent is given in sufficient quantity to produce mild nausea; then one-thirtieth of a grain of strychnine or other indicated stimulant is given for its influence upon the nervous system at the same time.

CODEINE.

Occurrence—An alkaloid of *opium* closely related to morphine, often, if not carefully prepared, containing a certain proportion of morphine.

Character—White octahedral crystals, bitter, odorless, permanent, soluble in eighty parts of water and in three parts of alcohol. The dose of codeine is from one-fourth to two grains.

Physiological Action—Its influence is that of an anodyne and antispasmodic, more active as an antispasmodic than morphine and much less narcotic. It controls pain without checking secretion to as great an extent as the other alkaloids of *opium*.

Therapy—It has a more marked influence upon **pain** in the **abdomen** and in the **pelvic organs**. Spasms, neuralgia and other painful conditions in these parts are well controlled by codeine. **Cramp colic** and spasmodic dysmenorrhea yield readily to its influence. It is advised in **diabetes mellitus** to control the excretion of sugar. It has been given in doses of fifteen or twenty grains daily for this purpose, in some cases with permanent results.

Codeine has a marked influence upon **spasmodic cough**. It is often given to soothe irritable conditions of the air passages and to control persistent annoying and exhausting cough.

Physiological Action of Opium and Morphine.

The action of **opium**, and of **morphine** and its narcotic salts, is much the same. *Opium* is stimulant and narcotic, according to the dose and susceptibility of the patient. Infants and old people are easily poisoned by the drug, while those addicted to alcohol can take very large doses without any bad effects; and those accustomed to the drug can take a poisonous dose with impunity.

In the healthy adult a moderate dose of *opium* stimulates all the nervous functions of the body, raises the spirits and excites intellectual action; this gives way to a condition of placidity, freedom from care, and a state of quiet enjoyment. In an hour or less, consciousness is lost in sleep, which may continue for eight hours or longer. On waking there is evidence of disturbance of the functions of the organism, such as nausea, vomiting, headache, constipation and diminished secretion, except that of the skin.

In a dose sufficient to cause death the period of excitement is short, while the strength of the system rapidly gives way to drowsiness and apoplectic sleep. There is stertorous breathing, dusky countenance, slow pulse, nearly total insensibility, only responding slightly to violent agitation, with confusion of the mind, and an inclination to continue in a comatose state with increasing debility. After a few hours, six to twelve, according to the dose and the resisting power of the patient, the face becomes pale, the pulse from being full and strong becomes weak and thready, with cold extremities, a cool and clammy skin, a slow gasping respiration; a condition from which it is impossible to rouse the patient and death soon follows.

The pulse is first slow from stimulation of the vasomotor nerve centers, and becomes rapid as these become paralyzed. The pupil is first contracted by stimulation of the oculo-motor nerves, and dilates as death approaches and these become paralyzed. Death results from paralysis of respiration.

With some individuals there appears to be an inherent and usually

permanent idiosyncrasy against the action of *opium* and morphine. An exceedingly minute dose with such, will produce unpleasant symptoms. These are nausea or violent vomiting, spasm of the stomach and loss of appetite, obstinate constipation or abdominal pain. In others there is nervous excitement, restlessness, headache, tremors, general distress and an increase of pain. With others it produces extreme wakefulness instead of restful sleep. In some there is diarrhea instead of constipation. Given under the conditions we have named as contraindications, it will often produce these phenomena; where there is an absence of idiosyncrasy, and where given under the proper conditions, the effects would be desirable.

Itching of the skin, inducing an apparent miliary eruption, is one of the unpleasant effects of its use, which, like any one of the others, may be always greatly exaggerated in certain individuals.

By using water as a solvent, or combining *opium* with ipecac or camphor, or in some cases with the bromides, these unpleasant effects can, in great measure, be overcome.

Its application to open wounds in childhood has produced marked narcotic effects. It has poisoned infants while nursing, the mother either taking it as medicine or habitually.

Caution—All of the effects of these agents are especially marked in infants and early childhood. The nervous system is profoundly impressed by them, and the dose, if given at all to very young babes, should be infinitesimal.

Its administration can be avoided in nearly all cases with these little patients, as we have access to many agents which, while not working actively in adults, produce most satisfactorily soothing, anodyne or pain-relieving properties in childhood.

Opium addiction is acquired by continued use of the agent, and is debasing and deadly in its effects.

Another serious objection to its administration in large doses often is that it conceals or obscures the actual condition, the diagnostic symptoms or the specific disease indications, and permits disease to advance to formidable proportions before its real character is known.

This is true of appendicitis and other purulent inflammatory conditions.

This agent is so convenient and produces such immediate effects that it is often used by the indolent, careless physician, when other agents would produce better after results, and would more speedily promote a permanent cure. It is, therefore, proper to **caution** the young physician, against depending, upon it to too great an extent, and to urge him to study well all other agents acting synergistically, so that when his knowledge of the other agents permits him to choose between them he will prefer them. He may thus be able to select an agent with a single direct influence, where, with the administration of this, he has undesirable side influences to overcome in addition to the treatment of the other conditions.

Administration—*Opium* may be administered by the mouth, by the rectum or vagina, by the hypodermic injection of its alkaloids, by application to a portion of the surface of the body after removal of the cuticle, by inhalation or by insufflation.

Where there is a temporarily apparent contraindication for its use, the aqueous extract or the deodorized tincture (aqueous) or other aqueous preparations, may be used, as water does not dissolve the narcotine, which is believed to be the irritating and depressing principle of the alkaloids.

Or it may be given in conjunction with some agent which will overcome the antagonizing conditions. The acidity of the stomach may be neutralized by an agreeable alkaline aperient. The inactive secretions may be partially reestablished by *pilocarpine* or *jaborandi*, or the bromides may be given in conjunction to soothe the nervous system, or *ergot* to unload the brain of an excess of blood.

The hypodermic use of morphine is demanded and is justifiable where great pain is present. In these cases the size of the dose must be determined by the circumstances. Its influence is prompt and satisfactory.

This method is preferable because the chemical influences of the gastric secretions upon the salt are avoided.

Veterinarians find it necessary to always administer morphine in this manner, as often no desirable effects are produced if brought in contact with the stomach and intestinal secretions.

Specific Symptomatology—When *opium* is given carelessly or promiscuously, unfavorable results may occur. The conditions under which the administration of *opium* or its narcotic salts are admissible are as follows: There is pain without cerebral engorgement; there is an absence of flushed face, but not pallor; there is a relaxed, cool and perhaps moist skin; the tongue is moist and the pupils are not contracted.

Extreme wakefulness or restlessness, painful, spasmodic conditions, excessive passive discharges of whatever character and local inflammations with the above conditions all indicate the use of the agent.

Pain is the great and primary indication for *opium*. The agent can often be substituted in mild cases, and with children, and the causes of pain can often be removed by other agents; but severe, persistent, racking pain has no other antidote except anesthesia.

Contra-indications—In its primary influence it is a brain and nerve stimulant. It, is, therefore, contra-indicated where there is an irritated and overstimulated nervous system, with flushed face, bright eyes with contracted pupils, dry, hot skin, dry, coated tongue and inactivity of the excretory functions. Administered under these circumstances, it will increase the restlessness and induce general distress and painful wakefulness.

Therapy—In sudden acute pain, in pain from wounds or injury, or from burns, the contra-indications are seldom present, and morphine can be administered usually hypodermically.

Pain, like a persistent high temperature; will in time produce serious impressions upon the system which, in themselves, will be hard to overcome. When pain is not extreme equally good results, however, can be obtained in many cases from smaller doses of this agent, as from larger ones, with much less impression upon excretion.

In the successful and highly satisfactory treatment of **peritonitis**,

appendicitis, pleuritis, ovaritis or metritis, this author early adopted the uniform method of giving the indicated remedies as indicated, and for **general or local soreness or tenderness** increased on pressure or on movement of the bed or clothes, he frequently gives from two to five drops of the deodorized tincture of *opium* every two hours; seldom more. This acts in harmony with bryonia, which is specifically indicated, especially if there be occasional quick, sharp darting or shooting pains, with the soreness. Heat may be applied. In from six to twelve hours the distress is relieved, and in twenty-four hours the patient is in every way improved. This is accomplished without producing dullness, drowsiness or undue sleep, or without locking up the secretions and excretions, in fact, without exhibiting but few if any of the physiological influences of the remedy.

Where distress or wakefulness is present, and of such a character that morphia is directly indicated, a small dose often repeated in the stomach will sometimes do better than large doses. In these cases, if half a grain be dissolved in two ounces of water, and a teaspoonful be given every fifteen minutes, the patient will soon become soothed and quiet and will sleep naturally without knowing what has induced it; a much smaller quantity than is usually given, being found necessary. In gastric hyperacidity add a grain or two of sodium bicarbonate to each dose.

It reduces congestion and engorgement of serous membranes most rapidly, and is thus specific in the above-named inflammatory conditions, when small, sharp, stabbing pains and diffused tenderness are the leading symptoms.

It has an especial action on mucous surfaces. Its influence tends to reduce excessive activity or hyper-secretion. It is for this latter effect that it is useful in **catarrhs** of all characters, in **diarrheas** and excessive activity of all secreting organs.

It controls irritation of the peripheral nerves in the intestinal canal, and thus arrests **diarrhea** and controls undue peristaltic action, which in these cases is often necessary. In **surgical diseases** of the intestinal canal and after operations this effect is quickly and essentially obtained.

Opium is a desirable **diaphoretic**. It promotes excretion from the skin to

a marked degree, exercising this function often, while it locks up the intestinal and renal secretions. It is often given in combination with a relaxant or an emetic for this purpose, and is officinal in combination with *camphor* and *ipecac*, as **Dover's powder**. It is or it may be combined with powdered *asclepias tuberosa* with happy results.

It is common practice to use *opium* or morphia in solution for **eye washes**—collyria. It is serviceable in many cases.

Opium and its alkaloids are powerful **antispasmodics**, and are of general use in local spasm and in convulsion. Specifically, it is useful in colic from **biliary** or **renal calculi**, in **uterine** and **ovarian colic** and in the **pains** of **labor**, properly adapted; also in **lumbago**, **sciatica**, **angina pectoris**, gastrodynia, pleurodynia and other forms of neuralgia.

In **puerperal convulsions** morphine, hypodermically, was by some considered a most superior agent, although those familiar with *veratrum* prefer the latter. The dose must be large and must be repeated if needed. It is now seldom relied upon in this serious condition. It locks the secretions preventing elimination, obscures actual conditions and encourages stasis.

Many physicians use *opium* to control **passive hemorrhage**, hemorrhages from the kidneys and womb, from the lungs and bronchi, and from the stomach, and from the bowels in typhoid.

It may, however, usually be dispensed with in these cases, as it is not desirable to lock up the natural secretions of these organs, a common result from the use of this agent.

It was advised by Pavy as an important agent in the treatment of **diabetes**, to control all unpleasant conditions, especially the elimination of sugar and the extreme thirst. Its influence is not permanent, and it does not cure.

It is used also in **spermatorrhea**, and will temporarily reduce sexual erethrism and unload the organs of blood and restrain abnormal losses and discharges, but it is not usually curative and cannot be persisted in without injury.

For **gonorrhoeal** injections and as bladder washes and in leucorrhoea, it is incorporated in liniments and is used as a cataphor.

In the form also of **suppositoria**, introduced into the rectum or vagina, it is useful for painful conditions in the rectum and lower bowel, and in painful pelvic disorders.

It is also applicable in this manner to **painful kidney** and certain bladder troubles, in stone and gravel, and in obstinate vomiting.

Immediate relief from the tenesmus of **dysentery** is accomplished by the injection of a few drops of a liquid extract of **opium** in two ounces of a solution of starch, following the bowel movement.

In China, India, Persia and Turkey, in Mohammedan and Hindoo countries, where their religion prohibits the use of alcoholic intoxicants, **opium** was at one time smoked more generally than our own people use tobacco and alcohol. Its effects are fearful. To this may doubtless be ascribed much of the intellectual inactivity, the moral debasement and the lack of advancement of the civilization of these countries.

Toxicity—**Opium** has been used as much if not more than any other agent for suicidal or homicidal purposes. It is certainly a desirable agent for suicide if one desires a comfortable and painless death. It is also acceptable when euthanasia is desired.

Antidotes—It is antidoted by extreme heat, physical activity, increased nerve action and stimulation. Active mechanical emetics or the stomach pump should be used to evacuate the stomach. These are **mustard** in warm water, **ippecac**, **lobelia** in single full doses, or sulphate of zinc.

The direct antagonists are atropia in small doses hypodermically in the early stages of its toxication, strong coffee, or caffeine hypodermically in large doses—two to five grains, strychnine hypodermically and nitroglycerine, alcohol, ammonium and **digitalis**. Potassium permanganate will neutralize the poisonous properties of morphine. The patient is kept moving with flagellation and electricity and in extreme cases artificial respiration.

HEROIN.

HEROIN HYDROCHLORIDE.

Synonyms—Diacetylmorphine Hydrochloride.

This is one of the recent derivatives of *opium* which has come into use because of its soothing influence over the respiration and the respiratory apparatus.

This is a bitter, odorless powder, composed of minute white crystals. Unlike morphine, it does not stupefy the patient nor induce constipation. It is classed among, the *opium* preparations, and is therefore included in the Harrison Act, as one of the habit-forming drugs.

The agent is given in doses of from one twenty-fifth to one-sixth of a grain. Small doses frequently repeated will produce the best results.

It is without doubt a powerful depressant to the nervous system and especially to the respiratory center. One of my patients, of his own accord, purchased a bottle of a mixture of heroin for a cough, and took it so frequently that a temporary but severe mania was induced, for which he was taken to a detention hospital, and received injuries from which he died. It is thought to be of some benefit in the treatment of certain coughs. It is an ingredient of several proprietary cough remedies.

CONIUM.

Conium maculatum.

Synonyms—Poison Hemlock; Poison Parsley.

CONSTITUENTS—

A volatile alkaloid Conine, Conhydrine, Methylcaine, Pseudo Conhydrine.

PREPARATIONS—

Extractum Conii, Extract of Conium. Dose, one-half grain.

Extractum Conii Fluidum, Fluid Extract of Conium. Dose, two to six minims.

Expressed juice of the fresh plant preserved with alcohol. Dose, three minims.

Specific Conium. Dose, one to five minims.

There is great variation in the quality of the different preparations of *conium*, and care must be exercised in selecting a good one.

Physiological Action—When given in a sufficient dose, *conium* causes complete relaxation of the whole muscular system; the eyes close, the movements of the eyeballs are sluggish, mastication and swallowing are difficult, speech is slow and maintained by an effort, the voice is hoarse, while the heart and intelligence are not disturbed. In a fatal dose, the lower limbs become paralyzed, the effect gradually ascending to the upper part of the body, intelligence being retained to the last.

Administration—If the characteristic odor of this substance is absent, the probabilities are that it is devoid of value, as it is the volatile principle which possesses the odor, and it is that upon which its value as a therapeutic agent depends to a great extent. Care must be taken in diluting fluid preparations as they are apt to precipitate. Fresh preparations only, diluted when administered, are reliable.

Specific Symptomatology—The agent relieves the **pain of cancers and ulcers**. In this it is of specific value. It is of much importance in **ulceration of the stomach** either acute or chronic, and in incipient **gastric cancer**. It will soothe the pain more efficiently than other apparently more powerful agents. It must be given in large doses; as much as fifteen minims of the fluid extract are sometimes needed. Large doses must be carefully watched. It relieves distress in the glandular organs and in glandular enlargements, when there is a scrofulous or cancerous cachexia, dull aching pains not usually acute, not sharp cutting pains. In the pain of cancer of the pelvic organs or of the mammae it gives relief, and, indeed, it gives relief to pain in the pelvic organs whatever the cause or character.

Therapy—The anodyne and antispasmodic soothing properties of the agent suggest its use in spasmodic affections and irregular muscular movements—movements attended by extreme activity of the motor nerves. In **paralysis agitans**, in **chorea** and in **hysteria**, in **delirium tremens** and **acute mania** it is thus advised. Its use in **trismus**, **laryngeal spasm**, in irregular muscular twitchings and spasmodic **wry neck**, will be attended with excellent results. In profound spasm, as in convulsions, epilepsy and tetanus, while of some benefit, it is of no marked value and more potent agents are prescribed. In its adminis-

tration, hypodermic injections of **Hydrobromate of Conine** are sometimes much more prompt and satisfactory in their action.

Conium is useful in many kinds of cough and inflammatory diseases of the chest. In **whooping cough** and in many other spasmodic coughs it is of much service. It is useful in **asthma** and the difficult breathing of **emphysema**. It may be used internally or the ointment may be applied over the chest.

It is valuable in **laryngitis** and in dry irritable bronchial coughs and in phthisis. In all such coughs the vapors inhaled from the fluid extract or juice dropped on the surface of hot water, in a rather close-mouthed vessel, is sometimes of marked benefit. In the pains of **chronic hepatitis conium** is excellent.

As an application to **cancerous surfaces**, poultices prepared from the leaves have given relief, and ointments carefully prepared which contain the juice or small quantities of conine, will be found of service. Lotions containing the juice or fluid extract will be found of use in open sores and persistent ulcerations.

In ovarian pain or pain from **ulceration of the cervix uteri**, or other persistent uterine pain or distress, a vaginal suppository containing a grain of **conium** may be inserted at night, or twice daily, if the patient be recumbent. **Rectal fissures** and painful ulcers may be treated with rectal suppositories. Pain from acute pelvic inflammation may be relieved by this method.

CANNABIS.

Cannabis indica.

Synonyms—***Cannabis Sativa***, Indian Hemp.

CONSTITUENTS—

Cannabin, Cannabinine, Volatile Oil, Gum, Sugar, Potassium Nitrate.

PREPARATIONS—

Extractum Cannabis Indicae, Extract of Cannabis Indica. Dose, one-sixth to one grain.

Extractum Cannabis Indicae Fluidum, Fluid Extract of Cannabis Indica. Dose, one to five minims.

Specific Medicine Cannabis. Dose, one to ten minims.

The strength of preparations varies, and some may be inert. If the precipitate formed when the drug is added to water be olive-green, it is active; but its strength should always be tested by tentative doses.

Physiological Action—*Cannabis indica* is narcotic. Bartholow classed it as a cerebral excitant. In some persons the drug causes excitement tending to acts of violence and crime; in others it excites merriment, or a maudlin state. In general it produces hallucination, perverts the natural perception of objects, intensifies the perception of sound, dilates the pupils, abolishes pain, and, in poisonous doses, causes spasms, convulsions, collapse, pale, clammy, insensible skin, extreme debility, feeble pulse, and finally paralysis of respiration. The habitual use of the drug causes bloating of the face, weak, tremulous limbs, injected eyes, imbecility, and ultimately death from marasmus.

Those who use *cannabis* regularly, believe that in medicinal doses it is not poisonous. It can be safely given in full doses, the tincture in from ten to twenty minims, and the solid extract in from one-half to two grains. It seen to be a true sedative to the stomach with few undesirable influences. Its best effects are secured when given in conjunction with alkalies in full doses or with mild aperients.

Therapy—*Cannabis Indica* is sedative, narcotic, anodyne and, to a limited degree, anti-spasmodic. It acts upon disturbed function of the nervous system.

It is a remedy for **disordered mental action**.

It is a remedy for **disorders of motility**, involuntary, irregular, muscular movements, especially if of a distressing character.

It is a remedy to arrest or control **pain**, often acting advantageously in conjunction with other pain-quieting agents, intensifying, modifying or favorably influencing their action.

It is a remedy for excitable and irritable **hyperaesthetic** conditions of the **genito-urinary organs**, with increased functional activity and uterine disorders.

In many forms of **urinary irritation**, its action is prompt and satisfactory especially, Quincey says, where there are only a few drops passed frequently, constant unsatisfied desire, burning pain and vesical tenesmus.

In the **wakefulness** of old age, in the **restlessness** of nervous exhaustion, and in **melancholia**, it is an important remedy. It is useful in the treatment of **neuralgia** and **hemicrania**. It takes high rank in affections of the brain and nerves of the head, especially if nervous vertigo be present, and in those attacks of hemicrania which occur periodically, very distressing, causing delirium and much prostration. It is especially applicable in **sub-acute inflammation** of the **brain**, in **delirium tremens** and in the hypochondria of the **menopause**.

This remedy has received a great deal of attention in its adaptability to **cerebro-spinal meningitis**, and with varying but encouraging results, especially in the earlier stages of irritation and congestion. It is useful also in **hydrophobia**, and in large doses it is sometimes palliative to the distressing symptoms. Minute doses will cure some cases of **tinnitus aurium**.

It is useful in the distress of **Potts' disease** and hip joint disease and in general rickets. In **epilepsy**, either alone or combined with the bromides, it has been given very extensively for several years.

Dr. Cook of Seattle suffered from **nervous breakdown** with extreme exhaustion; **tremor** on awakening in the morning, with active **functional heart disturbance**. He took five drops of specific **cannabis** three times a day on the tongue, followed by a sip of water. On extreme occasions, he would repeat the dose once in half an hour. Not only was the whole nervous excitability controlled, but the heart was restored to its normal action and the urinary irritability was overcome.

It is of much use in **paralysis agitans**, in relief of the lightning pains of **locomotor ataxia**, and especially in chorea and in general muscular tremblings. In chronic conditions accompanied by persistent pain, it ameliorates the pain.

In **functional disorder** of the **stomach** accompanied by pain, it is an excellent sedative, and in intestinal disorders it is equally applicable. It does not suppress secretions or disarrange the functional operations

of the organs.

In aching and painful irritation, or in the passage of **gravel**, it is a most soothing remedy. It is beneficial here also in painful hematuria, whether from cancer or tuberculosis, from profound congestion or nephritis.

It is a soothing tonic to the uterine muscular structure, and in inertia and **subinvolution** it increases muscular power and energy and promotes contraction. It is useful in **menorrhagia** and **metrorrhagia**. It is a valuable sedative adjuvant to combine with the well known uterine tonics in general disorders of the pelvic organs amenable to medical treatment not of a surgical character, especially if the pains are of neuralgic or spasmodic character. It will allay **abnormal sexual appetite**, and will overcome the **hysteria** and emotional excitement which occur in some women at the menstrual period.

In **neuralgicdysmenorrhea** it will occasionally cure patients who have been treated by other methods without results. There are few remedies that will excel it in this disorder, but the remedy must be given continuously, beginning before the expected paroxysm some little time and continued for a time after the paroxysm is relieved.

It is an excellent remedy in **gonorrhoea** with **sexual hyperaesthesia**. Here its influence is prompt; it arrests chordee, **priapism** and **spermatorrhea**.

It controls violent erection and soothes the mental anxiety which aggravates the symptoms. It cures many **irritable** states of the **bladder**. It is curative in **strangury** and **painful urination** with burning and scalding. In spasmodic stricture, with *gelsemium*. or *cimicifuga*, it relieves quickly. It is a remedy for functional **impotence**.

It is soothing to irritable bronchial **coughs** and laryngeal spasm, and in coughs from tickling in the throat; also in whooping cough and in spasmodic coughs of whatever character. It is a common ingredient of cough syrups.

Co-operatives—The agent acts similarly in a general way to *opium*, *gelsemium*, *passiflora*, the bromides, chloral and *hyoscyamus*.

GROUP I.
Agents Acting on the Nervous System.

DIVISION 1.
Sedatives and Depressants.

CHAPTER III.
Sedatives Used to Induce Sleep.

PASSIFLORA
HYOSCYAMUS
PISCIDIA
CHLORAL
SULPHONAL
VERONAL

PASSIFLORA. *Passiflora incarnata.*

Synonym—Passion Flower.

PREPARATION—

Extractum Passiflorae Fluidum, Fluid Extract of Passiflora. Dose, from ten minims to one dram.

Specific Passiflora. Dose, from one to fifteen minims.

Physiological Action—Ott reports a series of experiments to determine the physiological action of *passiflora incarnata*. As a result he concludes that the agent exercises a depressing influence upon the reflex activity of the spinal cord. In acute mania it arrests the exaggerated activity of the cortex. It temporarily reduces the pulse and arterial tension, the latter apparently being due to an action upon the vasomotor center of the medulla oblongata. It stimulates the respiration and can therefore be given in large doses without danger.

Passiflora given in excessive doses causes spasms and paralysis in animals. It acts as a narcotic and antispasmodic in man when given in moderate doses. No extended investigation concerning its physiological action has yet been made.

Broadnax said that it is used by negroes in an application of the

bruised leaves as a poultice to the head, for headaches; also to bruises to relieve pain. A decoction is used in teaspoon and tablespoonful doses in various aches and pains. Old rheumatics use poultices made from a strong decoction with cloths wrung out and bound tightly over the swollen joints. His attention was called to it by the peculiar odor of a mess of the green bruised leaves, bound to an old woman's abdomen. By this he learned of its use and used it for twenty-five years quite steadily.

It is as yet difficult to explain the fact that in some cases this agent is prompt, efficient and highly satisfactory, while in others the same preparation is inactive. This fact has created a wide difference of opinion between observers as to its usefulness.

Specific Symptomatology—Wakefulness, disturbed sleep from mental worry, and exhaustion from cerebral fulness and from excitement, especially with feebleness. Anemic patients are relieved by it, also the wakefulness of infants and the aged. It is not usually efficient if the wakefulness is caused by pain, nor when the patient is in full strength.

Nervous excitement, and irritation with muscular twitchings—evidences of approaching convulsions in childhood—with marked cerebral fulness are indications, and it is given at any time preceding or during convulsive paroxysms if it can be swallowed. It is indicated in **convulsions** of any character.

Therapy—In the **convulsions of childhood** it is a most reliable agent. The writer has given it at the onset of the spasm when the approaching symptoms were unmistakable, and has had the satisfaction of seeing all the symptoms disappear so promptly, that confidence has become established. It has controlled **severe spasms** while the irritating causes yet remained, and after all antispasmodics except anesthesia have been ineffectual. It can be relied upon to hold the spasms in check while the causes are being removed, and reduces their force and character. In **epilepsy** it lessens the number of the paroxysms, but to ward off the paroxysms the attack must be anticipated by a full dose of the remedy. When its approach is unannounced, the full effects of the agent are not obtained.

Passiflora has hypnotic properties which differ from other agents of this class in that the sleep produced is normal in all its characteristics. The

patient goes to sleep naturally, can be awakened as usual at any time, to fall into a quiet, natural slumber. He awakens at the usual time rested and refreshed, with no disturbance of the cerebral functions, no languor, dulness or other disagreeable sensations.

Dr. Steele of Missouri uses *passiflora* in **chorea**. In persistent cases he combines it with *cimicifuga* with satisfactory results.

If given in doses sufficiently large, it may be relied upon to assist in the relaxation of the tonic spasm of meningitis, and local tetanic spasm. It has relieved a few cases of **general tetanus**. It has cured tetanus in horses. It may be given as an antidote to the spasms of strychnine poisoning, but it must be given in doses of from one-fourth to one-half ounce and frequently repeated. As an anti-spasmodic in cases where there is engorgement of the nerve centers, it is applicable. It has relieved tonic, and clonic spasms, and the spasms of sthenic as well as asthenic conditions.

In the treatment of **hysteria** the agent should be persisted in. It may be given in conjunction with *cimicifuga*, *gelsemium* and *pulsatilla*, and if there be pain, due to menstrual or other disorders, it may be combined with *cannabis indica*, or *Jamaica dogwood*, in appropriate and properly regulated doses.

Dr. Roth believes that *passiflora* is a direct stomach sedative. A number of physicians have confirmed this opinion. One patient who had been on a **spree** for days suffering from **persistent hiccough**, took a teaspoonful of the tincture every hour. This gave him freedom from the hiccough and in a short time a quiet, natural, continued sleep, waking in the morning in nearly a normal condition.

Dr. Freeman gives a combination of *passiflora* four drams, *hyoscyamus* one-half dram, *cannabis indica* one-half dram in a four ounce mixture, and to patients addicted to **drug habits**, who cannot sleep, he gives from one to two teaspoonfuls of this at early bedtime, repeated if necessary.

One of the attending physicians in the tuberculosis wards of Cook County Hospital told this author that *passiflora* was his reliance in the **sleeplessness of tuberculosis**, especially controlling the **cough**. He would add two drams of *passiflora* to three ounces of water, and give a

dram every half hour, the latter part of the day or early evening and during the night, and very seldom failed to secure satisfactory results. Other forms of **cough** can be relieved by it.

The agent is not known to possess injurious or poisonous properties. It has been used in erysipelas both externally and internally, and in acute inflammatory skin disorders with nervous elements and nervous complications.

HYOSCYAMUS. *Hyoscyamus niger*

Synonym—Henbane.

CONSTITUENTS—

Hyoscyamine, Hyoscine, Scopolamine, Hyoscipicrin.

PREPARATIONS—

Extractum Hyoscyami, Extract of Hyoscyamus. Dose, from one to two grains.

Extractum Hyoscyami Fluidum, Fluid Extract of Hyoscyamus. Dose, from five to twenty minims.

Specific Hyoscyamus. Dose, from one to ten minims.

Physiological Action—*Henbane* is a narcotic and causes deranged vision, headache, giddiness, dilated pupils, dry throat, hoarseness, weakness of the lower limbs, spasms, cramps, paralysis, loss of speech, or loquacious delirium with hallucinations, followed by a dreamy sleep, according to the amount taken. A continuous use of the medicine causes an eruption of the skin of a red color, which is dry and itching. In some cases large doses cause furious delirium.

While power to temporarily increase nerve force—mild stimulant properties—is ascribed to *hyoscyamus*, that influence is much less marked than *belladonna* and *stramonium*, although its general effects are in many ways similar to these agents in medicinal doses. It is almost entirely devoid of irritant properties, but is soothing, calmative and sedative to a marked degree.

Specific Symptomatology—It is specific in excitable mental conditions, and in the violent and noisy delirium of fevers and acute

inflammations, to **subdue** the **excitement** and to **induce sleep**.

In all conditions where there are busy delirium, hallucinations, weight in the front part of the brain, extreme activity of the mind, disturbed sleep with wild and frightful dreams, coma vigil, flushed face, wild, red and restless eyes, it is a sure remedy. In the restlessness, ceaseless agitation and insomnia of exhaustion, and in diseases of infants and of the extreme aged and feeble, it is especially applicable.

Therapy—It is valuable in the **pneumonitis** of infants for its general soothing influence, and for its sedative effect upon the cough and respiration, and also in **bronchitis**, with short, sharp cough. A dry cough, increased upon lying down and relieved upon getting up, is surely relieved by its use.

It does not arrest secretion, and in this particular is in every way superior to *opium*. It does not disturb the mind or produce headache.

The anodyne properties of this agent are not marked in its general application, but administered in the **neuralgia** of exhaustion, in this variety of **neuralgic dysmenorrhea** and in **irritable** conditions of the **bladder**, as well as in the bone pains of **syphilis**, it exercises anodyne properties to a remarkable degree. In hepatic, renal, intestinal, ovarian and uterine **pain** accompanied with great restlessness, it is of much value.

As a **hypnotic** for infants and the aged there is no happier agent than *hyoscyamus*, in small doses. From five to ten drops of the fluid extract should be dropped into half a glassful of water, and a teaspoonful may be given every fifteen minutes, for two hours before the usual bedtime or until the patient sleeps. The sleep is quiet, restful, natural and not too sound. The patient awakens refreshed. It is indicated also in patients enfeebled from prolonged illness.

In **headaches** attendant upon the above irritable conditions the agent is applicable.

Since the profession has learned to use hyoscyamine and morphine together, for the peculiar **analgesic influence** of this compound, I am reminded that during the largest part of my experience I have been in the habit of combining morphine, when that remedy is indicated for

pain, with *hyoscyamus*, with excellent results.

It is well known that morphine is acted upon imperfectly, or chemically, by an extremely avid condition of the stomach. Also that there are certain nervous constitutions that have unpleasant nervous irritation from its influence (an idiosyncrasy, often). In place of acting as a stimulant, it acts as an irritant and depressant.

I have learned that the use of *hyoscyamus*, in the proportion of ten drops of the specific medicine with one dram or more of strontium bromide, combined with a mild stimulant such as *capsicum*, and one grain of morphine added to the whole, has remarkable **pain relieving properties** out of all proportion to the small amount of morphine it contains. I add the above to two ounces of water or other simple menstruum, and give it in teaspoonful doses every ten, twenty or thirty minutes until the first effects are observed.

The influence of this simple preparation is exceedingly happy, especially where something soothing is needed for distress, general discomfort, nervous irritability, or wakefulness. A sensitive stomach after anesthesia for surgical operations, will retain this in a remarkable manner usually, and the patient can thus be kept free from pain and discomfort, and will enjoy natural and restful sleep with only an occasional dose.

The alkaloid **Hyoscyamine Sulphate**, in doses of one-eightieth of a grain, works better often than other forms of the agent in **paralysis agitans**, **locomotor ataxia**, the **tremors** of old age, and in **tetanus**. It is of value in **chorea**. In **chronic dementia**, with destructive tendencies, and sleeplessness, **insanity** with delusions and hallucinations, in epileptic **mania**, and in fact, in mania of all forms it is excellent, especially when there are with the above, erratic tendencies.

Co-Operatives—*Gelsemium*, *stramonium*, *opium* and *passiflora incarnata*, facilitate the action of *hyoscyamus*. The alkaloid duboisia is said to be identical with hyoscyamine. Atropine is also identical in some of its properties.

PISCIDIA

Piscidia erythrina

Synonym—Jamaica Dogwood.

CONSTITUENTS—

Piscidin, Resin, Oil, Calcium Oxalate.

PREPARATIONS—

Extractum Piscidiae Fluidum, Fluid Extract of *Piscidia*. Dose, from a half to two drams.

Physiological Action—In moderate doses, *Piscidia* lessens sensation, induces sleep and increases the saliva and perspiration. In toxic doses it destroys sensation, paralyzes the respiratory centers, reduces the heart's action; first increases, then diminishes arterial tension and decreases the pulse rate. It first contracts, then dilates the pupils in full overdoses. It causes dyspnea, spinal convulsions, general paralysis and death. It reduces reflex action, including tetanic spasm, by excessive stimulation of the spinal cord.

Felter and Lloyd quote Dr., Ott as giving the following concerning the physiological action of this remedy: It increases the salivary and cutaneous secretions, slows the pulse, increases the arterial tension, its action being succeeded by reduced tension, which is due to a weakening of the heart. It dilates the pupils, except when the patient is passing into a state of asphyxia, when contraction takes place. It does not affect the irritability of the motor nerves, nor the peripheral sensory nerve ending. It may cause heart failure or arrest of respiratory action. In some susceptible patients small doses produce nausea, vomiting and headache.

Dr. Harris of New York says the remedy increases dyspnea, which is followed, from sufficient doses, by respiratory paralysis.

There is drowsiness, gradually increasing; muscular relaxation; incoordination of movement; diminished reflexes; lowered sensibility; dilatation of the pupils. Toxic doses produce convulsions and a tetanoid condition caused by overstimulation of the spinal cord.

Piscidia stimulates salivary secretion, diaphoresis, and to a slight extent diuresis.

It logically follows that its usefulness depends upon its action upon the brain and spinal cord, for other remedies excel it in its effect upon the heart, lungs and glands. Furthermore, it is well to consider that this remedy has no direct effect upon the gastro-intestinal tract, and that it therefore induces no nausea, no anorexia; that it does not suppress the secretions; that it does not inhibit normal peristalsis; causes no unpleasant after-effects and produces no subsequent craving for drugs. It may therefore truly be called a harmless nerve sedative, indicated in the three following conditions: (1) spasmodic affections; (2) neuralgic affections; (3) cerebral excitation.

Administration—The agent must be given in sufficient doses and repeated. It is not active in small doses. It lacks the power of *opium*, but operates in the same lines as an analgesic, with desirable exceptions.

It is especially applicable in those cases where the patient cannot take *opium* or morphine. It does not produce toxic or undesirable effects in medicinal doses.

Specific Symptomatology—The agent, in doses of from a half drachm to a drachm, will produce quiet and restful sleep, when the insomnia is due to nervous excitement, mental worry or anxiety, and in elderly patients, neurasthenics and children.

Therapy—In susceptible patients it will control **pain** and relieve **general distress**. It is distinctly a nerve sedative, and overcomes nervous excitability and also reflex irritability. It is an antispasmodic of much power in mild cases.

If given during the course of **inflammatory fever** of any character, and in inflammatory **rheumatism**, it is a useful and grateful remedy. It does not oppose other indicated agents, and induces the often needed sleep.

In violent **spasmodic cough** it produces relief, and in the irritating persistent cough of **bronchitis** it is of service as an auxiliary to cough syrups. In **phthisis** it controls the night cough and induces restful sleep.

It has been highly lauded as a specific in **whooping cough**. The **cough of phthisis** will yield to the remedy under consideration when large

doses of codeine have failed. In **dysmenorrhea** *piscidia* has been remarkably efficacious. A **morphine habitue**, taking ten grains three times daily, suffered excruciating agony at menstrual periods. An increase of two grains at each dose brought no relief. *Piscidia*, in ten drop doses every hour brought relief, and hitherto has proved unfailing in that particular case.

Acute **intestinal colic** yields to *piscidia*. **Gall-stone colic** and **renal colic**, while not yielding to the remedy as they do to morphine, are rendered bearable by *Jamaica dogwood* after an initial dose of the former. It has been used to lessen labor pains, and has been lauded by some observers as highly efficacious.

Facial neuralgia seems particularly amenable to the action of *piscidia*. **Ovarian neuralgia** and pains due to straining on the uterine ligaments in displacement and tumor, are relieved by this remedy. It seems to have a satisfactory influence on all pelvic pain.

For **sleeplessness**, in both sthenic and asthenic conditions, *piscidia* is a reliable remedy. **Delirium** in sthenic conditions yields to *piscidia* as does **hysteria** consequent upon uterine and ovarian disorders. *Piscidia* is of use in hemicrania and congestive headaches generally.

In **obstetrics** it controls erratic pains and conduces to quiet and rest, and overcomes rigidity by its specific relaxing or antispasmodic influence, although it does not interfere with the normal uterine contractions.

In the distress following the adjustment of **fractured bones** or reduction of **dislocations**, it is especially useful and satisfactory.

It is often applied to local painful conditions with benefit. It relieves **toothache**, local neuralgias, and the pain of developing felons and boils. In these cases it exhibits active anodyne properties.

It acts in close harmony with the vegetable uterine remedies, promoting the influence of *cimicifuga*, the *viburnums*, *senecio*, *helonias*, *pulsatilla* and *dioscorea*.

CHLORAL.

CHLORAL HYDRATE,

The name Chloral is authorized when Chloral hydrate is intended. If Chloral proper is intended, the U. S. Dispensatory specifies **Anhydrous Chloral**.

The influence of Chloral in full therapeutic doses is exercised in the production of sleep. If it be taken on a comparatively empty stomach the patient becomes quiet in half an hour, and the sleep lasts from two to six hours, according to the previous condition of the mind, whether tranquil or disturbed. It usually produces a dreamless, natural sleep, followed by few unpleasant symptoms. Occasionally, however, the dose fails, and the second or third dose is necessary.

At other times it produces cerebral distress or headache, nausea, faintness and extreme lassitude. There is no marked apparent influence upon the pulse or respiration in normal cases, but the pupil contracts somewhat. During the period of induced sleep the patient may be awakened to full consciousness, may take food, may even transact items of business, and then lie down and almost immediately fall into a continued natural sleep. Cough is not always allayed by it, and this may awaken the patient, or a desire to urinate may awaken him.

Chloral has but little influence over pain. It may be given during pain to induce sleep. If that result is accomplished by sufficient dosage, the patient's countenance shows the presence of pain, and he will complain upon waking of its having continued during his sleep.

Greatly prolonged use of chloral produces impairment of the appetite, bad taste in the mouth and bad breath, with fetid fecal discharges, deficient secretion of the gastric and biliary fluids, and an increase of the nervous phenomena for which it is usually prescribed; also an eruption, irritation or ecchymosis and red rash of the skin with desquamation. It permanently abates both mental and physical vigor.

Contra-Indications—Chloral is contra-indicated in feebleness with exhaustion, or when there is a tendency to stupor or coma or general dullness, and in cerebral anemia. It is contra-indicated in weak heart, especially if existing in alcoholism.

Specific Symptomatology—The direct influence of chloral is that of a profound **nerve sedative** and a **producer** of quiet, restful and natural **sleep**. In its influence over the muscular system it produces profound **relaxation** similar to that of *gelsemium*, but attended in extreme cases, or where the heart is feeble, with more danger.

Therapy—It is a promoter of quiet and repose in all conditions of nervous excitability and extreme restlessness. In the excitement and **noisy delirium** of **fevers** no agent acts more satisfactorily. It quiets excitement, overcomes the delirium if due to cerebral engorgement and induces normal sleep.

It is a superb remedy in the sleeplessness of **inflammatory fevers**, and in the earlier stages of **typhoid** and other continued **fevers**, except in the later or asthenic stages when the vital force is exhausted when it must not be given.

Chloral will induce sleep in **chorea**, and during the sleep the symptoms will abate, but it does not cure the difficulty.

Chloral is of much value in **hysteria** and the nervous phenomena of this condition. It is best given in conjunction with a stimulant in asthenic cases, as it possesses no inherent stimulating properties.

It is a reliable remedy in **pruritus** from nervous causes, especially Pruritis vulvae of pregnancy, with nervous erethism which causes increased nervous phenomena and prevents sleep. One or two doses of fifteen grains will often control the condition for a day or two.

In **puerperal convulsions** chloral is a reliable remedy and has been often used in the past.

In **rigid os uteri**, with or without general nervous irritation, with hot vagina and irritable nagging pains, and no advancement of the labor, chloral is a useful remedy. Fifteen grains repeated if necessary in half an hour will usually cause an entire change in the condition. It will quickly relax the rigid os and change the character of the pains. It will quiet the nervous excitement and secure an interval of restful sleep.

It acts promptly in such a case if a diluted solution of twenty or thirty grains be injected into the rectum, previously evacuated with a hot

enema. It does not in these doses usually interfere with uterine contractions or subsequent involution.

It is a useful hypnotic in the **sleeplessness** of the aged, with whom small doses exercise a satisfactory influence. The influence of chloral upon children, in small doses of from one to three grains is very soothing. In **nervous and restless children** with disturbed sleep, children who toss about during the entire night or cry out frequently, or awake in terror, this agent has a charming influence. A small dose should be given an hour before bedtime and repeated as the child is put to bed—from one-fourth to three-fourths of a grain each year of the child's age. This should be repeated on two or three consecutive nights, if no unpleasant symptoms appear, when the bad habits will be temporarily broken. On their reappearance it may be resumed again for a night or two. The cause of the restlessness should be discovered and relieved also.

Chloral is an excellent remedy in **convulsions of children**. It is safe in proper doses and powerfully antispasmodic. In combination with the sodium or potassium bromides, a solution may be kept at hand for emergencies, and will prevent approaching spasm and promptly control those existing. It will allay nervous twitchings and other evidences of nerve irritation, and will soothe and quiet the patient and induce refreshing sleep. It is not to be given if the convulsions occur from exhaustion or after prostrating disease.

As we have learned our vegetable anti-spasmodics better, we depend on these with results so nearly perfect that we seldom think of the inorganic agents though potent and controllable.

Chloral is useful in **whooping cough** and in the paroxysm of spasmodic **asthma**. It will relieve **asthmatic dyspnea** occasionally when dependent upon nerve irritation.

It is used in **epilepsy** with advantage. In nocturnal **petit mal**, if the attack can be anticipated, a full dose at the bed hour will usually ward it off.

In **tetanus** chloral has been in quite common use, full doses being necessary. A physician whose name we have now lost, reported several years ago that he had cured several cases of traumatic tetanus by

opening the wound freely and filling it with finely-powdered chloral to the extent of sixty grains.

It is a reliable agent in **delirium tremens**, and in **acute mania** and in the **paralysis** of the **insane**. It soothes excitability as well as induces sleep.

Theoretically, chloral should prevent the excretion of sugar in the urine in **diabetes mellitus**. In practice, a few cases only have been so benefited. It deserves further investigation in this line.

Chloral is not a remedy for hypodermic injection; it produces local irritation and abscess. It has been advised for use by intravenous injection in the treatment of tetanus, puerperal convulsions, strychnine poisoning, and hydrophobia, but such care is demanded in its use that it has not received general adoption. Further investigations may prove its benefits.

Chloralamide is a derivative of anhydrous chloral. It is given in doses of five to thirty grains, and is prescribed for the same conditions as chloral. It is not so depressing on the heart, nor as irritating to the stomach.

SULPHONAL.

Synonym—Diethylsulphonedimethylmethane, Sulphonmethane, Sulfonal.

Administration—The dose is from fifteen to thirty-five grains. Its large dose and insolubility render its administration difficult. It is suspended in mucilage or syrup, and must be administered several hours before its influence is desired.

It is best given in hot solution upon a comparatively empty stomach, as it is only appropriated by decomposition, and not by the rapid absorption of a free solution. Its influence is so slow that often, when given to produce sleep, this influence is not exercised until the night has passed, causing the patient to pass a drowsy, uncomfortable day.

Physiological Action—It is not considered a poisonous agent, and yet much discomfort arises from its use with some patients. Symptoms of a

toxic character will appear; difficulty of speech, temporary muscular incoordination, fullness of the head and vertigo; in prolonged cases, physical weakness, mental incapacity, forgetfulness, delusions and mental aberration. It colors the urine a deep red, as it is eliminated by the kidneys, and sometimes produces a characteristic rash on the skin. Its tastelessness is a redeeming quality, as it can be given without the knowledge of the patient. It does not irritate the stomach or bowels, neither does it suppress secretions. It does not affect the digestion or destroy the appetite.

Specific Symptomatology—It is a remedy for sleeplessness when the brain is overcharged and the mind is excited or worried. It is useful in those greatly worried over physical conditions, such as those suffering from gonorrhoea or spermatorrhoea.

Therapy—It is decidedly a **hypnotic**, but is not as reliable or as active as chloral, and yet it sometimes succeeds where that agent has failed. It is used in the **sleeplessness of alcoholics** and in **delirium tremens**. It has won its reputation largely in this latter condition.

In **mania** with extreme **nervous excitement** and general nerve irritation, and in pronounced insanity, it has been widely used with excellent results.

It is useful in **prolonged fevers** because of its non-irritating and non-depressing character.

It quiets the restlessness of teething children, soothes the gums like the bromides, wards off spasms and induces sleep. It is safe, and the little ones are probably more susceptible to its influence because of increased facility of appropriation. Its tastelessness is in its favor here also.

VERONAL.

Synonym—Diethylmalonylurea, Barbital.

The agent is given in capsules of from five to ten grains. It is best given an hour before its influence is needed, as its action is slow. Long continued use demands an increased dose as it seems to lose its effect.

The agent is comparable with sulphonal. It is devoid of some of the objectionable influences of the other drug, and is more prompt in its action. Its free solubility contributes to this. **Insomnia** induced by **nervous excitability** of any character is relieved by it. Overdoses induce protracted sleep in proportion to the amount taken. Two or two and one-half drams will produce death, though a fatal ending is slow in occurring. Sleep has been prolonged ten days with recovery.

If combined with **sodium, veronal** becomes a safer remedy with a somewhat wider influence. It is usually preferred in this form.

Trional and **Tetronal** so closely resemble sulphonal and veronal in their influence that we do not deem it necessary to introduce them as separate agents. They have gained no ground in the past seventeen years, while the two latter have increased in favor.

GROUP I.
Agents Acting on the Nervous System.

DIVISION 1.
Sedatives and Depressants.

CHAPTER V.
MINOR NERVE SEDATIVES

ASAFOETIDA
SCUTELLARIA
HUMULUS
SOLANUM
VALERIAN
HAPLOPAPPUS
OENANTHE
HERACLEUM
GUARANA
PEONY

ASAFOETIDA. *Ferula foetida.*

Part Employed—The dried milky juice obtained by incising the green matured root of the *Ferula foetida*.

CONSTITUENTS—
Resin, Gum, Volatile Oil, Sulphur.

PREPARATIONS—
Emulsion Asafetidae, Emulsion of Asafoetida. Dose, two ounces.
Pilulae Asafoetidae. Pills of Asafoetida. Dose, one to four pills.
Tinctura Asafoetidae, Tincture of Asafoetida. Dose, one to two drams.

Therapy—This agent is a mildly stimulating nerve sedative. Its soothing influence upon the brain is of no mean order. This is especially observed in **hysterical conditions**, in hystero-epilepsy and in hypochondriasis. It arrests hysterical paroxysms and produces quiet and rest with a pleasant sense of exhilaration. It relieves the flatulence

of hysteria also. In nervousness, especially that of weakened and exhausted conditions, and of children, it is soothing, and often wards off spasms.

In spasmodic conditions of the stomach and bowels with **tympanites**, in the absence of active inflammation it is a remedy long used. In accumulations of gas in the stomach or bowels it has been used to, the best advantage.

In **spasmodic bronchial affections**, in **whooping cough**, and in **asthma** it was a favorite with the older doctors. In the bronchial catarrhs of the aged and infants it has been given with advantage, especially if nervous depression was present. A three-grain pill was the celebrated “Keeley cure” for la grippe, and those who have used the remedy in epidemic influenza are usually enthusiastic in its praise.

SCUTELLARIA. *Scutellaria lateriflora.*

Synonyms—Scullcap, madweed, hoodwort.

CONSTITUENTS—

A bitter principle (crystalline glucoside), volatile oil, fat, tannin, sugar.

PREPARATIONS—

Extractum Scutellariae Fluidum, Fluid Extract of Scutellaria.
Dose, from five to thirty minims.

Infusum Scutellariae, Infusion of Scutellaria.

Specific Scutellaria. Dose, from one to ten minims.

The remedy is usually prescribed in the form of the specific medicine. The normal tincture is very satisfactory, and in some cases scutellerin is the best form of the remedy to give. The glucoside in granules, which contain one-twelfth of a grain, will produce good results.

Specific Symptomatology—French advises this remedy for two distinct lines of specific phenomena. The first is where there is irritability of the nervous system, with restlessness and nervous excitability; inability to sleep without pain; general irritability with insomnia from local physical causes. The second is where there is nervous disorder,

characterized by irregular muscular action, twitching, tremors and restlessness, with or without incoordination. These symptoms are found in **chorea**, **paralysis agitans**, **epilepsy** and **delirium tremens**. Its soothing influence continues for a protracted period, after the agent is discontinued. It is not a remedy of great power, but when indicated is of much service.

Its specific nerve sedative properties were those observed by the older writers who obtained this influence from a strong infusion which without doubt will yield results not obtained from small doses of the finer pharmaceutical preparations.

Therapy—Its soothing influence upon the nervous system conduces to quiet and **restful sleep**. In large doses in **delirium tremens**, it is a sufficient remedy. Its influence will be enhanced by combining, it with *capsicum*, the tincture of *red cinchona*, or some other non-alcoholic stimulant. Combined with *cimicifuga*, the value of both these agents is increased in their adaptability to **chorea**.

In restlessness, or in **nervous excitability** producing insomnia, and in prolonged fevers, it promotes sleep and at the same time stimulates the skin and kidneys to increased activity. Its soothing influence is retained after the agent is discontinued. The agent was at one time supposed to exercise an influence over the spasms of hydrophobia, but it is doubtless too feeble for such a purpose.

HUMULUS.

Humulus lupulus.

Synonym—Hops.

Part Employed—The strobiles.

CONSTITUENTS—

Volatile Oil, Resin, Trimethylamine, Asparagin, Tannin.

Lupulinum, **Lupulin** is a granular powder separated from the strobiles of hops and is bright brownish-yellow in color, with the odor and taste of the drug, in which its principal strength resides. Dose, from five to ten grains.

PREPARATIONS—

Tinctura Humuli, Tincture of Hops. Dose, from one to two drachms.

Extractum Lupulini Fluidum, Fluid Extract of Lupulin. Dose, from ten to sixty minims.

Specific Lupulin. Dose, from one to ten

Action—Tonic, nervine, hypnotic.

Physiological Action—*Hops* stimulate the stomach, improve its tone, encourage the appetite and assist the digestion. They add force and volume to the heart, and when that organ is irregular from nervous irritation or from reflex gastric irritation, act as a soothing agent to overcome those conditions.

Specific Symptomatology—The influence of this agent is marked in those cases of **nerve irritation** and **wakefulness** where anxiety and worry are the cause. In this it is somewhat similar to *hyoscyamus*. It is more particularly serviceable where **sexual irritation**, spermatorrhea and dread of impotence are present, and where there is abnormal or erratic, and at times violent sexual excitement.

Therapy—In all forms of nervous excitement it is soothing in its influence, and a hypnotic of much value. This is especially the case in **hysteria** and in the sexual irritation of females.

In mild conditions of **insomnia**, with persistent worry, in patients recovering from neurasthenia, and in hysterical patients, or in cases where there is no organic difficulty or pain to cause the wakefulness, small and frequent or single full doses of this agent will have a marked tranquilizing effect. A pillow of hops will have a soothing influence in some of these cases, and may be all that is needed to induce sleep.

Fomentation made by dipping a muslin bag filled with hops into hot water, wrung out and applied over painful **acute local inflammations** and painful swellings, is a favorite domestic measure. Applied to **facial neuralgia**, or over an ulcerating tooth, or in the earache of children, it allays pain and promotes sleep.

In the treatment of **delirium tremens** a capsule containing a grain of *capsicum* and eight grains of *lupulin* given during the intense

excitement preceding the attack, will sometimes ward it off. Half of a teaspoonful of each of the tinctures in combination may be given. A strong infusion of *hops* and *cayenne pepper* is excellent in this case to be drunk hot as demanded.

The **anaphrodisiac** influence of this agent suggests its use in **priapism** and in **chordee**, and in spermatorrhea where these conditions exist, and where there is sudden active determination of blood to the parts. It is not the remedy when the parts are cold, weak, inactive and non-excitabile, and where the erections are feeble or impossible. Five to ten grains of *lupulin* at bedtime, with ten or fifteen drops of the fluid extract of *ergot* in those cases where the tendency to fullness of the circulation is marked, will preserve rest and quiet for the night. A full dose of camphor monobromate with *lupulin* is excellent.

A suppository containing *lupulin* and camphor monobromate, five or six grains of each, or the one-fourth of a grain of ergotin, may be inserted into the rectum at bedtime with fine results.

The sedative effect of *lupulin* is exercised to a good advantage in the treatment of nocturnal emissions by its influence in soothing the nerve centers, promoting rest and sleep, especially in hysterical patients, and in those who suffer from irritation in the genito-urinary tract and in the control of sexual excitement and desire. It prevents cerebral hyperemia and corrects disorders of the gastro-intestinal tract. It modifies the secretion of the gastric fluids inhibiting the output of acids.

VALERIAN.

Valeriana officinalis.

Part Employed—The rhizome and roots.

CONSTITUENTS—

Volatile oil, valerianic, malic, acetic and formic acids; tannin, sugar, starch, mucilage, extractive, resin.

PREPARATIONS—

Extractum valerianae, fluidum, fluid extract of valerian. Dose, ten minims to two drams.

Specific valerian. Dose, five to sixty minims.

Tinctura valerianae ammoniata, ammoniated tincture of valerian.

Dose, one to two drams.

Oleum valerianae, oil of valerian. Dose, one to five minims.

Physiological Action—*Valerian* in large doses stimulates the brain, causing headache, giddiness, perverted vision, restlessness, agitation, nausea. Large doses of the oil cause increase of urine with slow pulse and drowsiness, ending in deep sleep. It lessens sensibility, motility and reflex excitability, and, if the dose be large enough, causes central paralysis. The first effect is stimulation, followed by depression of the nerve centers.

Specific Symptomatology—Valerian is not a narcotic. Its influence upon the nervous system is best obtained when the circulation of those centers is inactive and feeble, especially when there is a paleness of the face and the skin is cool. It is directly indicated in hysterical conditions of whatever character with feebleness; with nervous excitement, and morbid vigilance, in hysterical epilepsy, and in nervous headaches with some pallor. It is excellent in the hysteria and nervous disturbances incident to the menopause. Its general soothing effect in all these cases is desirable. It controls distress and imaginary pain and produces quiet, permitting sleep and rest.

Therapy—This agent has long been known as a nervine. It is gentle and soothing in its influence upon the nervous system, especially upon the spinal centers. It is applicable in the **nervousness of depression** because of its gentle stimulating influence, and in these cases its influence is heightened by combining it with stimulants.

This result is effectually obtained from the valerianate of ammonium, which is the most active of the *valerian* compounds. In conditions where the nervousness is induced by hyperactivity—actual increased nerve force—or where there is organic disease, it is not the remedy.

The agent exercises a good influence in combination with *cimicifuga* in the treatment of **chorea**. Its influence upon **disordered motility**, although not marked, is similar to that of *cannabis indica*, *hyoscyamus* and *scutellaria*.

In **pruritus**, with nervous excitement from feebleness, it is a desirable agent. It has been used in stomach disorders and in diabetes, but its

influence is not marked in these cases.

HAPLOPAPPUS. *Haplopappus laricifolius*

Synonym—Herba del Pasma, *Ericameria laricifolia*.

LOCALITY—Texas, New Mexico, Arizona, California and Northern Mexico.

This may be closely related to *damiana*. We insert it here, that it may be kept before the minds of our readers until its properties are determined. Webster and others mention it as a remedy in **tetanus**. Its infusion is used by the native Mexicans and Spaniards for this condition. In **convulsions—epileptic, hysterical and puerperal**—it has been used. Its anti-spasmodic influence when used hypodermically must be studied.

More recent writers confirm Prof. Webster's statements urging its use in **tetanus**. In some parts of California, and New Mexico, there is but little fear of tetanus, as they administer this remedy freely, almost ad libitum. It is not poisonous, but few if any unpleasant results having been observed from its action. It is given in the convulsions of childhood, whatever the cause may be. A number of physicians confirm its influence in this class of disorders.

Several physicians have used the remedy in **chorea**, and claim that it is superior to other agents in certain persistent, otherwise intractable cases. It has controlled the spasms of **meningitis**, and will probably be an important addition to the specific medication of that disease. In puerperal convulsions, reports are not sufficient to direct us in its application. It has been observed that when **palpitation** of the **heart**, or serious disturbance of the action of this organ from a high degree of nervous excitement is present, this agent is curative. It must have further investigation.

OENANTHE. *Oenanthe crocata*

Synonym—Water Dropwort.

CONSTITUENTS—

An acrid emetic principle (resin), essential oil.

PREPARATIONS—

Specific Oenanthe. Dose, one-twentieth to one-half minim.

Administration—The profound influence of this agent upon the nerve centers is quickly observed. It must be given in minute doses. Five drops of the specific medicine in three, four or even six ounces of water will be found sufficient. Fluid extracts or ordinary tinctures are not to be prescribed, because of uncertain strength.

Physiological Action—*Oenanthe crocata* is extremely poisonous, and from its resemblance to common garden parsley has frequently caused death in men and animals. Toxic doses cause burning heat in the throat and stomach, with disturbance of intellect, cardialgia, nausea, vertigo, violent convulsions, furious delirium, or profound sleep; loss of sight, hearing and speech; rolling of the eye-balls upward, feeble pulse, abolition of sensation and of motive power, with increasing intellectual dullness. There are universal chills, rose-colored spots on face, breast and arms; lividity and swelling of the face, with trismus and bloody froth from mouth and nostrils, stertorous breathing, coma, death.

Autopsies performed on patients dead from the accidental use of this agent have shown an engorgement of the blood vessels of the brain and cord. There was effusion of blood and bloody serum in the occipital foramen. The sinuses of the dura mater and the veins of the pia mater also were distended with blood, as were also the sinuses of the vertebrae. There were apoplectic foci in the cerebral mass. There was serous effusion in the cellular tissue beneath the arachnoid, in the ventricles and at the base of the brain.

Therapy—The agent acquired a reputation in the treatment of **epilepsy**. It has cured a few violent cases and very many cases of **petit mal**. Fisk reported five cases cured, and other trustworthy investigators have had similar results. It is indicated in those cases which, instead of fullness of the capillary vessels of the brain and spinal cord, there is anemia of these organs more or less marked. This distinction was made by Henning, and is an important one.

It has proved of value in cases where epilepsy has resulted from injury, in cases where there is an impairment of the brain structure and imperfect cerebral circulation with impairment of the nutrition of the

brain.

It has not increased in reputation, nor has our knowledge of its action increased greatly during the past fifteen years. It deserves a closer investigation.

SOLANUM.

Solanum carolinensis.

Synonym—Horse nettle.

PREPARATIONS—

Tincture Solanum. Dose, from twenty to sixty minims.

Specific Solanum, made from the root. Dose from five to twenty minims.

CONSTITUENTS—

Solnine, Solanine, Solanidine, Solanic acid.

Therapy—The remedy has been used with some success in the treatment of **epilepsy**. It was used in an Eastern hospital for epileptics experimentally, with a reduction in the number of paroxysms of twenty-five per cent. It may be given in all forms of epilepsy in sufficient frequent doses to produce a sensation of dullness or drowsiness. It has cured some stubborn cases and has relieved many. Its specific field is yet to be determined.

It has been used in the treatment of **puerperal convulsions** with satisfactory results, in a few cases. In hysterical paroxysms it has been useful.

HERACLEUM.

Heracleum lanatum.

Synonyms—Masterwort, Cow Parsnip.

CONSTITUENTS—

The root contains a volatile oil, and a crystallizable substance containing heraclin.

PREPARATIONS—

A **tincture**, and a **fluid extract**. The dose of the tincture is from five to sixty minims. Fluid extract from two to twenty minims.

Specific Symptomatology—Blood dyscrasia, with general local manifestations. The tongue is heavily coated with a pasty coat or furred. The mucous membranes are of a bluish or leaden color. The membranes of the throat are discolored, with very sluggish circulation, appearing as if they would slough. The breath has a bad odor. There are erosions of the mucous membrane of a whitish character. The pulse is full and sluggish, and there may be a low grade of fever. In some cases the temperature is high, with a slow pulse, the patient is drowsy, and there is general capillary stasis.

The remedy has not received general attention. Felter and Lloyd give very limited action to it, but Dr. Vassar, of Ohio, has made some extended observations, which are worthy of note, and should be confirmed or disproved, by future thorough investigation.

Physiological Action—The doctor says the plant must not be confounded with the wild parsnip, and similar plants. A good preparation of the green root must be obtained to produce good results. The remedy is an irritant to the skin, sometimes causing inflammation. Its poisonous properties are similar to those of the wild parsnip. It acts upon the nervous system as an antispasmodic. It produces, when taken in the mouth, a sensation of tingling, prickling, a benumbing sensation upon the throat, fauces and tongue, similar to that of *echinacea*, *aconite* and *xanthoxylum*. In fact, the doctor compares it in its entire influence, with *echinacea*. It stimulates the pulse, and strengthens the capillary circulation. With the tingling and numbness of the throat, is difficult deglutition. Its antispasmodic influence seems to be exercised independent of the alterative influence the agent would exercise over depraved blood, as a cause of spasms.

Therapy—It is given in **general spasm** in **puerperal convulsions**, and in epilepsy. While Doctor Vassar has not used it in **meningitis**, his knowledge of its influence suggests that it would be a valuable remedy in that disease. In the treatment of convulsions, he would give as high as thirty drops of the strong tincture. In the treatment of puerperal convulsions he gives it as high as dram doses, until the patient is under control. He considers it as useful as *gelsemium* or *veratrum*. He

has used it in several cases. He gave it in one extremely severe case of **puerperal fever**, where the temperature was 106 degrees, and obtained highly satisfactory results. In this case, he gave it in conjunction with small doses of *jaborandi*. He has treated several cases of **epilepsy** with it, two of which were completely cured. The others were benefited. He has given it in **tonsillitis**, **diphtheria**, and ulcerated sore mouth. As a vegetable antiseptic, it has many of the properties of *echinacea*, and some that, *echinacea* has not. He has given it in cases of blood poisoning, with good results, but has not had an opportunity to observe fully, concerning its action for the same purposes, that *echinacea* is given as a corrective of bad blood.

He believes that it exercises an influence upon the capillary circulation of the spinal cord, and upon the capillary circulation in general, similar to that of *ergot*. He has obtained results from its use in several cases, similar to those previously obtained from *ergot*.

He has given it in glandular swellings, where there is threatened destruction of tissue, where the parts seem lifeless, or where there were foul and indolent ulcers.

He has given it in **nervous dyspepsia**, with all the phenomena of that complicated disorder. It is given in small doses, in these cases. It overcomes a tendency to flatulence, preventing flatulent decomposition of the food, and favoring digestion. It is especially demanded when there are offensive gases, discharged after meals. When there is an excess of acidity in the stomach or bowels, from any cause this acidity should be previously neutralized.

The sore mouth or sore throat that calls for this remedy is that accompanied with a cadaverous fetor to the breath, where there is a bad taste in the mouth, the tongue very dirty and pasty in its coating. He intends to investigate it in diphtheria farther, not having had an opportunity to make an extended observation in this disease.

In the treatment of the disorders of women, he finds it applicable in amenorrhea, and especially in dysmenorrhea. In these cases the pains being quite severe, before or immediately the flow starts, the agent seems to act like *gelsemium*. If other specific indications are present the indicated remedy is prescribed in conjunction with this. The agent will be found useful in certain forms of kidney trouble, and in the uric acid

diathesis. It must have further careful investigation as it promises to be an important remedy.

GUARANA.

Paullinia sorbilis.

Synonym—Brazilian Cocoa.

PREPARATIONS—

Extractum Guaranae Fluidum. Fluid Extract Guarana. Dose, five to thirty minims.

Extractum Guaranae- Extract of Guarana. Dose, three to ten grains.

Specific Guarana, from one to fifteen minims.

CONSTITUENTS—

Caffeine, Tannin, Volatile Oil, Saponin, Resin.

Physiological Action—In its influence it is a tonic and mild nerve stimulant and sedative. Gaurelle, who first called attention to it, mentioned it as a most useful tonic in protracted convalescence. He had great confidence in it in persistent diarrheas, especially those of phthisis. Others have used it successfully in chronic diarrheas.

Therapy-The fluid extract of this agent, given in doses of from ten to thirty minims, has been used specifically in the treatment of **headaches**, other than those due to actual disease of the stomach, as from catarrh or ulceration or cancer. In many forms of headache, and especially the form due to functional gastric derangement, known as “sick headache” it is certainly a serviceable agent.

PEONY.

Peonia officinalis

Synonym—Piney.

PREPARATIONS—

The **tincture.** Dose, from one to thirty minims.

Therapy—The agent is an antispasmodic. Through a mild but

persistent tonic influence, it is **soothing** to the **nervous system** of debilitated patient and of the aged. It is curative wherever there is irregular muscular action. It is useful in **chorea**, either alone or combined with other positively indicated remedies. It has been given with good results in **convulsions** of **childhood**, and other convulsive phenomena, and its persistent use in **epilepsy** has resulted satisfactorily in some cases. It is not a powerful remedy, but it is one that has a steady and persistent influence, and will therefore be found of use as auxiliary to the action of positive but temporary remedies. It has been given in **whooping cough**, and will probably be found valuable in the treatment of other **spasmodic coughs**.

The juice has been expressed from the recent root, and has been administered in doses of from one to two drams. The powdered root in dram doses has been given. Thirty grains of the powdered seeds have been administered to overcome night **terrors** and **nightmare** in aged people and people afflicted with these forms of chronic disease, accompanied with dropsy. It relieves all forms of **nervous irritation**, and is beneficial in **reflex irritability**.

GROUP I.
Agents Acting on the Nervous System.
DIVISION 1.
Sedatives and Depressants.

CHAPTER VII
Agents of the Sedative Class That Are Especially
Useful in Diseases of Women
Emmenagogues—Ecboolics—Oxytocics.

ERGOT
CIMICIFUGA
ARNICA
MISTLETOE
PULSATILLA
HYPERICUM
USTILAGO
ANTHEMIS
MATRICARIA

ERGOT. *Secale cornutum (Claviceps purpurea)*

Synonym—Spurred Rye.

CONSTITUENTS—

Ergotine, Ecboolene, Ergotic acid, fixed oil.

PREPARATIONS—

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

Specific Ergot. Dose, five to sixty minims.

Ergot is prepared by special processes of purification for hypodermic injection. So used it is immediate in its action and can be so administered when impossible to give it by the stomach. Ergotine in solution in water and glycerine, is excellent for hypodermic administration.

Physiological Action—*Ergot* causes both acute and chronic poisoning when taken in toxic doses. Acute ergotism is characterized by vomiting, purging, headache, dizziness, drowsiness, slowing of the pulse, dilatation of the pupils, dyspnea, pain in the chest and loins, confusion of the senses, formication, coldness, anesthesia, convulsions, swelling of the face. Chronic ergotism is characterized by neuralgic pains, formication and numbness of the extremities, opisthotonos, violent delirium succeeded by exhaustion, death occurring in coma or in convulsions; or the drug may affect nutrition; muscular weakness is followed by gangrene of the limbs or superficial parts, which become blackened, shriveled and hard—a dry gangrene, generally ending fatally.

Ergot is classed as a motor excitant by most writers, and yet the evidences, as above described, of its depressing influence upon the nervous system and upon the circulation are most conspicuous. In its influence upon the circulation of the brain and spinal cord, it may be given in sufficient doses to produce anemia, and that it does greatly reduce the excitability of the nervous system, under certain circumstances, none will deny. It acts in perfect harmony with the bromides when there is acute cerebral engorgement with great nervous excitability.

There is no doubt that it produces contraction of the arterioles, although there are many evidences to prove that it may permit the venous capillaries to dilate freely.

In its influence upon unstriated muscular fiber the action of *ergot* is pronounced. It acts upon the muscular structure of the womb, producing extreme tonic or tetanic spasm of the fibrillae, causing a marked reduction in the size of the organ if enlarged, and rapid emptying of its blood vessels, and consequent anemia. Many prominent writers believe the anemia induced, causes the profound muscular contraction. It is more plainly apparent that a peculiar irritating influence of the agent upon such muscular structure induces its contraction, and that such contraction, assisted by the influence of the agent upon the coats of the arterioles, causes them to become emptied to a marked extent, and thus the anemia.

Ergot acts upon the heart muscle in much the same manner as upon the muscular structure of the womb, although much less violently. It

will surely reduce the size of a hypertrophied or dilated heart.

Because of the profound irritation of muscular fibrillae and consequent almost immediate contraction induced by *Ergot*, it is a most active agent in inducing expulsive pains in labor, in overcoming uterine inertia and in controlling uterine hemorrhage.

Specific Symptomatology—Extreme fullness of the circulation of the brain, flushed face, headache, bright, sharp eyes, great restlessness.

The indications for its safe use in **labor** are: first, uterine inertia; muscular relaxation with a more or less general weakness; second, the first stage of labor must be completed, and the *ostium vaginae must be fully dilated*.

There must be no obstacle to the free expulsion of the child.

The contractions induced by this agent are not smooth, spontaneous, natural, rhythmical contractions, but are irregular and extreme, and if an overdose be given it may induce a tetanic contraction and a single, most violent, continuous expulsive effort which does not cease until the entire contents of the womb are expelled.

With such an influence, if there be a rigid, undilated os or perineum, or malposition of the child, or extreme dryness of the parts, serious results, as rupture of the womb or extreme laceration of the perineum, are almost unavoidable.

This profound and continuous pressure on the child and placenta arrests haematoses, greatly paralyzes the heart's action, and thus impairs the circulation, inducing cyanosis and often death of the infant before its expulsion is complete.

Again, such pronounced action upon the womb structure may result in subsequent muscular paralysis, with great impairment of its contractile power, and if there be no post-partum hemorrhage there may be subinvolution more or less persistent. It will be seen, therefore, that this remedy in parturition is a dangerous one, and if used at all it should be used only when every contraindication is absent, and every indication present.

Therapy—In **labor**, when there is threatened post-partum hemorrhage, or when the history of previous labors shows a tendency to such an accident, a full dose of *ergot* may be given just at the close of the second stage, or after the head has passed the perineum. No harm can come from such a procedure, and it will serve as a positive safeguard. If there is then free hemorrhage and lack of full uterine contraction, the dose may be repeated in perhaps half an hour, but the attendant must be assured that the womb is entirely empty. If the contractions are not firm and continuous, and hemorrhage at all violent should occur, other measures, such as external irritation and compression of the uterine fundus, or the introduction of hot water into the uterine cavity, must be resorted to in addition. *Ergot* is in general use in **post-partum hemorrhage**. It must be given in doses of from half a dram to a dram of the fluid extract. If this dose be added to an ounce or two of hot water and drunk, its influence is more immediate and pronounced.

In uterine **hemorrhage** at the **menstrual epoch**, menorrhagia, or in metrorrhagia, it is a most valuable agent.

In patients of relaxed muscular fiber its action is very prompt. The dose can be so measured and timed as to reduce the flow to normal time and quantity, while by the use of other agents, a healthy condition is being secured. Its influence, upon the womb structure is at the same time conducive to a sure acting in harmony with other uterine tonics.

In the treatment of uterine **subinvolution** or of **chronicmetritis**, *ergot* is a good remedy. The use of the agent conjointly with the bromide of potassium is especially advised in this condition, and with the further administration of properly selected uterine tonics the cure can be speedily completed.

Polypi are expelled from the uterine cavity by *ergot*, and the agent having a specific action upon the substance of the womb, is opposed to **hypertrophy** and to the development of abnormal growths within that structure. **Uterine fibroids** are expelled by *ergot* if possible, and if impossible, the persistent internal use of the agent is advised as a means of limiting their growth. Interstitial or submucous fibroids only, are influenced by it. Sub-peritoneal fibroids are apt to be a little outside of its influence, because outside of the range of the contraction of the muscular fibers.

Mammary tumors, from uterine irritation, are slowly reduced by the action of *ergot*.

The hemorrhage and excessive discharges, purulent or otherwise, occasioned by the growth of **foreign bodies** about the **womb**, will be beneficially influenced by this agent. The growth of a uterine cancer is sometimes retarded a little, and the hemorrhage from the cancer is more or less controlled by *ergot*.

Dr. Standlee said that *ergot* would support the patient's heart exceedingly well when the remedy was indicated, especially when there was muscular fatigue from overwork or from dyscrasia, as in the malarial infections as found in the south, or in malignant malarial hematuria, especially if used hypodermically.

Ergotin so used will control hemorrhage from the lungs. It was administered for this purpose to a drunkard suffering from delirium tremens where it controlled both conditions satisfactorily.

As stated in its physiological action, *ergot* is a most useful remedy where there is a constant tendency to fullness of the **circulation** of the **brain—hyperemia** with flushed condition of the face, with vertigo, nausea, and violent headache. In threatened **apoplexy** in young, full-blooded, active men; with full cerebral circulation, it overcomes the immediate symptoms of an attack, and if properly administered will cure the tendency.

Where apoplexy from acute cerebral hemorrhage has occurred it is a very useful agent in unloading the distention of the capillaries and assisting in the contraction and removal of the clot.

In children, where there has been a **fall** upon the **head**, or a violent blow, with symptoms of **concussion** of the **brain**, *ergot* is the most prompt remedy known. It should be given in from five to ten drop doses, and repeated in half an hour if necessary. Spasm should be averted by *passiflora*, chloral, the bromides, or, a full dose of *gelsemium* may be given. But the circulation of the brain must be controlled at once by *ergot* and its influence sustained by smaller doses until inflammation is no longer pending.

In certain forms of **inflammation** of the **brain** and its meninges, where

the capillary circulation is very full, *ergot* is most pronounced and certain in its action.

In **cerebro-spinal** meningitis of an acute endemic or epidemic form, it may be given in the early stages of the attack, but should be withheld in the latter stages. Other directly indicated agents should not, however, be neglected for this. It is especially applicable to children in the early stages of acute cerebral or cerebro-spinal inflammation.

Ergot in doses of five drops three or four times daily for a few days will benefit many severe cases of **typhoid fever**, especially if there be an engorged condition of the cerebral circulation, with tendency to dullness, stupor and mild delirium, with high temperature. It directly influences the intestinal canal, overcoming the relaxed and paralytic condition of its muscular structure, correcting diarrhea, controlling hemorrhage and improving the circulation. An occasional dose of fifteen or twenty minims will sometimes do much good.

In the treatment of both passive and active **hemorrhage**, *ergot* is a most excellent remedy. It contracts the walls of the arterioles, shutting off a full supply of blood and immediately restraining the flow. from open vessels. It is thus at once useful in hemoptysis, in hemorrhage from the mouth, gums, throat or pharynx, and from the stomach and intestinal canal. A local astringent in gastric hemorrhage from ulcer is often better, and also in intestinal hemorrhage in typhoid. It is good practice to give a local styptic alternately with *ergot*, where there is a persistent tendency to hemorrhage in these cases.

In **hemophilia** *ergot* is recommended. In this condition in infants it may be used for a short time locally and internally.

Hemorrhages about the eye-ball are controlled from its local application, and acute conjunctivitis and phlyctenular ophthalmia will be benefited, if it be used locally and internally in small quantities.

Occasional large doses of *ergot* in the treatment of pneumonia are spoken of as highly beneficial by excellent authorities. The remedy exercises its influence upon the capillaries.

In **hemoptysis** *ergot* is prompt and efficient. It need not be given in large doses. Three to five drops, four times daily, will usually restrain

the tendency to hemorrhage, and in a free discharge of blood, a ten-drop dose is usually sufficient, or it may be repeated.

In hematuria ergot is a prompt remedy if from traumatism, or if from active congestion, but gallic acid is usually better in passive conditions, and in conditions due to structural change.

In paralysis of the walls of the bladder after retention of urine, causing over-distention, *ergot* serves a good purpose. If hemorrhage be present it is quickly controlled and the muscular atonicity of the walls is greatly benefited.

Ergot is given in **urinary incontinence** when the cystic walls are greatly relaxed, or when there is a mild form of local paralysis.

Ergotin in full doses has quite a prompt influence upon **diabetes insipidus**. It is also useful in **diabetes mellitus**, but is not depended upon alone. In children afflicted with the latter disease it may be given in positive doses for a time, but should not be given continuously.

In that form of **spermatorrhea** where there is a tendency to fullness of the circulation of the parts, with erratic and spasmodic erections, and undue sexual excitement, the emissions quickly occurring after erection, there is no better remedy known than *ergot*. It should be given in about twenty drop doses at bedtime, and its influence is increased and a soothing influence upon the nervous system induced by giving it with ten grains of the sodium bromide.

In the treatment of **aneurism**, and of enlarged veins, and of varicocele, ergot is much used. Its influence is more positive though upon the arterial than upon the venous coats. It is used with good results in hemorrhoids. Bartholow and others injected it into the dorsum of the penis to contract the veins there and overcome impotency.

CIMICIFUGA.

Cimicifuga racemosa.

Synonyms—Black Cohosh, Macrotys Racemosa.

CONSTITUENTS—

Macroton, a resinoid volatile oil, tannic acid, gallic acid, gum, starch, fat, sugar.

PREPARATIONS—

Extractum Cimicifugae Fluidum, Fluid Extract of Cimicifuga. Dose, five to thirty minims.

Tinctura Cimicifugae, Tincture of Cimicifuga. Dose, one-half to one dram.

Specific Med. Macrotys. Dose, one-tenth to ten minims.

Macrotin or Cimicifugin, which possesses all the medicinal properties of the root, is a resinous powder of a dark-brown or yellowish color, a bitter, acrid taste, and slight odor. Dose, one-half to three grains.

Physiological Action—*Cimicifuga* in large doses produces general relaxation, dimness of vision, dizziness, tremors, slowing of the pulse, fall of arterial pressure, vomiting or gastric irritation; it stimulates expectoration and perspiration, causes intense headache and prostration. These phenomena are caused by the action of the drug on the vasomotor centers and the cardiac ganglia. The headache is chiefly frontal; in some persons the drug causes pain in the joints and limbs similar to rheumatism.

The agent is certainly an efficient nerve sedative, although its most pronounced action is on the unstriped muscles. It acts in very many cases where these muscles are involved, with general nervous irritation, in an immediate and positive manner. In such cases if the nerve irritation is dominant, its efficiency is greatly increased by combining it with *gelsemium*.

An overdose is promptly signalled by the appearance of the characteristic headache, which assumes a bursting, tearing character, with injected conjunctivae and flushed face. This will abate at once upon discontinuance of the agent.

Specific Symptomatology—Muscular aching, local and general, aching pains as from overworked, overstrained muscles, great muscular aching with chilliness and rapidly increasing temperature.

It is the agent for **hysteria** with flushed face and heat in the head, with restless and nervous excitement and general muscular aching.

Therapy—In the premonitory stage of **acute fevers**, or of acute

inflammatory troubles of whatever character, a common symptom is a general tired feeling with aching of the muscles. In these cases there is usually a chill or chilliness, with more or less fever with the aching. One drop of the tincture of *cimicifuga* every hour will relieve this aching in from six to twelve hours. If given with *aconite* for the fever and *belladonna* for the rigors, the time may be reduced to three or four hours. When indicated, its influence upon the nervous system will probably abridge many of the other symptoms.

Through its influence upon the vasomotor centers and upon the nerve ganglia, it has a beneficial influence upon the heart. In **rheumatic carditis** or **pericarditis** it is a sovereign remedy acting directly in the line of its physiological influence. In neuralgia of the heart—**angina pectoris** and functional **irregularity** of the heart from exalted nerve influence, either alone or combined with *gelsemium*, it is prompt and reliable, and should be by no means neglected.

Prof. King advised this agent in **coughs**, and its value through its influence upon the nerve centers has been confirmed by many practitioners. It soothes the cough of excessive nerve irritation, and the reflex cough; the irritable cough of acute bronchitis is relieved by it, as it increases bronchial secretions to a notable extent.

A homeopathic writer says that in **pleurisy**, there are often strong indications for *cimicifuga* where it works in harmony with *aconite* and *bryonia*. This is our own experience.

It is given by many as a **stomachic tonic**, and it improves digestion by relieving excess of nerve influence over the functional operations of the digestive apparatus.

As a remedy for **chorea** it has become widely popular. Given in fiftendrop doses of the tincture four or five times daily, it is superior to any other known remedy. Its effects are permanent if the anemia and other concomitant conditions are correctly controlled by proper medication at the same time. Its sedative, tonic and antispasmodic influences are here fully exercised.

It may be combined with *scutellaria lateriflora*, with *valerian* or *gelsemium*, as the indications demand, with superb results. The writer has aired intractable cases by alternating it with minute doses of

exalgine.

The characteristic aching pains above described are very constant in **acuterheumatism** and **rheumaticfevers**. *Cimicifuga* is certainly a royal remedy in these cases, and has become universally popular. If the condition be absolutely confined to the joint and does not involve muscular structure, it is not of as much value. The direct indications must be present.

The agent, however, has a specific influence in overcoming **lithemia** and in preventing and curing conditions resulting from an excess of uric acid conditions existing in the **uric acid diathesis**. It is therefore of value with auxiliary treatment in acute or subacute **rheumatic arthritis** with lithemia.

It will be found indicated in **rheumatic neuralgia**, in **sciatica**, in muscular rheumatism of the chest walls, in achings of the deep muscles of the back, in myalgia, in severe colds, in neuralgia from cold, in rheumatic headache, and in neuralgia of the ovaries; also with women in the intense muscular aching preceding the menses.

Cimicifuga operates directly upon the reproductive functions. In the female it is valuable as above indicated, in **dysmenorrhea** of a congestive character always, and in **amenorrhea**. In these cases **aconite** will aid its action greatly, if the condition be induced by sudden cold; and *pulsatilla* will do likewise if the conditions be caused by nervous shock or functional irregularity extending over a longer period. *Helonias* may be given with it, if there be weight and dragging in the lower abdominal region. If leucorrhoea be present with the above indications, it is especially valuable. It is valuable to promote uterine contractions, and in subinvolution. In the aggravating rheumatic pains of parturition, or of the later stages of pregnancy, which deceive by closely simulating those of labor in some ladies of rheumatic diathesis, this is positive and prompt.

In **hysterical conditions** of the menstrual epoch, in hypochondriasis or melancholia at these times, with congestive dysmenorrhea with the above indications, it is specific. In puerperal hysteria with great nervous excitement and the above conditions, or with excitable mania or incipient puerperal insanity, it is a most efficient remedy, having a desirable sedative influence on the nerves of the womb.

The agent is excellent in relieving irregular pains and uterine distress occurring during the course of **pregnancy**. It may be given in small doses, and it thus prepares the patient for parturition and undoubtedly contributes largely to a short, easy and uncomplicated labor. The agent, either as the fluid extract, or from two to five grains of the resinoid, is a most efficient **partus accelerator**. It increases the expulsive pains in a regularly intermittent and normal manner, without spasmodic irritation. While the normal pains are increased, all erratic, rheumatic, irregular and nagging pains are relieved. It promotes uterine involution and hastens normal recovery.

Knox observed the action of this remedy as a **partus preparator** in a hundred and sixty cases. His observations, summed up, are that the remedy has a positive sedative influence upon the parturient women, quieting reflex irritability, nausea, pruritis and insomnia. It has a positive anti-spasmodic effect, correcting neuralgic cramps, and irregular pains of the first stage of labor, sometimes terminating the labor precipitately, if given in too large doses, often without prodromic symptoms.

It relieves undue irritation of the uterine muscular fiber, relaxes the soft parts of the parturient canal, and thus facilitates labor and diminishes the risks of laceration by controlling undue irritability of the muscular fiber.

It maintains a better contraction of the uterus after delivery, but for this purpose he administers a special dose of thirty minims of the fluid extract after the birth of the fetal head. It was his habit in using this remedy for its preparatory effects, to give fifteen minims, at the time of retiring each night, for six weeks prior to confinement.

In six cases where Dr. Coffin used this remedy for the above purpose, there was **postpartem hemorrhage**, and this caused the doctor to question whether or not the agent had such a relaxing influence, as he was not in the habit of giving either this or any other remedy to anticipate such hemorrhage. Others deny this influence. I have never observed it.

Webster claims to have observed a case of **epilepsy**, attended with **amenorrhea** which was kept under control with *Cimicifuga* in

conjunction with the bromides, when the bromides alone had previously failed.

The elder Adolphus, treated **ophthalmia** with this remedy, especially when there was severe pain. He gave it in from two to five drop doses, every four hours, day and night. He claimed that in one severe epidemic it did not fail to cure. In the severe cases, he applied it externally, as well as administering it internally. In those cases where there was much nervous irritability, he combined it with *gelsemium*, which he was confident enhanced its influence.

The agent has been advised in the treatment of **smallpox**. One of the old writers claimed that he used it persistently through an entire epidemic, and the results caused him to entertain the highest confidence in this remedy. He believed he had aborted the disease in many cases, in forty-eight hours. If given with the appearance of the premonitory symptoms, the disease was so abridged, that no eruptions appeared. He usually gave it in the form of a decoction, in conjunction with equal parts of *asclepias*, and a small quantity of *ginger*. He gave enough of the remedy, to induce the physiological influence, such as aching in the muscles and pain in the head. The agent should have a further trial in this disease, as others have claimed to obtain results similar to those quoted above, and the influence of the remedy should be confirmed or disproved.

In the male it is valuable in **gonorrhoea**, with aching, in the bladder and across the kidneys. We prescribe it oftener than any other agent in these cases. It soothes the nervous irritability and materially assists in relieving the active inflammation. We usually find indications for *aconite* in the acute cases, or *gelsemium* where there is irritation with a tendency to spasmodic stricture, or *hydrangea* where there are sharp, cutting pains in urination; and these properly combined have been our "sure cure" treatment for many years, with mild injections of zinc sulphate, hydrastine, or hydrogen peroxide, all warm, or of warm water alone. It is valuable also in **orchitis** with its own indications. In **spermatorrhoea** with irritability and considerable sexual weakness and plethora, it will cure when other agents fail, if given in half-dram doses after meals.

ARNICA.

Arnica montana.

Synonyms—Leopard's Bane.

CONSTITUENTS—

Volatile oil, acrid resin, and a nauseous bitter substance, resembling cytisin, with gallic acid. A small quantity of an alkaloid called arnicin.

PREPARATIONS—

The **tincture of arnica** is a common preparation. It is in common use for external application. It may be given internally in doses of from one to ten minims.

Specific arnica, dose from one-half to five minims.

Physiological Action—The whole plant has a disagreeable, strong and irritating odor when fresh. The taste is bitter, acrid and permanent. In sufficient dose it causes vomiting and catharsis. It is also diuretic, diaphoretic and emmenagogue. In poisonous doses, it causes a burning sensation in the stomach, intense headache, and violent nervous disturbance, with marked abdominal pain. The pulse is reduced and often fails. There may be convulsions of a bilateral character, and ultimate death.

Specific Symptomatology—The agent is specific to bruised, sore, lacerated, contused, muscular structure. It may be applied diluted externally and should be used internally for the same purpose.

These symptoms may be present from disease, deep muscular soreness—tenderness on pressure in deep muscular structures. In advanced disease, where these symptoms are present with marked general enfeeblement, impairment of innervation, with weak circulation, with a tendency towards permanent prostration, the remedy is specifically indicated.

When there is muscular pain and soreness, which is increased by muscular movement, or soreness in the back, as if from strain, the remedy is useful.

Where there is inflammation of any organ, with general diffused muscular soreness, the agent in small doses is indicated. Where there

is inflammation of any organ from traumatic causes—severe injury to the parts, this remedy must be given.

In the **muscular soreness, pain**, and general physical discomfort that follows **confinement**, especially after **difficult labor**, this agent used both externally and internally will produce immediate benefits. Internally from fifteen to thirty drops in four ounces of water, a teaspoonful every hour will quickly relieve the muscular soreness or extreme lameness from the severe protracted muscular strain. Externally one part to five of warm water may be applied on compresses over the lame parts, and as soon as **soreness of the breasts** occur it may be applied over the breasts for a time.

Therapy—In small doses, *arnica* causes increased perspiration, increased secretion of urine, and an accelerated pulse. Its tonic influence upon the nervous system, and directly upon the heart and circulatory organs, make it a useful remedy indeed. In **adynamic fevers**, we have so few remedies possessing sedative properties, which do not depress, that each should be studied in this line, and *arnica* is especially available. It must be given in small doses frequently repeated, in the line of its indications. The indications for *bryonia*, *rhustox*, or *belladonna*, or perhaps *cactus*, may be present at the same time.

Arnica is selected for internal use when there has been a **severe injury**, with fever, or in **surgical fever**, where there has been shock and general prostration. In all cases after severe cutting operations, where there has been destruction of muscular tissue, soreness follows and pain, which is ameliorated to an excellent advantage by the internal use of small doses of *arnica*.

In **low fevers**, where the nervous system is greatly at fault, it not only controls the temperature, but increases the nerve-power, overcoming depression and debility, especially in severe, protracted fevers where the exhaustion results from loss of nerve force and where there is marked depression; if there be excessive **night sweat, colloquative diarrhea, incontinence** of urine or feces, **feeble respiratory power** where difficulty of breathing keeps the patient awake. It may be given in conjunction with other specifically indicated remedies to excellent advantage, where there is **low muttering delirium**, where the tongue is dry and where the mouth and throat seem to be clogged with foul, stringy mucus.

When there are typhoid conditions present, with inflammation of the respiratory organs, the influence of this agent is much like phosphorous, stimulating the respiration and encouraging the oxygen carrying power of the blood. Many of the milder forms of acute, or **chronic paralysis**, are benefited by this remedy.

It is useful in those forms where mania or delirium tremens are present.

In any case where it is indicated externally, it may be given internally at the same time. Its influence is greatly enhanced.

Soreness in the small of the back, lame back, general weakness of the muscles of the back, with soreness prevailing, sickening backache in the region of the kidneys, are all benefited by *arnica*. It not only relieves the soreness and the bruised conditions, when given internally, but quickly overcomes the ecchymosis.

As an external application, to **cuts, bruises, lacerations**, and sores, *arnica* has long been a popular domestic remedy. It is used in full strength, but the best results are not so attained. It is more serviceable when diluted with from one to six parts of warm water. It is a stimulant to the skin, promoting absorption of nutritive material. It undoubtedly assists in carrying off the broken down tissue, which results from the traumatism, and promotes rapid repair. I have observed its influence to be greatly facilitated by combining it with a nutritional substance. In cases where the muscles beneath the skin were severely **lacerated**, torn and bruised, I have applied one part of *arnica* with five parts of warm fresh sweet milk, keeping the application warm, covered with a protective dressing, and renewed every two or three hours. It is incredible how rapidly the restoration will take place under these circumstances.

In debilitated conditions, where there are old **sores** of long standing or **cold abscesses**, this agent may be applied in conjunction with bovine and will accomplish excellent results.

It is desirable that the agent should be studied more thoroughly, in the line of its internal use, in surgical fevers with shock, and in conjunction with external applications after general bruising and

laceration, and in extreme cases of **adynamia**.

When there are circumscribed sore spots in the muscular structures of the body—**hyperesthetic areas**—without apparent cause, this agent is indicated.

PULSATILLA. *Anemone pulsatilla.*

Synonyms—Pasque-flower; meadow-anemone; wind flower.

PREPARATIONS—

Extractum Pulsatillae Fluidum, Fluid Extract of Pulsatilla. Dose, from one-half to two minims. Precipitates upon addition to water.

Extractum Pulsatillae, Extract of Pulsatilla. Dose, one-sixth of a grain.

Tinctura Pulsatillae, Tincture of Pulsatilla. Dose, from five to thirty minims.

Specific Pulsatillae, Specific Pulsatilla. Dose, from five to twenty drops in four ounces of water. Teaspoonful every two hours.

Anemonin. A crystallizable camphoraceous body; volatile, easily converted in the presence of alkalis into anemonic acid. Dose, from one-twentieth to one-fourth of a grain.

The medicinal properties must be extracted from the fresh herb, as the volatile character of anemonin permits of the rapid dissipation of these properties on drying.

Physiological Action—The agent has a direct influence upon the brain and spinal cord. In toxic doses it produces mental hebetude, dilated pupils, coma, and in extreme cases, convulsions. It lessens general sensibility.

It paralyzes to a mild degree both, sensation and motion. It increases, in proper doses, the cerebral functions and imparts tone to the sympathetic system.

In toxic doses it is a heart depressant; it lowers arterial tension, reduces the pulse rate and temperature.

It exercises an influence upon the heart similar to that of *cactus*, increasing its power, improving the strength and rate of the pulse and slowing the rapid and feeble pulse of nervous prostration.

The influence of full doses of *pulsatilla*, taken into the stomach and intestinal canal, is that of an irritant. In the mouth it acts like *aconite* or *xanthoxylum*, producing tingling, burning and subsequent numbness. It produces a sensation of rawness, and is followed by acid eructations and unpleasant taste. It produces tightness and constriction of the chest, with congestion, chilliness and great weakness. The agent is seldom given in sufficient doses to produce the physiological effects. It operates much more satisfactorily in doses too small to produce such action. It has long been popular with the homeopaths in minute doses.

In studying its medicinal influence on the circulation, *pulsatilla* is said to act in much the same manner as *aconite* during fevers, where there are high nervous manifestations. It equalizes the circulation somewhat like *belladonna* it is thought. Where catarrhal disorders are present, subacute in character with congestion and a free discharge of thick bland, yellow or yellowish green mucous, it seems to act directly, except in chronic catarrhal conditions. This remedy will act satisfactorily only when the precise indications for which it should be prescribed, are present.

Specific Symptomatology—Homeopathic physicians declare fearfulness as an indication, anticipation and dread of calamity, fear of trouble or death; in male patients suffering from sexual excesses, with spermatorrhea, threatened impotency, prostatorrhoea, with fear of approaching imbecility. We find it indicated in **amenorrhoea**, with mental perturbation, great apprehension of trouble. **Spermatorrhea**, with fear of dire results. The remedy is especially efficacious when existing disorders of the reproductive organs are a cause of extreme anxiety.

In addition to the well known indication, I might say that it is of value in disorders of the reproductive organs which depend upon defective innervation, and which are usually accompanied with manifestations of hysteria or melancholia, or which depend upon sexual derangements and menstrual disorders which are accompanied with loss of strength, chilliness, more or less headache, and gastric

derangements, such as nausea, eructation of sour water and other nervous manifestations.

Its best influence is exercised in women of blond temperament, particularly of lax muscular fiber, and of mild and yielding disposition, and smaller doses with these patients will produce better results than larger doses with other patients. Some writers claim that it may be given during the progress of inflammation of the mucous membranes, prescribed in much the same manner as aconite would be prescribed, or as *cactus* is given.

It acts best in the catarrhal stage of inflammation rather than in the initial stage, and in this it differs somewhat from *aconite*.

Therapy—Its influence is especially directed to that portion of the sympathetic nervous system influencing the **reproductive organs**. It increases the tone and functional power of these organs, and overcomes irregular, imperfect or deficient action.

It is prescribed in **uterine disorders** which induce melancholia and hysteria.

It has an apparent antispasmodic or nerve-soothing influence, which renders it valuable in **hysteria** and general nervous irritation with convulsive phenomena, in the absence of acute inflammation, blood determination or fever. A few physicians laud it highly in **hysterical convulsions** and in convulsive conditions due to **uterine disorders**.

In **general nervousness** due to chronic uterine disorder, with or without hysteria, with despondency and nervous irritation, *pulsatilla* is an excellent remedy. It may be given in doses of one drop, frequently repeated. In deficient, suppressed and **irregulamenstruation**, with the above symptoms, it is of rare value. It will quickly promote a normal and regular flow.

It is an excellent agent in small, frequent doses when the mental conditions above named are present **during pregnancy**, with a general relaxed and atonic condition. Its influence in these cases is enhanced by combination or alternation with *cimicifuga*. It certainly improves the general condition and conduces to a normal and easy labor.

It is needed during the pregnant state. to correct hysterical manifestations and urinary irregularities. It acts better in the catarrhal stage of inflammation rather, than in the initial stage.

In **nervous exhaustion**, with feeble pulse and deficient capillary circulation, cold extremities and a generally relaxed physical condition, it will serve an excellent purpose combined with other nerve tonics, or in conjunction with the directly indicated remedies.

Dr. Strauss adds two drams to two ounces of water, and gives a teaspoonful every hour in his irritable cases, especially in low forms of headache, light and dull; restlessness, patient rolling and tossing until worn out; a rambling mind with an occipital headache; mild ovaritis; mild neuralgia with irritation of the brain; dragging headache frequently occurring in women.

Pulsatilla is a remedy for **nervous headaches**, especially if of the anemic variety, characterized by pallor of the countenance—the headaches of the menstrual epoch, of pregnancy, and also those of gastric origin with this specific character. It relieves the constipation, enuresis and dysuria of hysteria and pregnancy. It is excellent for the **urinary irregularities** of the pregnant condition, with ammoniacal urine, catarrh, pain, tenesmus, burning or sharp shooting pains. Its influence in this is facilitated by *hydrangea*, *gelsemium* or the benzoate or salicylate of lithium.

Where there are menstrual disorders of any kind, if there be loss of strength, chilliness, headache, gastric derangements, sour stomach, and melancholia, *pulsatilla* is directly indicated.

Leucorrhoeal discharges, attended with pain in the loins, weariness, **depression of spirits**, loss of appetite and general derangement of the nervous system, are also satisfactorily relieved by *pulsatilla* taken internally in five-drop doses of the tincture three times a day, and continued for a few weeks.

Pulsatilla has been frequently suggested in the treatment of **phlebitis**. Its indications should be looked for. Dr. Halbert of Nashville gives *pulsatilla* for the **eye complications** of **diabetes**. He finds it a reliable remedy although he does not explain its action.

Our observers in many cases combine *pulsatilla* with heart remedies and *nux* for heart trouble, and nervous weakness, especially if there be despondency, or with the alkaline salts in acid stomach. The combinations work very good results if correctly made.

Homeopaths advise *pulsatilla* in catarrh of the stomach where the patient suffers most when the food is taken, or where the most benefit is derived from taking the food cold. Dr. Huffman prescribed it for the mental symptoms in a patient suffering from **chronic catarrh** of the **stomach**. The tongue was heavily coated. It was dark-brown in the center. The tip and edges were red; there was fullness and pain always after eating. Sometimes there was vomiting of the meals. There was a large quantity of mucus in the vomit. This was followed by a burning sensation from an excess of acids.

This case was not permanently benefited by the ordinary treatment. The administration of *pulsatilla* and *echinacea* before meals finally completed the cure. *Pulsatilla* was given in large doses, from eight to twenty minims.

Another writer cured the **excessive acidity** of these cases with five-drop doses of *passiflora*, every two hours.

It is given in **bronchial** and **pulmonary** irritation and in bronchial asthma.

It is used in **eruptive fevers**, and in those cases of measles in which the eruption produces excessive irritation of the post-nasal cavity, throat and bronchial tubes.

It has been lauded in **rheumatism**, but any specific influence in this condition is not ascribed to it.

In **gonorrhoeal epididymitis** or in gonorrhoeal orchitis, the agent may be given with excellent results, especially if there be gleet and stricture. Small and frequent doses are better than large infrequent doses. It speedily relieves the pain and nervous excitability. It is advised for internal use for frost bites.

HYPERICUM.

Hypericum perforatum.

Synonyms—St. Johns Wort, Millepertuis.

CONSTITUENTS—

It contains a volatile oil, red coloring principle, pectin and a resin.

PREPARATIONS—

The **powder**. Dose from one to five grains.

The **tincture**. Dose from one-half to ten minims.

Fluid extract. Dose, from one to five minims.

Specific Symptomatology—Muscular bruises, deep soreness, painful parts. A sensation of throbbing in the body, without fever. Burning pain, or deep soreness in the spine upon pressure, spinal irritation, circumscribed areas of intense soreness over the spinal cord or ganglia. Concussion, shock or injury to the spine, lacerated or punctured wounds in any location, accompanied with great pain.

Therapy—This agent by Homeopathic physicians is considered specifically adapted to irritation, soreness, or chronic disease accompanied with tenderness of the **spinal column**. It is indicated when symptoms of that disease or of general spinal tenderness are present. If accompanied with fever, which is seldom the case, other indicated remedies should be prescribed. For traumatism of the spinal column, or nerve centers, Homeopaths use it externally and internally, in traumatic conditions of the spinal cord, and where there is shock or where there are contusions or lacerations without shock. They believe that it will prevent **convulsions** from spinal injury, and will prevent **tetanus** from punctured wounds, relieving the pain resulting from injury.

Hypericum in doses of two drops every four hours is suggested as of much value in the treatment of piles. It may induce headache, or a burning pain in the lumbar region. It sometimes induces diarrhea, but these symptoms occurring, the remedy may be reduced in quantity or discontinued for a short time, and then resumed.

Used as a fomentation or ointment it is applied to **tumors, caked breasts, enlarged glands, ecchymosis, bruises, swellings** and **painful ulcers**.

USTILAGO.

Ustilago maidis.

Synonym—Corn Ergot.

PREPARATIONS—

Fluid Extract Corn Ergot, miscible with water. Dose, ten to thirty minims.

Physiological Action—The *ergot of maize* or common Indian corn is similar in its properties and in its physiological action upon the central nervous system and upon the capillary circulation of these organs, to those of the better known ergot of rye.

It is, however, not so irritating in its influence, for, while possessing power, it works in a smooth, even and pleasant, but positive manner. It produces uterine contractions of a perfectly regular, intermittent and safe character, thus possessing a great advantage over the *rye ergot*.

Therapy—It is a useful remedy in uterine inertia as it does not exercise the irritating influence of the *ergot of rye*. Its mild influence prevents any possible injury to the child, and it possesses a very small percentage of the oil of *ergot*, which is supposed to poison the infant. It conduces to **normalinvolution** and tonic and permanent subsequent contractions, with no increase, but rather decrease, of labor pains. It is also an efficient remedy in **post-partum hemorrhage**.

The writer has used it to most excellent advantage in metrorrhagia, and especially in the **hemorrhage** from **cancer** of the **uterus**, holding the entire condition in check for a time relieving the pain.

In the conditions of **chronic uterine hemorrhage** or other disorder in which the *ergot of rye* is indicated for continued use, this agent will serve all the purposes with few of the dangers of the former remedy.

MISTLETOE.

Viscum album.

Synonym—*Viscum flavescens*.

PREPARATIONS—

Tinctura Visci Albi, Tincture of Mistletoe. Dose, from five to sixty minims.

Extractum Visci Albi Fluidum, Fluid Extract of Mistletoe. Dose, from five to forty minims.

Specific Mistletoe. Dose, from one to ten minims.

Administration—The remedy has failed because the agent used was inert, dried and, perhaps, old. The preparations must be made from the green plant, and the dose must be sufficiently large and frequently repeated. In some cases it may be necessary to repeat the dose every fifteen minutes.

Physiological Action—Several cases of severe poisoning from eating the leaves and berries are on record. It produces vomiting, prostration, coma, contraction of the pupil, with muscular spasm. In other cases it produces tenesmus, bloody stools, convulsions, emesis, catharsis and death.

In its influence both upon the cerebral circulation and upon the womb and reproductive functions it acts similarly to *ergot*.

In 1880 Dr. Brodnax of Louisiana experimented with this remedy to determine its action on the final pains in labor in animals, especially with cows. The results were so satisfactory that he finally used it instead of *ergot* almost exclusively.

It has long been known to exercise oxytocic powers. Brodnax believes that it may be given at almost any stage of the labor without harm.

Specific Symptomatology—It is indicated where there is a flow of blood to the brain, and frequent headache and flushing of the face. In hysteria, epilepsy and other nervous diseases; in paroxysms of tearing and rending pains, rheumatic and neuralgic, it is a pain subduer of much power.

With the above conditions it is exceedingly valuable in diseases of
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women, in **amenorrhea**, **dysmenorrhea** and as an **oxytotic**. Its influence is, perhaps, more marked in labor than when prescribed for any other condition.

Therapy—In its action on the **womb** it is in some particulars superior to *ergot*. It is a drug capable of producing **intermittent uterine action**, as distinguished from the tonic contractions caused by some other oxytotic medicines.

It exerts its full force on the long muscles of the uterus, acting on the fundus mainly, while the cervix remains soft and uncontracted.

It may be given early in labor to give tone to the contractions; does not act spasmodically, but steadily and for a long time; it is not followed by any untoward effect; does not, like *ergot*, produce hour-glass contractions; has a tendency to keep the womb contracted after the expulsion of the placenta and attachments; does not act on the circular muscles of the womb; is a safe oxytotic, as the effects can be continued for hours with small doses.

Tascher, in 1892, reported the results of his observations of the action of this agent upon the **heart**. He became convinced that it was an agent of undoubted merit. He has used the fluid extract in doses of from twenty to thirty minims as a remedy for hypertrophy of the heart, with valvular insuf. ficiency, dropsy of the extremities, small weak pulse, dyspnea, and inability of the patient to rest in a reclining position, and witnessed astonishing relief from this agent when others failed. Under its use in the above named conditions the pulse became full, strong and regular, the cardiac dyspnea was arrested, and the patient able to obtain rest in a reclining position. In some cases, when given in large doses, it produced marked diaphoresis, increased flow of the urine and serous discharges from the bowels, results desirable in all cases where **dropsy** was associated with the disease, and a combination of therapeutic action not readily obtained in any other cardiac tonic.

Its diaphoretic and cathartic action cannot be relied upon in every case, but as a cardiac tonic it is most efficient.

A recent writer has used this remedy in the treatment of **chorea**. He has treated several cases of long standing and very persistent. He gives five drops of the fluid extract of this remedy every two hours.

In the treatment of several cases of spasm in children, he has used this same remedy as an antispasmodic, and has obtained very good results.

In the latter stages of **typhoid fever**, when the heart's action is weak, rapid and irregular, with a tendency to **collapse**, given in conjunction with strychnia, the condition of the patient rapidly improves.

This remedy is recommended for the **reduction of blood pressure**. A high authority has suggested that one grain of the aqueous extract of this substance be added to ten grains of distilled water and that combined with two ounces of simple syrup, from one to two teaspoonfuls can be given at a dose as indicated in that particular patient. This gives one-fifth of a grain of the extract at a dose, especially recommended where there is arteriosclerosis.

ANTHEMIS

Anthemis nobilis.

Synonym—Chamomile.

CONSTITUENTS—

Volatile oil, Anthemene, Antheminic acid, tannin, resin, wax.

PREPARATIONS—

Extractum Anthemidis Fluidum, Fluid Extract of Anthemis. Dose, one-half to one dram.

Administration—This agent seems to exercise but little influence in physiological doses. A few drops of the specific *anthemis* or the German tincture in a glass of water in teaspoonful doses every few minutes or every hour will accomplish good results when directly indicated.

Specific Symptomatology—Severe pain in infants, from simple causes, extreme susceptibility to pain, general hyperaesthesia, subjective, acute, transient, sharp pains.

The following indications were given in *The Medical Century*, and can be relied upon:

There is perpetual hyperesthesia; there is starting and, jumping. The
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child is cross, wants to be carried; stool apt to be soft and charged with sulphuretted hydrogen; if there be diarrhea accompanying, the passages will look like the white of an egg mixed with greens. The gums are liable to be tender. Tooker says, "the remedy of all remedies and the one most often called for during the teething period is chamomile. This remedy is to children what *pulsatilla* is to women, a veritable *vade mecum*, "

Chamomile, acts mildly on the nervous system to subdue irritability and on the gastro-intestinal tract to relieve irritation there. It is adapted to the restless, peevish, irritable, discontented, and impatient infant who insists on being carried in arms constantly. With these there is usually hepatic tenderness with watery or greenish, slimy discharges, yellowish and white lumps of undigested curds, the fecal excoriating the external parts. There is often difficulty and pain in urination, and bloating of the abdomen with flatulence. It prevents convulsions by relieving the irritation, but has not sufficient antispasmodic effect to control the convulsions. It is adapted to irritation of the nervous system, and not atony.

The many conditions with the adult woman it is beneficial, especially to those in the **latter months of pregnancy** where there are present false pains, nervous twitching, reflex cough, explosion of irascibility; where there is fretfulness, peevishness, impatience and discontent; where there is **morbidsensitiveness** to pain; where there are sudden fits of temper during **menstruation** with muscular twitchings.

Therapy—This agent in hot infusion is emetic, a stimulating diaphoretic, and it promotes the **menstrual flow** when suppressed from cold. It is of little importance, in the writer's opinion, as we have so many other agents with wider and more positive action. In suppression of the secretions from acute cold it is a useful remedy. If drunk during an alcohol sweat or Turkish bath, its influence is greatly increased. In acute **rheumatism** it will prove of service,

It is a mild stomachic and general tonic in half-ounce doses of the cold infusion, and it seems to mildly stimulate digestion.

In acute **colic** in infants, with nervous excitability and tendency to spasm, a few drops may be dropped into a half glass of water and a teaspoonful given every ten minutes with immediate relief. In flatulent

colic and in colic accompanying diarrhea, the discharges of a greenish, feculent character with reflex nervous irritation or increased nervous susceptibility, it is a specific remedy.

In constant worry and fretfulness of very young infants, without apparent cause, it is a soothing remedy of much value. It is excellent during the teething period to allay nervous irritation and soothe pain. In neuralgic pains in children it is useful.

In **hysterical** females its therapeutic influence is similar to that of *pulsatilla*. It soothes general irritation and quiets imaginary pains, especially if occurring at the menstrual epoch.

It is useful in dysmenorrhea and in mild cases of ovarian neuralgia. In amenorrhea with intermittent pains, and sensations of appearing menstrual flow, it is useful. It may be given for the erratic pains and reflex nerve irritations of the last months of pregnancy, the reflex cough and unbearable muscular cramps and twitchings.

MATRICARIA. MATRICARIA CHAMOMILLA.

Synonym—German Chamomile.

While this remedy very closely resembles *Anthemis Nobilis* or *Roman chamomile*, there are several distinguishing features in their actions. At the same time these are not sharp. All that has been said of *Anthemis Nobilis* can be said of this preparation.

Therapy—*Matricaria* is conspicuously a child's remedy, but not distinctly so. A few drops in half of a glass of water, given every few minutes in dram doses, will quiet extreme restlessness and irritability. The general soothing effect is satisfactory. It especially controls certain forms of colic. Peevish children and those who are continuously fretting, or crying out and who demand constant care are benefited by this remedy. It influences the membranes of the gastro-intestinal tract. It is advisable when the patient has contracted a cold, or when there is general chilliness; when the symptoms of la grippe in children are present, especially where there is disturbed condition of the digestion, inducing diarrhea sour eructations or acid vomiting and colicky pains.

The Homeopaths advise it where there are greenish flocculent particles in the loose watery feces of a patient with diarrhea. The movements are slimy or yellowish, with an offensive odor, and are acrid, and produce excoriation of the external parts. With these patients there are often muscular twitchings and an inclination to spasm. The remedy has a sedative influence in these, but must not always be depended upon for its active antispasmodic effect. It may be given during dentition, and being continued the irritability can be quite satisfactorily controlled. It is often necessary to give more active anodyne remedies.

GROUP I.
Agents Acting on the Nervous System.

DIVISION II.
Stimulants and Excitants.

CHAPTER I.
Special Nerve Stimulants.

NUX VOMICA
STRYCHNINE and it's SALTS
CAPSICUM
IGNATIA
ZANTHOXYLUM
SUMBUL

NUX VOMICA. ***Strychnos nux vomica.***

Synonym—Vomit nut.

CONSTITUENTS—

Strychnine, brucine united with igasuric acid and loganin.

PREPARATIONS—

Extractum Nucis Vomicae, Extract of Nux Vomica. Dose, from one-eighth to one grain.

Tinctura Nucis Vomicae. Dose, from two to fifteen minims.

Extractum Nucis Vomicae Fluidum, Fluid Extract of Nux Vomica. Dose, from one to five "minims.

Specific Medicine Nux Vomica. Dose, from one-tenth to two minims.

Physiological Action—*Nux Vomica* and its alkaloid, strychnine, act on the spinal cord and the medulla oblongata, a non-poisonous dose stimulating, and a toxic dose paralyzing them. There is contraction of the arterioles, while the heart is stimulated by a moderate dose.

A poisonous dose causes spasm of the muscles of the chest and prevents the respiratory act, with resulting asphyxia. According to the quantity taken, there may be weariness, stiffness in the muscles,

soreness and heaviness in the limbs, stiffness of joints and the muscles of the chest and of the lower jaw. A larger dose causes violent tetanic convulsions, with brief intermissions, acute sensibility, and death may result in five minutes and usually within six hours. There is contraction of the muscles, resembling trismus, with constriction in the throat, headache, dizziness, with symptoms of asphyxia. There is a leaden color of the skin; breathing is laborious; the pulse is rapid and fluttering, pupils dilated, while the face has a staring expression, with an appearance of fright.

The spasms grow less violent as the system becomes exhausted. During the intermission in the spasms the slightest stimulus will renew them. In some cases there is pain—a neuralgia of the spinal nerves—when an attack is accompanied with shrieks of pain, or with dizziness, insensibility and convulsions. Small doses in the corpulent may cause slight creeping sensations in the skin like electric shocks, with involuntary contraction of muscles, with headache, a disagreeable sensation in the head and dizziness. The influence of strychnine upon the great sympathetic is shown in many ways. There is an elevation of arterial blood pressure, an increased vigor to the heart's action, increased action of the sudoriparous glands, with dilatation of the pupils.

In some particulars it resembles the action of electricity in its effect upon the nervous system. There is often a sensation of tingling, a temporary stimulation, a sensation of increased nerve force, a renewed energy imparted to both voluntary and involuntary muscles.

Specific Symptomatology—The indications for *nux vomica* are sallow skin, a sallow circle around the mouth, yellowness of the conjunctivae. A thick yellow, pasty coat on the tongue, fullness, soreness or pain in the region of the liver, suggest the use of *nux vomica* in medicinal doses. It is also suggested by colic due to atonicity characterized by abdominal fullness, *sharp pain at the umbilicus* and a general torpor of the system. These symptoms are more quickly relieved by small doses of specific *nux vomica* than by powerful anodynes, and the relief by this agent is a cure. The indications are directly in the line of its physiological influence in small doses, especially when there is an impairment of tone of the gastro-intestinal apparatus, a general or local atonicity of the digestive organs or organs concerned in these processes.

Therapy—This condition is sometimes induced by reflex influence, apparent in the persistent **vomiting** of **pregnancy**, the vomiting or **regurgitation** of **food** present in hysteria, and in the **vomiting** of **phthisis pulmonalis**, especially occurring in these latter cases after coughing.

Dr. Perry advises *nux vomica*, ten drops in four ounces of port wine, giving a teaspoonful every three or four hours when sea-sickness threatens, or when it may be anticipated. He believes it is a very reliable remedy. A small quantity of the mixture may be taken on the tongue every few minutes, sometimes with better results.

The same atonic condition is present with **infantile diarrhea** of hot weather, in **cholera infantum**, in **cholera morbus** and in cholera. In the vomiting of these conditions small doses of *nux vomica* frequently repeated are specific.

In atonic congestion of the spleen or of the liver, existing from malarial influences, with whatever disease manifested, this agent is directly indicated.

It stimulates the digestion and increases the appetite. It is one of the very best, if indeed it is not the best, of our restorative tonics. In all debilitated conditions, in convalescence from exhausting disease and protracted fevers, wherever there has been depression or exhaustion of nerve force, it is the remedy.

In **chronic stomach disorder**, with deficient digestive power and general malnutrition, this agent arouses the nervous system and increases the functional activity of the digestive and assimilative apparatus more satisfactorily than any other known agent.

Cases of **vomiting** in **pregnancy** have been controlled by frequently repeated doses of the tincture of *nux vomica*, and the weakness of the stomach in **dipsomaniacs** with vomiting and anorexia are controlled with the agent, which is often rendered more efficient by combination with *capsicum*.

Strychnine.

Description—This most important of the alkaloids of *nux vomica* occurs in the form of colorless prismatic crystals, or as a white crystalline powder. It is odorless, but intensely bitter. It can be tasted in 750,000 parts of water. It is permanent in the air, very sparingly soluble in water, soluble in one hundred and ten parts of alcohol and in seven parts of chloroform. Its salts, named below, are in more common use than the uncombined alkaloid, largely because of its insolubility, but it may be given in doses of from one-eightieth to the one-twentieth of a grain. The more soluble salts are in every way preferable.

Strychnine Sulphate. Dose, from $\frac{1}{120}$ to $\frac{1}{15}$ of a grain.

Strychnine Nitrate. Dose, from $\frac{1}{120}$ to $\frac{1}{20}$ of a grain.

Strychnine Phosphate. Dose, $\frac{1}{180}$ to $\frac{1}{80}$ of a grain.

Strychnine Arseniate. Dose $\frac{1}{200}$ to $\frac{1}{50}$ of a grain.

Specific Symptomatology—In acute heart failure from any prostrating cause, strychnine is given hypodermically or in conjunction with digitalis. In the prostration following any inflammatory disease of a severe and protracted character this combination is specific, but it seems to be particularly beneficial in the prostration of beginning convalescence **after pneumonia**, especially if there has been abscess or other exhausting complications. Often in these cases there is a tendency to sub-normal temperature and slow pulse; when this is the case there are but few remedies that will act as strychnine, and none will excel it.

Therapy—In **impotence** due to exhaustion, to relaxation or atony of the erectile tissue of the sexual apparatus, strychnine in small doses persistently used is an advantageous remedy. The extract of *nux vomica* may be given, but will not work as promptly as the alkaloid. In the incontinence of urine of the feeble and aged, and in nocturnal enuresis in childhood from atonicity without local irritation, minute doses of strychnia sulphate will often cure after repeated failure with

other remedies. These facts are especially true in plethoric and relaxed cases and in inactive patients.

In uterine inertia from exhaustion or lack of nerve force, this agent excels all others. It increases nerve force, restores the normal contractility of the uterine muscular fibrillae, and increases the power and number of contractions in a normal manner. It also anticipates and prevents **post-partum hemorrhage**. In cases where hemorrhage has previously occurred it should be given in advance and for a short time subsequently to the birth of the child.

The influence of the sulphate or nitrate of strychnia is that of a spinal stimulant, pure and simple, with the power of augmenting nerve force to a most desirable extent by increasing the nutrition of the nervous system entire.

Its effects are not alone upon the motor nervous system and voluntary muscles, but upon the sympathetic nervous system as well. For this influence it is best administered hypodermically in doses of from the one one-hundredth to the one-twentieth of a grain.

In **paralysis** of the **aged**, without active inflammation, it is of value, especially if injected deeply into the paralyzed muscles. Wherever paralysis occurs, without inflammatory action, it may be used if there be no structural changes in the nerve centers.

In the early stage of paralysis where rigidity or muscular spasm is present the agent is contraindicated. In fact, it is not to be administered in paralysis, except where absence of central irritation is evidenced by complete relaxation, flaccidity and perhaps tumidity. The more perfect the relaxation the more satisfactory the action of the agent. In these cases the agent should be injected directly into the paralyzed muscles.

In lead poisoning, with wrist drop and other evidence of suspension of nerve influence, with or without lead colic and constipation, this agent exercises a direct influence.

The influence of strychnine to relieve, modify or cure **alcoholism** is now almost universally acknowledged. It has been but a short time that dipsomania has been considered, as it now is, to be an actual nervous

disease of the central nervous system with concomitant phenomena—a long train of disagreeable or dangerous symptoms. But since this fact has been recognized, there has been a universal effort made to discover the most satisfactory method of cure.

In 1891 Yarochevski reported a series of experiments on dogs, conducted to determine the antagonistic power of strychnia over alcohol. He gave them alcohol of a strength of 42 to 65 per cent and produced a staggering gait by the injection of 60 grams and complete intoxication with 90 grams. The alcohol was given for a week and produced considerable emaciation, followed by death. If, however, a hypodermic injection of two milligrams of strychnine was administered with each dose of 30 grams of alcohol, the latter could be run up to 180 grams without the development of intoxication or symptoms of strychnine poisoning.

On the ground of these experiments the author formulated the following conclusions: Strychnine suppresses the toxic action of alcohol; it enables persons to ingest large quantities of alcohol for a long time without appreciable injurious effects on the organs. The increased doses of alcohol which may be given with impunity, if associated with strychnine, have a limit—i.e., as soon as the quantity of strychnine necessary to counteract the effects of the alcohol commences to give rise to toxic symptoms. Strychnine is applicable as an antidote in all forms of alcoholism.

Portugalow, of Samaria, reported in 1891 that he cured 4-5 cases of **dipsomania** with hypodermic injections of strychnine nitrate. He knew of reliable and specific remedies for two affections only: strychnine for the various forms of alcoholism and quinine for malarial fever.

He prescribed a solution of the nitrate, two grains to the ounce of distilled water, for subcutaneous injection. He gave one or two injections daily of from four to eight minims of the solution. Usually ten to sixteen injections sufficed for a complete cure. This agent has now become of first importance in the cure of this condition.

Baines investigated the action of the nitrate of strychnine in **surgical shock**. In thirty cases he injected the remedy hypodermically in one-thirtieth grain (loses for from two to six days previous to the operation, where its general influence was not contraindicated by irritation of the

nerve centers. On the day preceding the operation it was injected every three hours. It was injected before beginning the operation every two hours, and for two or three days afterward. In some of the cases he claimed *an entire absence of shock*. In all others the shock was very mild, and in no case was it severe, and convalescence was short and satisfactory. In all cases there was no collapse from the anesthesia lies and but little reduction of the force and strength of the heart and no respiratory failure.

Hare advises one-twentieth of a grain of the sulphate of strychnia at the time of the operation, just preceding and subsequently every half hour, treating the conditions induced by the agent symptomatically. We believe it to be better to begin earlier, in order to have the system previously braced and not be obliged to administer the agent to toxicity just at the time.

It is a direct antidote to **chloral** and is used to great advantage in the earlier stages of **opium poisoning**, poisoning or asphyxia from gas inhalation and chloroform narcosis, and as a restorative to those apparently drowned.

Antidotes—In the treatment of strychnine poisoning, the stomach should be immediately irrigated. The spasms should be met promptly with inhalations of chloroform or amyl nitrate. A strong infusion of *white oak bark* or tannic acid in water should be given, or the substances can be used in the irrigating fluid. After the stomach is thoroughly evacuated, chloral in doses of from fifteen to thirty grains, with as much sodium bromide, may be given, or *passiflora* in from two to four dram doses, or large doses of the fluidextract of *gelsemium*. We have assurance now that full hypodermic doses, thirty to sixty minims of *subculoid lobelia*, repeated as needed, will prove to be a most dependable antidote for the action of this agent.

If the patient cannot swallow, the *passiflora* or chloral in solution may be injected into the rectum, or *veratrum* may be injected hypodermically in doses of from ten to fifteen minims. If the spasms increase in severity and in frequency, the result will be fatal. If they decrease in severity, are of shorter duration and occur after increasing intervals, the prognosis is hopeful.

Strychnine Phosphate.

Therapy—The phosphate of strychnine given in doses of from $\frac{1}{180}$ to the $\frac{1}{80}$ of a grain combines the stimulating properties of the strychnine with the nerve building properties of the phosphorus. It is a combination that should be of much value in conditions where it is desired to retain the high point gained by a nerve stimulant, and make the condition thus gained permanent. The use of phosphorus and the phosphates during pregnancy, where anemia is present or where the nervous system is seriously drawn upon by the nutrition of the fetus, has been observed by many. The use of the phosphate of strychnine in doses of one one-hundredth of a grain is commented upon by Dorset. (Annals of Gynecology, Nov., 1897.)

He says a good appetite and a good assimilation are obtained in the general weakness and debility of the anemic constipation is relieved, and, in short, the patient is built up and placed in a good condition to pass through the ordeal of labor. It improves the appetite and digestion, overcomes despondency, relieves constipation and materially builds the patient up, placing her in an excellent condition to pass through the labor with full strength. The uterus contracts promptly after the second and third stages, and the use of ergot is entirely dispensed with. The often observed chilliness or rigors which, in the majority of cases immediately follow labor, have been noticed in but few cases. These rigors, little account of which can be found in textbooks, are nothing more or less than surgical shock. This is obviated by the prophylactic—strychnine. He believes that as phosphorus and strychnine are remedies used in the treatment of rachitis with good results they are indicated during the gestation of the rachitic fetus.

A wide field of action is open to this compound, as prostration from real deficiency of the nerve elements, prominent among which is phosphorus, is a common condition among very many, especially among brain workers. The strychnia lifts the forces up to the normal point, and the phosphorus permanently holds them there by its restorative influence.

Strychnine Arsenate.

Administration— The dose is from the $\frac{1}{200}$ to $\frac{1}{50}$ of a grain, usually administered in pill form. In granules of $\frac{1}{120}$ of a grain the agent is convenient of administration and prompt in its action.

Specific Symptomatology—Hale says arsenic acts upon the glandular system, and fluids of the body, while strychnine acts upon the nervous system. He advises it where the nutritive and glandular systems are involved to any great extent, with implication of the nervous system at the same time. This is found in paresis or mild forms of paralysis with edemic tissues, sodden, relaxed muscular structures, with anemia and tendency to dropsical conditions; great nervous weakness or prostration, with marked blood dyscrasia, chronic glandular induration, chronic ulceration, and the conditions of the mucous surfaces of the intestinal canal following typhus or typhoid fever and dysentery.

It is specifically indicated in the debility or nerve failure of the aged, and in the prostrating influence of severe disease in children. During severe fevers it will not antagonize the sedative influence of the antipyretics, but will brace the nervous system against the prostration that will follow when the fever is gone.

It antagonizes vasomotor paralysis in all cases. In spasmodic affections it is valuable. The author has given it persistently with sedative remedies in severe chronic cases of **asthmatic bronchitis**, especially in the aged, and cured them both permanently. It is indicated in a general way where strychnine is demanded, but has a special characteristic tonic influence.

It may be given in the asthenic stage of all prostrating diseases, except during the hours of the day when the temperature is increasing or stationary at its highest point. It strengthens the heart's action, and, like quinine, if given in the intermission of the temperature, or at the time of the greatest remission, it often prevents an increase of the fever and determines a continued lower temperature. It increases or intensifies the action of many stimulating, restorative or antiperiodic remedies.

IGNATIA AMARA. *Strychnos ignatia.*

Synonym—Bean of St. Ignatius.

CONSTITUENTS—

Strychnine, brucine.

PREPARATIONS—

Specific Medicine Ignatia. Dose, from one-sixth to one half minim. Prescribed from five to fifteen drops in four ounces of water, a teaspoonful every two hours.

Fluid Extract of Ignatia. Dose, from one to ten minims.

Tincture of Ignatia. Dose, from five to twelve minims.

Physiological Action—The remedy presents the peculiarities of *nux vomica* to a great extent. In its therapeutic action it is prescribed under much the same conditions, but is a milder remedy. It seems to have less nerve irritating properties and an efficient nerve tonic influence.

Specific Symptomatology—*Ignatia* is applicable if there is a tendency to **mental disorder**, with **suffocative hysterical symptoms**. Also where there is present the *globus hystericus* and nervous headache in feeble women with **sleeplessness**. It is applicable at the age of **puberty** during the establishment of the menses, also at the **menopause**, when the characteristic symptoms of nerve irritation are present. All the nervous symptoms are accompanied with weakness and general inappetence, where the patient considers her condition very serious, and her chances of recovery very slight.

Further symptomatology is dragging pains in the lower bowels, colicky pains with the menstruation, sexual frigidity, sterility, and impotence. Muscular twitchings of the face and eyelids, dullness of hearing depending upon the general weakness, and burning in the bottoms of the feet.

A prominent writer states that *nux vomica* and *ignatia* are not interchangeable, though chemically and botanically similar. *Ignatia* is primarily a spinal remedy. It seems to intensify the impressionability of all the senses. When the excitability is exhibited by anger, vehemence and irascibility, *nux vomica* is indicated.

When there is melancholy, with a tendency to weep, *ignatia* is indicated, and with the melancholy the patient hides his or her grief and nurses their sorrows, trying to keep them covered up. The patients sigh and weep, when alone, are very sensitive and easily irritated, but do not disclose their irritation. They have but little appetite, have considerable pressure on the top of the head, and are inclined to renew their grief over causes long passed.

In hysteria, these patients will alternately laugh and cry. The laughing becomes spasmodic, and there is cramping in the hands and chest. These cramps may be mistaken for convulsive paroxysms, especially as they may be followed by unconsciousness. But in these, it will be noticed that the spasms of the hands, will be readily relaxed on pressure or the patient will move the hand voluntarily. The patient recovers with long-drawn sighs. When the *globus hystericus* is alarming in this class of patients, give *ignatia*.

While it relieves all the above symptoms, it will also relieve the hiccough, the flatulent distention and disorders of the stomach and intestinal tract that are often present, with the above phenomena. It overcomes the pain of **intercostal neuralgia**, and the acute pain in the head common to many of these patients. The remedy has a soothing effect in all cases.

Therapy—Some hysterical women are troubled with **aphonia**, others with **amenorrhea** and in others the menses are replaced by a severe **leucorrhoeal discharge**. All these symptoms are benefited by *ignatia*. These patients are nearly all out of tone. The remedy is a vitalizer and nerve tonic, a restorer of nerve function. The patients are anemic, they have cold skin and cold extremities, and flabby inelastic tissues. There is lack of power of mental concentration. The patient is usually very forgetful.

Usually twenty drops of specific *ignatia*, in four ounces of water, a teaspoonful from four to six times a day will be a sufficient dose.

This agent is especially applicable to **hysterical females** with nervous weakness from **persistent uterine disorder**.

In **hysteria** the agent is given in small doses where the following specific conditions are present: Dragging pains in pelvis,

dysmenorrhea with uterine colic, sexual apathy, congestive headache, burning on the soles of the feet, reduced general strength. It will increase sexual desire.

In **nervous depression**, from whatever cause, *Ignatia* in small doses frequently repeated and persisted in will be found an important remedy.

Ignatia is suggested as an excellent remedy for **sighing respiration**. It acts upon the central nervous forces like *nux vomica*.

CAPSICUM

Capsicum frutescens

Synonym—Cayenne pepper.

CONSTITUENTS—

Capsiacin, Capsicin, volatile oil, resin and fixed oil.

PREPARATIONS—

Extractum Capsici Fluidum, Fluid Extract of Capsicum. Dose, from five to sixty minims.

Oleoresina Capsici, Oleoresin of Capsicum. Dose, from one to five minims.

Emplastrum Capsici, Capsicum plaster.

Tinctura Capsici, Tincture of Capsicum. Dose, ten to sixty minims.

Physiological Action—*Capsicum* is a pure stimulant, both local and general. In large doses it causes vomiting, purging and inflammation of the stomach and bowels, with dizziness, intoxication and feebleness of the nervous power. Locally applied, it is a powerful rubefacient. It produces rapid capillary determination of the blood to the part, and if taken into the stomach it promotes its own absorption and thus continues its further influence through the nerve centers. Belonging as it does to the solanaceae, its influence upon the nerve centers, although insidious and not in all its field of exercise readily distinguishable, is nevertheless active and most important, demanding its classification among the diffusible cerebral stimulants. It produces an increase of tone and a marked and comfortable sensation of warmth in the entire system, and a glow and sensation of increased nerve

influence and more active circulation.

The general or systemic influence is better obtained from the tincture or from the hot infusion, while local stomach or intestinal effects follow promptly upon the administration of the powder.

Its influence upon the circulation is more marked in its local than its constitutional or central effects, although it does influence general capillary tone. It increases the action of the heart only in extreme cases and in large doses. It barely increases the pulse beat, although it materially alters its character and it does not influence the appreciable temperature.

Specific Symptomatology—It is directly indicated in general enfeebled conditions, with impairment of nerve influence. In general atonic conditions, with relaxation of muscular fiber; in plethoric conditions and lethargic affections, with general impairment of tone, with deficiency of functional force, energy or activity—in these conditions, because of its local and general effects, it is markedly different from other stimulants.

The indications are **marked nervous depression**, tendency to capillary stasis; dry, harsh tongue, with brown coating; scanty and glutinous buccal secretion, tendency to tympanitic distension, cool extremities and gastric uneasiness. Furthermore with quinine in **malarial troubles**, with small doses of hydrochloric acid, excellent results have been obtained in **rheumatism** of malarial origin, coming on periodically.

Therapy—Its influence upon the nervous system is shown by the fact that in **general paresis**, and in some cases of **paralysis**, local and general of central origin, it has rapidly promoted cures without the use of other agents. In one case after passive cerebral congestion, it was given in strong infusion, and the tincture applied to the paralyzed arm and muscles, and restoration of nerve influence followed in a few days with a generally improved condition of the nervous system.

It certainly deserves a more extended use in these cases, because of the possibility of its being pushed to the extreme without danger of disturbance of function or structure, or impairment or derangement of any organ. It is a harmless agent, however used; if concentrated, local

irritation should be avoided.

It has long been combined with tonics, stimulants and general restoratives in seriously impaired nerve tone of the **dipsomaniac**, with results which were ascribed to other agents used. It has an influence in these cases which resembles that of strychnine, and yet is quite unlike it although fully as important.

In **delirium tremens** it produces a sedative influence, which results in quiet, rest, and frequently in deep sleep.

In these cases it is best in hot infusion combined with warm beef-tea or other hot nutritious liquid food. If its use be continued it will replace the alcohol, and in its satisfaction of the unnatural demands of the stomach, will enable the patient, with proper adjuvants, to permanently overcome the taste for liquor. It must be given in conjunction with persistent and concentrated nutrition, and may be combined with hydrastine or strychnine or other nerve stimulants and tonics.

It is also of much service in the treatment of the **opium** and morphine **habits**, and also that of cocaine. It must be pushed to the extreme limit and any local irritant influence avoided.

In **languid** and **enfeebled** states of the **stomach**, with inactivity of the peptic and other glands, whatever the cause, it is an immediate and direct stimulant. In **atonic dyspepsia** and flatulent colic, in atonic inactivity of the liver and other glandular organs which have a part in the stomach and intestinal digestion, its influence is immediate and most important.

It is a common ingredient of pills and laxative granules, and it certainly improves the capillary circulation and nerve tone of the entire intestinal tract.

In the stage of collapse of **prostrating diarrheas** and of exhausting fevers and in **cholera**, no agent is more efficient. It is useful in yellow fever, in typhus and in some cases of typhoid where there are great relaxation and muscular weakness, where there are sluggishness of the nervous system, torpor and insensibility, low **muttering delirium** and tendency to coma.

In relaxed and **enfeebled** conditions of the **pharynx** and post-nasal membranes, in engorged sore throats not always accompanied with active inflammatory symptoms, it will sometimes cure when other agents have signally failed. This is especially true if there be a granular condition, with dark colored membranes, or if there be a purple or discolored hue to the mucous membranes, common in some long continued sore throats. It is a valuable adjuvant in the treatment of **diphtheria** and in **phlegmonous tonsilitis**, with sluggish circulation, and also in the sore throat of scarlet fever. In these cases it may be used as a gargle and taken internally also. A most serviceable general gargle is made by combining in strong infusion, *capsicum* and *white-oak bark—quercus alba*—and adding to it an active antiseptic, as boric acid or *echinacea*. This can be given for sore throats when no opportunity for specific diagnosis is afforded.

In its general stimulant effect this agent is a valuable one in combination with quinine in intermittents, and also when the latter agent is given as a tonic and restorative. They act most harmoniously in conjunction, and the influence of the quinine is greatly intensified. It is safe to say that one grain of *capsicum*, combined with three grains of quinine, will produce better **antiperiodic** effects than ten grains of quinine would accomplish uncombined in extreme cases of ague, especially if accompanied with general torpor and inactivity of the liver and of the nervous system, as in **malignant intermittents** and pernicious fever.

The old **Thompsonian No. 6** is made by combining *myrrh* two ounces, *capsicum* half an ounce, and dilute alcohol two pints. Of this, from five drops to a dram may be given at a dose, and it produces a most profoundly stimulating influence. It was the main dependence of Samuel Thompson.

The old antispasmodic combination known as the **Compound Tincture of Lobelia and Capsicum**, unfailing with many of the old doctors as an antispasmodic and general relaxant, is made of *lobelia*, *capsicum* and *skunk cabbage* root two ounces, alcohol two pints. It may be made extemporaneously by combining equal parts of the tinctures of the remedies. It is given in from ten drops to one dram, and was relied upon in all **spasmodic affections**, including puerperal eclampsia and tetanus.

Capsicum is advised in chronic **parenchymatous nephritis**, in pyelonephritis and in pyelitis. Also in **spermatorrhea**, with general relaxation of muscular fiber and in impotence. It is an aphrodisiac of some power. It may be combined with phosphorus or *nux vomica* in the treatment of **impotency**. It is eliminated from the system through the medium of the kidneys, which it stimulates to increased action. It may produce urinary irritation and tenesmus.

It is used somewhat externally in the form of plasters, embrocations or in liniments, but it is rather slow in its action upon the skin and is replaced by more active agents. It is a valuable agent, however, in the treatment of chilblains, exceeding other better known remedies.

ZANTHOXYLUM. *Zanthoxylum americanum.*
 Zanthoxylum clava-herculis.

Synonym—*Xanthoxylum*, Prickly ash.

CONSTITUENTS—

Zanthoxylin, volatile oil, resin, bitter principle, tannin, sugar.

PREPARATIONS—

Extractum Zanthoxyli Fluidum, Fluid Extract of Zanthoxylum.
Dose, from half a dram to one dram.

Specific Medicine Zanthoxylum. Dose, from five to six minims.

Physiological Action—This agent is a stimulant to the nerve centers, and through these centers it increases the tonicity and functional activity of the different organs. It is diffusible, producing a warm glow throughout the system and nervous tingling, as if a mild current of electricity was being administered.

It has a direct tonic effect upon the heart, and it mildly stimulates the capillary circulation throughout the entire body, overcoming blood stasis and congestion. In diseases of an exanthematous character it causes the rash to appear promptly and prevents its recession. It will sustain the vital forces through any crises that may occur.

Zanthoxylum in certain lines acts similarly to strychnine; in others it is superior to strychnine, having a wider action. In its effects on the

capillary circulation it resembles *belladonna* or atropia, without the toxic properties. It must be well known to be thoroughly appreciated.

Specific Symptomatology—It is a specific when there is lack of tone in the nervous system—a general torpidity with sluggish circulation; in enervation and relaxation of mucous membranes, with imperfect circulation, or hypersecretion. It is thus valuable in catarrhal conditions of any mucous surface, as it restores the tone and normal functional activity.

In all conditions of the bowels where tympanites is present it is specific, quickly relieving this condition. King used it extensively in the cholera epidemic of 1849 with excellent results.

Therapy—It is a remedy for **catarrhal gastritis**. In general atonic conditions of the digestive apparatus, combined with *hydrastis canadensis*, it has no superior. It has a powerfully tonic influence upon the stomach and digestion, and improves the general nutritive functions of the system. Whitford gives it as a **tonic** in all conditions of **weakness**, depending upon malnutrition, accompanied with **chronic dyspepsia**, especially if catarrhal gastritis be present. The following is his method of combining the remedy:

Rx—Powdered *hydrastis*, two drams; precipitated carbonate of iron, one dram; tincture of *zanthoxylum*, one-half ounce; simple elixir, sufficient quantity to make four ounces. Take a teaspoonful after meals and at bedtime. The writer has used a similar combination, the active constituents in a capsule, every three -hours with most excellent results. This formula is especially applicable as a restorative after **debilitating fevers** and after prostrating diarrheas, or after dysentery. It works promptly and satisfactorily with children. The alkaloid hydrastine may be substituted for the powdered *hydrastis*, where prescribed in capsules.

This agent, with the older practitioners, was considered a most valuable remedy in **rheumatism**. Its stimulating diaphoretic action, with its restorative and tonic influence, placed it high in the estimation of many as a remedy in this condition. It is valuable in combination with such remedies as *colchicum* and *cimicifuga*.

As an alterative it had a wide use at one time. It was usually combined

with *stillingia*, *yellow dock* or *phytolacca*, and often the iodide or acetate of potassium was added. It serves an excellent purpose in **scrofula**, and in some cases of chronic skin disorder, from disordered blood.

SUMBUL. *Ferula sumbul.*

Synonyms—Sumbulus moschatus. Musk root. Jatamansi.

CONSTITUENTS—

It contains an aromatic resin, a volatile oil and angelic acid.

PREPARATIONS—

Fluid extract, dose ten to sixty minims.

Tincture, dose one to thirty minims.

Therapy—This remedy is a pure, stimulating nerve tonic. It seems to invigorate the nutritive functions of the system. It has been recommended during the progress of **low fevers**, where the nervous system is greatly debilitated, as in **typhus**, **typhoid** and **typho-pneumonia**. Wherever the nervous system has received the effect of a protracted prostrating disease, it can be given with advantage. Murawieff advised it in both acute and chronic **pulmonary disease**, through its influence upon the nervous system. Probably it influences the circulatory and respiratory functions, supporting them under the strain of protracted inflammation. The remedy has been used in stomach disease, **diarrhea**, in **dysentery**, and in **cholera**. When the nervous system is enfeebled in **hysteria**, and in **delirium tremens**, it is a good remedy. In **chlorosis**, **anemia** with nervous phenomena, in **leucorrhoea** and **gleet**, it is to be advised.

GROUP I.
Agents Acting on the Nervous System.

DIVISION II.
Stimulants and Excitants.

CHAPTER II.
Alcoholic and Anti-malarial Stimulants

THE ALCOHOLS
WINES AND MALT PRODUCTS
CINCHONA
QUININE
ALSTONIA
EUCALYPTUS

THE ALCOHOLS.

Alcohols chemically considered, are a class of substances of organic origin, known as hydrocarbons, isomeric in character, belonging to a simple homologous series. They are the hydrates of the methyl group of organic radicals. Those best known and in common use are constructed as follows:

CH_3HO Methylic Alcohol. Synonym: Wood Alcohol.

$\text{C}_2\text{H}_5\text{HO}$. Ethylic Alcohol. Synonym: Rectified Spirit of Wine.

$\text{C}_3\text{H}_7\text{HO}$. Propylic Alcohol.

$\text{C}_4\text{H}_9\text{HO}$. Butylic Alcohol.

$\text{C}_5\text{H}_{11}\text{HO}$. Amylic Alcohol. Synonym: Fusel Oil.

Alcohol.

Alcohol proper, as commonly understood, is the second in the series—Ethylic Alcohol.

Synonyms—Spiritus Vini Rectificatus, Rectified Spirit of Wine. Alcohol Ethylicum, Ethylic Alcohol. Ethyl Hydrate. Vinic Alcohol, Spirit of Wine.

Under this head all substances containing alcohol are treated in a general sense. Specific substances will receive specific mention. The common forms of alcohol and of spirituous and malt liquors come under the following general or specific heads:

Absolute Alcohol, Dilute Alcohol, Deodorized Alcohol, Whisky.

Synonym: Spiritus Frumenti.

Brandy.

Synonym : Spiritus Vini Gallici.

White Wine.

Synonym: Vinum Album.

Sherry Wine. Red Wine.

Synonym: Vinum Rubrum. Port Wine. Rum, Gin, Porter, Cider, Kumyss.

Description—Alcohol is a light, colorless, transparent, volatile liquid, with a sharp irritating taste and a spirituous odor. It is lighter than water, its specific gravity being only 0.80. It boils at 173 deg. Fah., and will freeze at 203 deg. Fah. It has a great affinity for water, mixing with it in all proportions.

Alcohol is an active solvent, dissolving solids of many kinds—alkaloids, resins, gums, oils, liquids, gases, etc. It destroys vegetable and animal tissues. It preserves animal tissue from decomposition by hardening, condensing and contracting its structure. It coagulates its albuminoids.

Alcohol Absolutum—Absolute alcohol is the pure alcohol, without water or other foreign substance. It is rarely obtained. That which is purchased for absolute alcohol contains at least two per cent of water. Alcohol U. S. P. contains ninety-four per cent of the absolute.

It has a specific gravity of 0.82. The rectified spirit of wine—*spiritus rectificatus*, Br. P., contains eighty-four per cent of the absolute alcohol.

Alcohol Dilutum—Dilute alcohol, U. S. P., contains fifty-four per cent of the absolute. This is about the same as the proof spirit of commerce. In its official form it is made by combining equal volumes of water and absolute alcohol.

It is an excellent solvent, dissolving many substances insoluble in water. Medicinal substances dissolved in alcohol are called tinctures. Gaseous and volatile substances so dissolved are called spirits.

Alcohol Deodoratum—Deodorized alcohol contains about 92.5 per cent of alcohol and 7.5 per cent of water. It is free from methyl or amyl alcohol, other foreign odors or organic impurities.

Physiological Action—Because of its immediate and profound influence upon animal tissues, alcohol undiluted is not used internally. A small quantity taken in this form has produced immediate death. It is a powerful irritant and produces a shock from overstimulation to which the nervous system speedily succumbs. There are profound muscular relaxation, a sudden fall in the temperature, and diminished respiration. There is central vaso-motor paralysis, which influences these functions, with direct depression of the action of the heart.

In small doses it acts as a prompt and general stimulant to every function of the body. There is an exalted sensation a feeling of exhilaration, and a rise in the temperature and pulse rate that is not merely subjective, but actual and appreciable.

Its direct influence is upon the nervous system. It increases at first the normal functional operations of the brain, inducing a free flow of thought and expression, and a clearness and freedom of mental action without depth. This condition is rapidly increased until the harmony of action is lost and an extreme or exaggerated condition follows, which soon becomes a pronounced disorder of mental action, with incoherent and incoordinate irregular action of the mind and body.

These effects are more pronounced in one not habituated to its use. Its continued use produces a toleration which often becomes extreme, but it induces a permanently debilitated and diseased condition of the nervous system, with a long train of symptoms known as alcoholism or dipsomania.

Acute Intoxication—In the first stage there is a want of mental balance, perversion of intellect, hallucinations, emotional excitement and incoordination.

In the second stage there are dilated pupils, stertorous breathing, more or less complete insensibility, a condition of coma, slow full pulse, complete muscular relaxation and great depression of the mental and physical faculties, with headache, nausea and vomiting. Recovery of the normal functions is in reverse order of their perversion.

Chronic Alcoholism—In this condition the power to resist fatigue or the results of injury, or to recuperate from prostrating diseases, is greatly lessened. There is established a gastro-intestinal catarrh of a chronic character, with dilatation of the stomach often, which results in nausea, vomiting, anorexia and a confirmed dyspepsia. The integrity of the liver, kidneys and heart become greatly impaired, and fatty degeneration of these organs is common. The nervous system suffers greatly. There are serious lesions of the structure of the spinal cord, brain, and also of the neural structure in its distribution, resulting in faults of vision, neuralgias, paralysis agitans and milder forms of muscular tremor and muscular incoordination. The heart and circulatory apparatus are seriously involved. There are palpitation, dilatation with valvular incompetency, and atheroma, of the blood vessels. The arterial tension is so influenced that the functional action of all organs, especially that of the kidneys, is greatly impaired.

Its continued use fixes a habit or demand upon the individual which is imperative, and the satisfaction of which induces a mental and moral degradation exceeded by the use of no other agent with the one exception, perhaps, of cocaine alone.

There is anorexia in many cases, complete dyspepsia and mal-assimilation of food. Ultimately there is atony and permanent dilatation of the stomach. There is disordered liver which in time becomes organic, resulting in atrophy or hypertrophy, induration, fatty or amyloid degeneration, or at least extreme torpor with jaundice.

Cancerous conditions and other blood dyscrasias readily find a nidus in these depraved tissues. Permanent structural intractable kidney change occurs more often with this class of patients than in any other. There is diabetes mellitus, parenchymatous or interstitial nephritis, or amyloid degeneration. It quickly produces alteration of function of the nervous system—a form of neurasthenia, structural change, and in some cases paralysis and locomotor ataxia and general incoordination.

The most lamentable condition, however, is the paralysis of the will, and the inevitable moral degradation and intellectual failure, which results finally in imbecility.

Alcohol interferes with the elimination of carbonic acid, and lessens the amount of nitrogenous tissue waste in the system. It is impossible to accept the theory of Wood, that because of the stimulating influence of this agent upon the digestion of the nitrogenous products, there is better assimilation and less nitrogenous waste. The nitrogen, if received, must at some time be eliminated, if not as a food, then certainly as tissue waste. Alcohol, doubtless, interferes with the secretory function of the epithelium of the renal tubules and also materially alters blood pressure in the kidneys, and thus prevents the elimination of urea which remains in the blood.

Dr. Winfield Scott Hall says: "Alcohol is an **excretion toxic** to the organism that produces it. An excretion of this type is also toxic to higher organisms, and this is the case with alcohol.

"Admitting that it is oxidized in the liver and produces heat, and that it may lead to decrease in the catabolism of carbonaceous foods, the heat produced is not a normal catabolism, but is simply the result of an insufficient protective oxidation, the toxic action showing in its narcotic effects.

"The decreased metabolism of carbonaceous and nitrogenous foods following the ingestion of a narcotic is a universal fact depending on the drug effect and giving to the oxidized narcotic **no significance as a food**. Ethyl alcohol **is not a food** in the scientific significance of the word."

Alcohol is appropriated to a certain extent within the system, the atoms within its molecule are rearranged or appropriated by different chemical substances in different combinations. This appropriation, however, is not great, especially in health, but in extreme prostration it is much greater, and there has seemed to be a gain in weight from its use. It is absorbed to a certain extent by all absorbents, and is eliminated by the skin, kidneys and lungs. In confirmed alcoholics the ingestion exceeds the elimination to such an extent, that it is found in the fluids of the brain and of the cord, and its odor is perceptible in other fluids and tissues of the body.

When applied to the skin there is a sensation of coolness because of the rapidity of its evaporation and absorption of heat. If it be retained in contact with the skin and the air excluded it produces heat, irritation, redness and consequent inflammation.

Its hardening influence on the integument is induced by its ability to coagulate albuminoids, abstract water and dissolve fats.

Therapy—Alcohol is introduced into the system through the medium of wines, brandy, whisky, beers, etc., as the diluted alcohol is not used to any extent as a beverage. In its therapeutic range the field is an important one, although many of the very best known physicians—Dr. N. S. Davis and others—believe that it is not needed as a medical agent, but can be substituted to even a better advantage by agents which do not induce the alcohol habit. We believe that it is entirely unnecessary to prescribe as tonics or restoratives, wines, beer or any alcoholic beverages, or the alcoholic beverages under fashionable names, as malt tonics manufactured by brewers, or the fashionable tippie—beef, iron and wine. It will act as follows, but can be readily substituted.

As an emergency remedy, alcohol, as an immediate stimulant, exercises an important function. In **heart failure** from **sudden shock**, in acute **prostration** of any character evidenced by weak heart, slow pulse and failing respiration, it is used. In **asphyxia**, either from the inhalation of noxious gases, or from the use of anesthetics or from drowning, hypodermics of brandy or whisky will enforce the heart's action, restore respiration and improve the general condition. It is of common use in shock after surgical operations, but is best used in conjunction with heart supporters and strychnine. It is given **preceding** the administration of **anesthetics** to prevent shock. It promotes the action of the anesthetic. In poisoning with depressing agents of a non-caustic or non-irritating character, and in the **bites** of **venomous snakes** and insects, it is of value and has been in common use.

With the aged and feeble, in the convalescence of **prostrating diseases** of all characters, and especially after inflammation of the lungs, the agent was in the past in common use as a restorative. It is a stimulant to the digestion and to the secretion of the digestive ferments. Its influence upon absorption and nutrition is not, we think, as desirable

as that of other tonics non-alcoholic in character.

As a restorative to adynamic conditions it is given to best advantage in conjunction with concentrated nutritious foods, as in egg-nog, with eggs and milk, with albuminoids, and with beef juices and meat extracts.

In some cases of prostration with distress and even pain, great restlessness and wakefulness, small, frequent doses, by building up the forces temporarily more nearly to the normal point, produce quiet restfulness and promote sleep. In **cerebral anaemia** its influence in temporarily re-enforcing the cerebral circulation will promote sleep, but the results of the sleep usually are not rest and are unsatisfactory.

Alcohol, externally, is an antiseptic. It is especially useful in suppurating **wounds**, and especially in preventing and curing **bed sores**. It is cleansing and stimulating, and promotes granulating and healing. In preparing for surgical operations it is used in full strength as an application to the skin to render it aseptic in the field of the operation.

In bruised and swollen parts, in inflamed joints and glands, it serves a good purpose. It hardens the skin and contracts the tissue, promoting healing by resolution and preventing abrasion, ulceration or suppuration.

It is prescribed in **vomiting from atony**, in the **vomiting of pregnancy**, in seasickness and in the vomiting of extreme prostration. It is even thought necessary to administer it to allay the uncontrollable **vomiting of delirium tremens**. It is advised in disorders of the stomach and bowels, in atonic, gastric and intestinal indigestion.

An excellent use for alcohol is in the **sudden hoarseness** or **croupal cough** of children, as an external application, mixed with an equal part of water and kept moist and warm. It is surprising how quickly the child will breathe more easily, and the hoarseness will have disappeared. It is of immediate benefit in sudden attacks of the croup.

During the past few years much use has been made of hypodermic injections of alcohol into the structure surrounding **cancer** and malignant growths, and into the immediate substance of the growth

itself, with the result that in many cases the abnormal growth has at least been retarded and in some cases removed. The method is considered one worthy of trial in a certain class of cases.

Wines and Malt Products.

Therapy—While wines are consumed in all civilized countries, they are seriously detrimental to health. They induce plethora, gout, lithemia and apoplexy, dropsy, unsteady nerves and enfeebled and disordered mental action. In the consideration of wines as medicinal agents, their action is fully covered under the subject of alcohol, as their medicinal effect in the main is due to the amount of alcohol they contain. It is true, however, that there is considerable difference in the action of different wines. They have more of a sedative influence upon the stomach, and probably possess greater nutritive properties. They are less stimulating than the liquors, but containing a larger quantity of sugar, their free ingestion induces greater disorders of the stomach, and is apt in some cases to produce constipation and fever.

In their application, however, to specific disease conditions, they must be adapted with regard to the percentage of alcoholic strength, and with consideration to the percentage of nutritive properties.

Beer, ale and porter are malt products, and as stomachic tonics, as restorative agents, especially in pulmonary diseases, as stimulating nutritive agents for administration during recovery from protracted illness, they are considered as of much value.

CINCHONA.

Cinchona, Calisaya.

Synonyms—Peruvian bark.

CONSTITUENTS—

Quinine, Quinidine, Cinchonine, Chinchonidine, Quinamine, tannic acid; thirty-two natural and eight artificial alkaloids, resinoid, volatile oil, gum, sugar and wax.

PREPARATIONS—

Extractum Cinchonae, Extract of Cinchona. Dose, one to five

grains.

Extractum Cinchonae Fluidum, Fluid Extract of Cinchona. Dose, ten to sixty minims.

Specific Medicine Cinchona. Dose, one to thirty minims.

Quinine.

The pure alkaloids of *cinchona* are not employed in medicine, but their salts, formed from acid and basic combinations, are in common use.

In the consideration of the therapeutic properties of the various alkaloids of *cinchona* there is but little difference observed in their action. There is almost no influence exercised by any one of them that is not exercised to an equal extent by quinine, and except where otherwise specified, the Sulphate. of Quinine is the agent here considered.

Quinine Sulphate.

Dose, one to twenty grains.

Physiological Action—In doses of five grains three or four times a day for a few days, it produces fullness of the capillary circulation of the brain, throbbing in the head, suffusion of the face, ringing in the ears, with dullness of hearing, headache, mental confusion and nervous excitement. If the above doses be given every three hours continuously there is muscular feebleness, with general impairment of motility, increasing debility, great restlessness, with wakefulness, dilated pupils and partial loss of sight.

A single dose of sixty grains of quinine sulphate, given to an adult male caused extreme depression, with feeble circulation, coldness of the surface and extremities, respiration slow and sighing; pulse slow and almost imperceptible, pupils widely dilated, sight and hearing almost extinct, voice very feeble; thirst great, tongue pale and moist, breath cold. While in some cases blindness from quinine has continued for some time in no case has it been permanent. Quinine has produced deafness also, which in many cases has been permanent. In some cases death has followed the administration of the remedy in disease, a result fairly attributed to the drug. In small doses it is tonic, in large doses stimulant, and in still larger doses sedative, acting on

the cerebro-spinal nervous system and through the ganglionic nervous system on the heart. Besides the above named effects, large and repeated doses may cause gastric irritation, eructations, chill and fever paroxysms headache, perspiration, vertigo, staggering and delirium—the condition known as cinchonism.

Specific Symptomatology—Quinine will act favorably upon the system if the skin be soft, if the mucous membranes of the mouth are moist, and if the tongue is moist and inclined to clean, if the pulse is full and soft and the temperature declining or at normal. In other words, when the secretory functions of the body are in a working condition, quinine will produce no unpleasant results.

Quinine is specifically an antiperiodic. It will overcome malarial periodicity, especially if the above named conditions are present when the agent is administered.

It is profoundly tonic; under limited conditions it is antipyretic and also antiseptic. It has specific oxytocic powers over the parturient uterus.

Quinine destroys the **plasmodium malariae** readily, even in the minute quantity of one part to twenty thousand of water. Its influence upon malarial conditions can thus be readily understood.

Therapy—In the administration of quinine as an antiperiodic, the beneficial influences are not altogether in proportion to the size of the dose. Enormous doses may abort a chill if given during its course, or during the course of the fever. They are very likely, however, to increase the nervous erethism and the temperature; whereas, if proper doses be given **during the intermission**, from one to three hours preceding the anticipated attack, or at the time when the temperature has reached **its lowest point**, small doses will accomplish positive results.

In **continued fever**, with a sufficiently marked remission occurring at a given time each day, or on each alternate day, the agent should be given during the remission, provided the temperature declines to a point sufficiently low to admit of a temporary restoration of the suspended secretions. This point is usually not above 100 ¹/₂ degrees. If the remission be short, a single dose may be given. As a result the

temperature does not run quite as high as on the previous day, and the next remission is more marked and of longer duration. At this time, perhaps, two full doses, two hours apart, may be given. The fever is still lower and the remission so marked by the third day that the agent, in reasonable doses, may be continued through the exacerbation, the temperature at no time, probably, rising above 101 degrees and not increasing above normal after the third day.

The writer has adopted this course for so many years, with perfectly satisfactory results, that the method is confirmed in his mind as the proper one in all cases where malaria is the cause,

Where continued fever exists, quinine is of no benefit if there is no marked remission or other evidence of malaria. It is thus of no use during the progress of typhus, typhoid and other protracted fevers. In such cases it causes nerve irritation and increased temperature, especially if there is deficient secretion.

When the fever is broken and there is a tendency toward a restoration of secretion, and the temperature is normal or subnormal, then this agent is a vitally important one. Here the bisulphate, being readily absorbed, produces the happiest results.

In **intermittent fevers** it is excellent practice to give the remedy in broken doses during the intermission. The absorption of the sulphate of quinine takes place so slowly that a period of between four and six hours is required, under favorable circumstances, to develop the full effect of the remedy. A dose of from three to five grains, given five hours before the expected paroxysm, will exercise its full influence upon the paroxysm when it should appear.

If another dose of two and one-half grains be given two hours after the first dose, and a third dose of the same size be administered after another period of two hours, or one hour before the chill will occur, the effect of the agent will be uniformly continued during the time in which both the chill and the fever would have reached their highest point. The repetition of this course on the second and third days will usually be sufficient to overcome the most severe cases. It is well to adopt the same course on the seventh, fourteenth and twenty-first days following the attack.

The following formula is of excellent service in those cases in which the liver and other glandular organs have been profoundly influenced by the disease, and where the nervous system shows considerable depression:

Rx— Quiniae Sulphat, xl grains.
Leptandrin, iv grains.
Capsici pulv, vi grains.
Fill into: Capsules, no. xii.

Sig. One capsule in the manner above specified every two hours until three are taken. When the paroxysms no longer appear, two or three grains of quinine may be given regularly every three hours during the day.

In the treatment of **congestive chill**, and in malignant conditions of malarial origin, quinine is specific, but should be given in much larger doses, and usually with some direct stimulant and in conjunction with the use of external heat. It may be given in doses of twenty grains preceding the attack, or with stimulants during the attack. If a severe attack is fully anticipated, large doses should be repeated every two or three hours during the entire remission.

As an **antipyretic** quinine is no longer used. It was once considered of essential importance in the reduction of high temperatures, but the conditions and character of its action were so imperfectly understood that it often did harm, and caused an increase in the temperature instead of a reduction. In the regular school the coal tar antipyretics have replaced it. With our own school it has been at no time depended upon to allay fever.

As a restorative after **pneumonia**, where hepatization has been extensive, this agent is an important one. Two grains of the bisulphate of quinine, with one-fourth of a grain of *ipecac*, and perhaps the one-fourth of a grain of *nux vomica*, will rapidly improve the function of the nervous system and of the circulation, and as rapidly overcome the hepatization and other results of inflammatory action. The influence upon the stomach and intestinal canal, and thus upon the digestion and assimilation of food, is marked and immediate.

Quinine is a stimulant tonic of great value. Its influence is exercised

to the best possible advantage when there is impaired or deficient nerve force.

It is indicated as a restorative after prostrating disease, especially after continued and inflammatory fevers. It strengthens the action of the heart, improving the character of the circulation of every organ. It arouses the digestive organs and encourages assimilation and nutrition. It stimulates the liver and kidneys, and thus assists in the rapid elimination of the waste products of the disease. It stimulates the respiratory function, promoting oxygenation of the blood, thus assisting in the restoration of the character of that fluid.

These results are accomplished largely through its profoundly stimulating influence upon the cerebral and spinal centers.

It has been the writer's custom to use the bisulphate of quinine as a tonic instead of the sulphate, because of its free solution and rapid absorption. It is milder in its effects upon the nerve centers and fully as efficacious in its tonic influence. It is combined to excellent advantage with hydrastine, *nux vomica* or the salts of iron.

Or it may be given with strychnine or picrotoxin or *ignatia* with excellent results, and if liver complications exist, it may be combined with leptandrin, podophyllin or *iris*.

In chronic **congestion** of the **liver**, or **splenitis**, quinine dissolved in the tincture of the chloride of iron, and combined with syrup of *orange* or simple elixir, produces satisfactory results.

In the prostrating **night sweats** following malarial fever this agent, in the above combination, is a fine tonic, quickly overcoming the sweating and other results of the disease.

Where **paludal miasm** is the cause of various indefinite disorders, or of general malaise, the phenomena occurring periodically, quinine should be given to anticipate the unpleasant symptoms. **Dumb ague**, **hemicrania** and severe general headaches, **neuralgias** of various kinds and **asthmatic attacks** occur from this cause and are satisfactorily treated with this remedy. It may be afterward given as a tonic, in combination with any other tonic agent which may be specifically indicated.

Quinine has a direct power in inducing **contraction** of the parturient **womb**, especially if from inefficient strength the labor has been prolonged until the nervous force of the patient is well nigh exhausted. If fifteen grains be given in one dose, it may overcome all undesirable conditions at once and prove sufficient. The contractions are normal in frequency and of regular character and force.

It thus overcomes inertia and will prevent post-partum hemorrhage. It is a good remedy for this latter condition when it has occurred, acting also as a stimulant to the heart and nervous system. It is a dangerous remedy in large doses during pregnancy, as it may bring on premature labor.

In **amenorrhea**, from cold it is useful and may be prescribed alternately with **aconite**, after a hot bath has started secretion from the skin.

As a stimulating antiseptic it has been used as a wash in very many conditions. In sluggish ulcers and old sores, where there is no activity to the capillary circulation, it may be applied with good results. It is useful in threatened gangrene and in chilblain. It was at one time extensively used as a throat wash in diphtheria, and to its antiseptic character is credited its beneficial influence upon whooping cough, having been much depended on for the cure of that disease.

A douche made by dissolving six or eight grains in a pint of hot water will be found of service in chronic catarrh, with fetid discharge, and in hay fever. In the latter condition, full doses internally, three times a day, will materially improve its local influence.

In the administration of quinine to children in all but the severest of malarial conditions, it may be given by inunction, and all of the results of internal use will be thus obtained. The soft skin of the chest, axillae, abdomen or groins is bathed with hot water and quickly dried, and the ointment immediately applied. From three to five grains of the sulphate is thoroughly rubbed into two drams of lard, and the whole applied during the early part of a remission or intermission. The course must be repeated on consecutive days for four or five days. If the fever is then broken or the chill does not occur, the application can be made regularly once in eight or twelve hours, using less quinine, and continued as a tonic as long as a tonic is needed. No one will

administer quinine per os to infants who has used this method successfully.

ALSTONIA.

Alstonia constricta.

Synonyms—Australian fever bark, Bitter bark, Alstonia bark.

CONSTITUENTS—

Several analyses have been published, which vary somewhat. Alstonine, an amorphous alkaloid, is present in all. Alstonidine and porphyrine are also found.

PREPARATIONS—

The **powdered bark**, dose from two to ten grains.

The **tincture**, dose from ten to sixty minims.

Specific alstonia from two to twenty minims.

Specific Symptomatology—General malarial cachexia, periodicity, fever with marked intermissions or remissions. Malarial fever, with exacerbations. General atony of the glandular organs, with sallow skin, heavily coated tongue and constipation.

Therapy—This remedy was brought to the notice of the profession by Dr. John M. Scudder. He regarded it superior in its tonic and restorative properties to *calisayabark* in certain specific conditions. His indications were as follows: The tongue inclined to be dirty, skin dark and sallow, the urine depositing a sediment, with a general lack of tone.

When the above conditions are present from malaria, it is directly indicated.

It is an antiperiodic, when persisted in, in chronic cases, but for immediate effects, in acute cases, it does not replace quinine. Dr. John Fearn advises it where there are **gastro-intestinal** disorders, depending upon chronic malaria, such as **atonic dyspepsia**, **lienteric diarrhoea**, and **dysentery**. In these chronic cases, it will sometimes succeed when quinine fails. It is well to prepare the patient for its use by a hot bath, and a diaphoretic. It is a cerebrospinal stimulant and tonic. It acts directly upon the great sympathetic nervous system and stimulates the

vital forces, through the improvement of every organic function. It improves the blood-making processes and assists in more perfect elimination by increased tonicity. Dr. King reported the cure of obstinate cases of **tertian fever**, attended with attacks of severe **gastric pain**, and irritability, with **neuralgia**, in the upper extremities. It seems to antagonize the malarial influences and to so completely destroy the malarial plasmodium that the condition is permanently cured.

EUCALYPTUS. *Eucalyptus globulus.*

Synonym—Blue-gum tree of Tasmania.

CONSTITUENTS—

A volatile oil, Chlorophyll Eucalyptol, resin, tannin, etc.

PREPARATIONS—

Extractum Eucalypti Fluidum, Fluid Extract of Eucalyptus. Dose, ten to sixty minims.

Specific Medicine Eucalyptus. Dose, five to thirty minims.
Oleum Eucalypti,

Oil of Eucalyptus. Dose, two to twenty minims.

Eucalyptol is the product of the distillation of the oil of *Eucalyptus* at a high temperature (347 degrees Fah.). It is identical with a substance found in *cajuput*, *mentha*, *rosemary*, *curcuma*, *santonica*, and some others. It is a colorless liquid, crystallizes, when reduced to a low temperature, in long needle-shaped crystals. It has an aromatic, camphoraceous odor and a cooling, pungent taste. It is soluble in alcohol and in glacial acetic acid, and should be kept in dark-colored glass bottle with ground-glass stoppers in a cool place. The dose is six to ten minims, in a capsule or emulsion, four times daily.

Physiological Action—In overdoses **Eucalyptus** produces drowsiness with a loss of muscular power, cold skin, pale lips and cheeks, feeble pulse, short and irregular breathing and contracted pupils. It produces increased action of the kidneys, pain in the stomach and bowels, indigestion and diarrhea. It is eliminated through all the emunctories. The inhalation of the vapor of too large a quantity of the oil has produced the nervous phenomena above described in children, but this result is rare.

After a moderate dose of the **oil of Eucalyptus**, in which its chief virtues reside, there is a feeling of exhilaration and buoyancy, while after very large doses there is depression, with drowsiness, loss of power in the limbs, skin pale, cold, insensible; pupils contracted, pulse imperceptible, breathing short, jerking and interrupted.

Poisoning by *eucalyptus* from taking a dram of the oil exhibited the following symptoms which developed very slowly: There was vomiting, and abdominal pain, which occurred in about four hours; diarrhea became marked, and in an hour later the boy became drowsy, semi-comatose, pale, collapsed, with small pulse, muscles generally relaxed, pupils medium sized and equal to some response to light; breathing shallow. Other than these the symptoms resembled *opium* poisoning, and the coma persisted several hours. There was an absence of nervous irritation, but the gastro-intestinal symptoms were marked. The agent seemed to inhibit the influence of the cerebrum. There was the odor of oil on the breath for three days.

The poisonous effects should be treated with the usual diffusible stimulants strychnia, alcohol and atropine.

Therapy—In therapeutic action this agent closely resembles *cinchona*. It is antimalarial, antiperiodic, febrifuge and tonic. The tree has been planted in malarial sections, and wherever planted the malarial conditions have been changed, the disease germs destroyed and the atmosphere purified, the locality becoming healthful and sanitary.

While acting similarly to quinine it may be prescribed where quinine is contraindicated. Its stimulating and antiperiodic influence is not so immediately marked, but its antimalarial influence is persistent, and satisfactory results are ultimately obtained, which can be said also of its antiseptic influence.

It may be given in **low forms of fever** where the stimulating influence of quinine is too great, increasing the fever. In these cases *eucalyptus* will reduce the fever.

In the condition known as **dumb ague** and masked intermittent fever, it will sometimes accomplish very satisfactory results. In all conditions where there may be malarial infection, especially where other disease

is present which shows a marked increase at a given time each day, where there is much malaise and muscular aching or distress of a distinctly periodical character, this agent is directly indicated in doses of one-half dram of the tincture.

It is of much service in malarial neuralgia, in malarial headache and in vague intermittent conditions of an indefinable character.

Where night sweats follow malarial disorder, where an enlarged liver and spleen remain after the periodicity is broken, where jaundice has been a more or less persistent complication, this agent has been of much value, combined with other indicated measures.

The antimalarial and distinctly antiseptic properties of *eucalyptus* give it a prominent place in the therapeutics of **typhoid fever**; while it has many of the essential tonic and restorative properties, it is most active as an intestinal antiseptic. It has been used in epidemics of typhoid where there could be no possibility of a mistaken diagnosis, and when given from the first all the symptoms showed positive amelioration. The temperature especially was kept under control, while the disease symptoms were markedly controlled. It has been especially noted by those who have used this agent persistently, that the attendants are not likely to contract the disease. This is attributed to the fact that the agent destroys the germ within the intestinal canal.

Eucalyptus is a valuable remedy in **scarlet fever** given in conjunction or alternation with *aconite* and *belladonna*. It answers an excellent purpose in many cases. It prevents the symptoms developing in a severe form by destroying the germs and assisting in the control of the temperature. It cures the throat symptoms quickly. It stimulates a normal action in the glands of the skin, and by encouraging elimination through these glands, prevents **post-scarlatinal nephritis**. Five drops in lard thoroughly rubbed together and applied to the skin daily, is one of the most efficient of applications. When nephritis is present it has a positively curative influence.

In the treatment of **diphtheria**, *eucalyptus* is an excellent remedy. It may be used as a gargle diluted, and when the membrane has formed in the larynx or in the nasal passages, if fifteen drops of a mixture of equal parts of the oil of *eucalyptus* and turpentine be dropped upon the surface of hot water in a close-mouthed vessel, and the vapor inhaled

by the patient for a few minutes every two hours, there is nothing that will more speedily destroy the membrane and assist in its removal.

The writer has been successful in completely clearing the nasal passages within thirty-six hours by this measure when the occlusion was nearly complete. This course is almost equally applicable in **membranous croup**. A specific measure in this disease is to give internally every two hours five drops of a mixture of equal parts of the tinctures of *eucalyptus* and *jaborandi*. If the membrane has formed extensively, this course loosens it and permits it to be thrown off. If it is in the early forming stage, the growth ceases and the membrane disappears. These facts have all been confirmed in a multitude of cases.

Eucalyptus if further used in tonsillitis in chronic **post-nasal** and bronchial **catarrhs** in **asthma**, in which case the vapor either alone or with that of *stramonium* is very useful, and in those conditions of the lungs and bronchi where there is offensive expectoration, pus or a suggestion of gangrene. In the constitutional treatment of **phthisis** it is of value, and if a few drops of the oil be added to cod liver oil, it will remove the disagreeable flavor of the latter agent.

This agent has been used with excellent results in the treatment of **chroniculceration** of the stomach. It stimulates the mucous surface to normal action, destroys the germs of the disease, prevents putrefaction and corrects excessive acidity. The ulcers heal rapidly under the influence of this remedy. It is equally efficacious in chronic diarrhea and dysentery with offensive dis. charges.

The agent has been extensively used in the treatment of **catarrh** of the **bladder, nephritis, pyelonephritis** and **pyelitis**, especially if the urine be decomposed and offensive. It is useful also in **gonorrhoea** and in **gleet** and as a wash in specific vaginitis.

In uterine catarrh this agent is valuable used as a douche in the proportion of two drams of the tincture to a pint of water. Whenever offensive discharges from these parts are present, it is useful in ulceration of the cervix. It may be made into a suppository with cocoa butter and white wax, in the proportion of one part of the oil to three parts of the other mixed constituents. This suppository is of great service after labor, either where the douche cannot be used or to be

inserted after the douche where there is traumatism. This suppository is of value in uterine cancer. It relieves pain and corrects the odor of the discharges.

BONDUC.

Caesalpinia bonducella.

A new substitute for quinine is brought forward by Keshav Lal J. Dholakia, Delhi, India, in Practical Medicine. He recommends the powdered kernels from roasted *bonduc* nuts. These are derived from a legume-bearing climbing plant, *Caesalpinia bonducella*, found almost throughout India.

The drug is antiperiodic, febrifuge, tonic and anthelmintic. It is given in doses of from ten to fifteen grains every four hours. It is described as closely resembling quinine in action, as harmless to pregnant women, as not being contraindicated during fever, and as well borne by patients with quinine idiosyncrasy.

As an anthelmintic the action is weak. The drug is comparatively harmless in large doses.

GROUP I.
Agents Acting on the Nervous System.

DIVISION II.
Stimulants and Excitants.

CHAPTER III.
Stimulants Which Directly Influence the Circulation.

BELLADONNA
ATROPINE
HOMATROPINE HYDROBROMATE
STRAMONIUM
DUBOISIA
PHYSOSTIGMA

BELLADONNA. *Atropa belladonna.*

Synonym—Deadly nightshade.

CONSTITUENTS—

Atropine, Atropamine, Belladonine, Atrosin, Hyoscyamine, Cholin, Asparagin, Chrysatropic and Succinic Acids.

PREPARATIONS—

Atropine Sulphae, Atropine Sulphate. Dose, 1-120 to 1-60 of a grain.

Extractum Belladonnae Foliorum Alcoholicum, Alcoholic Extract of Belladonna Leaves. Dose, one quarter to one-half of a grain.

Tinctura Belladonnae Foliorum, Tincture of Belladonna Leaves. Dose, from one to thirty minims.

Extractum Belladonnae Radicis Fluidum, Fluid Extract of Belladonna Root. Dose, from one to five minims.

Specific Medicine Belladonna. Dose, from one-twentieth to one minim.

Administration—The official fluid preparations in most part of *Belladonna* vary so much in strength that they cannot be relied upon for activity as compared with each other. Using the product of a single reliable manufacturer one ultimately learns the strength of that product and is

thus able to adjust it accurately. The normal tincture of The Merrell Company, the Homeopathic mother tincture, and the specific medicine are all reliable preparations, but vary greatly in comparative strength. The specific medicine is very active, and I would advise that each prescriber dilute a given quantity with four parts of alcohol and prescribe this as a strong tincture. Ten drops of this in a four-ounce mixture given in dram doses will be found uniformly active for children. A good U. S. P. tincture will answer in many cases in drop doses in adults.

Physiologic Influence—In its full primary influence, *belladonna* is an excitant to the cerebrum, promoting active hyperemia—a profoundly full, active condition of the cerebral capillary circulation. I will show later on that this influence of dilating the capillaries, combined with the stimulating influence of the agent upon the heart, with a characteristic influence in contracting the capillaries of the splanchnic area, makes this the most powerful agent known, in its direct influence upon pathologic hyperemia or a tendency to stagnation in any of the capillaries, whatever organ they may be distributed to. I will also show that this influence can serve as a guide in the prescribing of this remedy in a rational manner, more profoundly than any other influence the remedy exercises.

When given in full doses the fulness of the capillary circulation induced produces a flushing of the face, a bright redness of the skin, which in sufficient dose is general over the entire body. This resembles very closely the erythematous rash of scarlet-fever, and from this fact the Homeopaths have one of their guides in prescribing this agent for that disease. It suppresses the secretions of all the organs, especially of the mucous membranes, inducing dryness of the throat and mouth and a tendency toward constipation.

The evidences of **cerebral fulness** are: restless excitation, mental exhilaration, headache, dilated pupils, intolerance of light, impairment of vision, uncertainty of muscular movement, the latter finally amounting to incoordination, with motor paralysis. There is delirium of a talkative character, in some, cases violent or furious, with illusions and hallucinations. In extreme delirious excitement, if the dose is a fatal one, there is feeble pulse, cold skin shallow respiration, and paralysis of the inhibitory nerves of the heart and heart-muscle, resulting in death.

In the influence of this remedy upon the capillaries of the skin, loading them up so actively, there is a contributory influence upon the capillaries of the spinal cord, which decreases the amount of blood in this locality, exercising often an exceedingly beneficial influence, especially when the patient suffering from spinal or cerebral congestion has cold skin, cold extremities, a cold, clammy sweat, dilated pupils, and great sluggishness of action. In this case, the remedy is absolutely specific and invariable in its influence.

Belladonna acts directly upon the heart. It is a pure stimulant to this organ, through its influence on the cardiac muscle and accelerator nerves. Previously it was thought that this drug increased arterial pressure. This now is considered doubtful, as positive proof is lacking. Notwithstanding the lack of proof in the laboratory, in the individual there is more force in the pulse, and there is extreme activity, as stated above, in the capillary circulation, especially when there is **profound congestion**, with cold relaxed skin, difficult breathing from **pulmonary hyperemia**, with a small compressible pulse and a deathlike pallor, followed, in extreme cases, by cyanosis. Then the stimulating influence of $\frac{1}{80}$ or $\frac{1}{60}$ of a grain of atropine will show itself unquestionably in a very few moments. This influence is very general. Strychnine expends its influence upon the nerve-centers, but the influence of atropine is upon the peripheries in an unquestionable manner, making it probably the most active of the diffusible stimulants. In this rapidity in removing the blood from the lung-cells it increases oxidation. It thus relieves the pulmonary hyperemia, overcomes cyanosis and promotes free, deep breathing.

Specific Symptomatology—There is a characteristic syndrome present in congestive types of many diseases which rationally indicates the need for *belladonna*. **Preliminary congestion** is a common condition in very many diseases and the influence of this drug, in antagonizing congestion and in producing a normal and effective equalization of the circulation brings it first to the mind of those who are studying actual conditions, in an endeavor to decide upon the needed remedy.

The syndrome referred to consists in chilliness, mental dulness, and inactivity; dull eyes with dilated pupils, eyes partly open when asleep; skin cool and relaxed, with occasional free sweating; cool extremities; general sluggish capillary circulation.

The Homeopaths claim that *belladonna* is especially indicated where the patients are full-blooded; seldom in anemic patients. Children, very active and with big brains, who are disturbed nights by night-terrors or dreams or show other evidences of restlessness are relieved by *belladonna*. The remedy acts best in full-blooded patients, where there is active localized heat, pain, redness, and swelling, evidences of local inflammation. That is a very common indication—local engorgement. When there are a full, bounding pulse, dull flushed face, dull eyes, dilated pupils, and throbbing carotids, the remedy is beneficial. Negroes, and those in warm climates, are especially susceptible to the action of *belladonna*.

Belladonna is not a specific fever-remedy, but in a febrile disorder there is some local engorgement somewhere; there is local capillary hyperemia and, if the remedy is not contraindicated by an already too active condition of the capillary circulation, it will be found of service in all acute congestive disorders with temperature. I have made it a practice for thirty-five years to combine this remedy with the directly indicated fever-remedy, until the symptoms of local engorgement were overcome, then to continue with the fever-remedy alone. When so prescribed, the influence of the remedy to restrain secretion need not be considered, as this influence is usually antagonized by the agent that is used to control the temperature. This is especially true of *aconite* administered in conjunction with it, which makes a most reliable combination.

Therapy—*Belladonna* is indicated at the onset of inflammatory conditions. Given early with *aconite*, when fever alone is present, hyperemia does not occur and the inflammation is aborted. If the disease is localized in any organ, displaying the phenomena named above, its influence often is quickly apparent.

In **diphtheritis, tonsillitis, croup, bronchitis, pneumonia, pleuritis and peritonitis**, *belladonna* stimulates the capillary circulation in the engorged organs, thus quickly preventing the local effects of the acute congestion or inflammation. At the same time it has a marked influence upon the fever when used in conjunction with the other indicated measures. In **chronic soreness of the chest**, *belladonna* is a valuable remedy. It is one of our best remedies in **whooping-cough**. If half a drop of the tincture of *belladonna* be given every two hours,

alternated with one grain of alum in syrup, excellent results often are obtained.

In the therapeutics of all **continued fevers** this agent has an essential place in some stage of the fever. In fevers of **malarial** origin, there is no other remedy that will replace it. In the sthenic stage of these fevers, combined with *aconite*, it is sufficient for many of the indications. If there is an intermission or a marked remission, it may be continued alone, during the period.

In **typhoid fever**, it is an important auxiliary during almost the entire duration of the fever. Contraindications may arise, when it must be discontinued. It prevents congestion of the intestinal mucous membrane, and of the glands. This is indeed, an important function. It stimulates the heart to diffuse the blood uniformly throughout the entire capillary circulation, and thus prevents cerebral engorgement. The brain symptoms exhibit many of the *belladonna* indications and are quickly relieved by it. It may not convince the prescriber of its beneficial influence in only a single case, but its continued use, in many cases, is most convincing, as compared with those in which it is not used.

In **meningeal inflammation**, both of adults and children, it is often sharply indicated. This is especially true in subacute cases, where there is slowly increasing dulness, with a cold, moist skin, although there is an excess of two or three degrees of temperature. The pupils are dilated widely, the eyes are dull, the head is drawn back and crowded into the pillow, slowly and constantly rotated from side to side, the eyes are partly, if not widely, opened when the patient is asleep, and the urine passes involuntarily. These cases are sometimes exceedingly stubborn. *Belladonna* or its alkaloid in frequent doses is the most directly indicated remedy.

In the milder forms of **insanity** or other forms of **mental disease**, the Homeopathist prescribes *belladonna* where there is **violent delirium**, with livid face, dilated pupils, protruding eyes, fury, striking or biting, spitting, inclination to throw off the clothing or tear them, intolerance of light, extreme arterial tension; but he gives in high dilutions.

One physician says that in certain forms of **obesity**, with plethora and an inclination for general stasis, *belladonna* will assist in reducing the

amount of fat.

Erysipelas will yield promptly to *belladonna* or atropine in small doses. It is given with *aconite* or alternated with *rhus*. It should not be omitted. It acts most promptly if the tissues are smooth, dark, and deep-red, with sluggish circulation and burning, the inflammation being confined to the structure of the integument, and not in the areolar tissues, there being no pustulation or vesicles present.

In **eruptive fevers**, it is a most essential remedy. It quickly determines the eruption to the skin, and retrocession is almost impossible if it is used early. If retrocession has occurred, *belladonna* is the most prompt remedy known for restoration of the eruption.

In **scarlet-fever**, it has a salutary influence also upon the fever. It promotes exfoliation and assists in the general elimination of the products of the disease. It is directly opposed to the **renal hyperemia** or the **nephritis** so common as a result of scarlet-fever and diphtheria, and is our most reliable remedy with which to overcome this condition when it occurs. For the **nephritis**, a drop of the tincture may be given to a child ten years of age every two hours, alternated every hour with 1-2 grain of santonin. If there be a large quantity of albumin present, two grains of gallic acid every two hours will facilitate a cure.

Given in small doses after an infectious exposure and before the occurrence of scarlet-fever this agent will act as a prophylactic of the disease. The writer has administered the remedy to the other exposed children when a single case has appeared in a large family, none of whom had an attack. It must be given in small doses: ten drops of the tincture of *belladonna* in four ounces of water, a teaspoonful every two or three hours to a child of six years. Some of our writers have claimed that *belladonna* is just as effective in preventing the development of **diphtheria** and **measles** as it is in preventing scarlet fever. They think they have excellent reasons for this conclusion, and I am inclined to believe with them.

Belladonna is of value in **congestive neuralgias**. Full doses should be given. It will cure some exceedingly stubborn cases. It is an excellent plan to give it with ammonium chloride in stubborn chronic cases.

In **prostrating night sweats**, with enfeebled circulation and cool

relaxed skin, belladonna or atropine is advised. The $\frac{1}{100}$ of a grain of atropine at bedtime will accomplish excellent results. It may be given hypodermically. Medicinal doses of *belladonna* during the day will accomplish similar results.

In **headache** from fulness of the circulation of the brain dull frontal headache, with indisposition, malaise, and cool skin, with mental torpor and a tendency to unpleasant dreams, this remedy is of value; 1 to 2 drop every hour or two.

The influence of this drug as an antispasmodic against involuntary muscular action gives it some value in **spasmodic colic** and **obstinate constipation**. It is in common use in laxative pills, to facilitate the action of the purgatives. In lead-colic, it is advised.

Belladonna in physiological doses is an excellent remedy for the treatment of the conditions present during the passing of **biliary calculi**. It very materially facilitates the passage of the stone, prevents chronic change occurring in the structure of the duct, relaxes the duct by a paralyzing effect upon the circular muscular fibers, and renders subsequent attacks less frequent and less severe.

It is a remedy of service in the treatment of **nephritis**. **Albuminuria** is the result of greatly increased renal blood pressure and capillary engorgement. *Belladonna* antagonizes all the pathological processes in a direct manner. In acute cases, its influence is apparent from the first. In subacute or chronic cases, its use must be persisted in, but the results are equally satisfactory where structural change has not taken place in too great a degree. Other indicated measures are not to be neglected.

In **incontinence of urine**, where there is a plethoric tendency, a stagnant capillary circulation or the tissues are relaxed, *belladonna* is a prompt remedy. It is useful in **diabetes insipidus**, with cold extremities. In these cases, it should be given in full doses.

Professor Whitford long advised *belladonna* for **painful menstruation**. There is an extreme form of this difficulty, in which the patient becomes very cold; the skin is cold and clammy, the pain is extreme, the hands and feet are icy cold, and the temperature subnormal. *Belladonna* in full doses to its physiological effect is directly indicated

here. The patient can be put into a hot bath, with only good results if this is not overdone, but the equalization of the circulation can be accomplished well with *belladonna*. Occasionally a hypodermic of atropine will accomplish the results more readily.

By stimulating the capillary circulation in the ovaries this agent is directly useful in the milder forms of **congestive dymnenorrhoea**. The direct indications for the agent are nearly always present in the cool skin, cool extremities, dulness, chilliness, and inactivity. It may be given in drop-doses preceding, during or subsequent to the period.

Its influence in stimulating the capillary circulation of the ovaries in stasis renders it of value in the treatment of sterility from inactivity of those organs. If there are hysterical manifestations at the menstrual epoch, with deficient menstruation, *pulsatilla* may be used in conjunction with it.

The agent will **retard** the **secretion of milk** in the lacteal glands, and is of service when, from the death of the child or from acute inflammation, as in severe mastitis, where abscess is threatened, or from other causes, it is necessary to suppress the secretion. It may be given both internally and applied externally, with good results. Its influence is wide and salutary. When restoration of the secretion is desired, it should be promptly discontinued.

Externally, *belladonna* is used in **spinal tenderness**, with congestion, also in congestive **occipital headaches** and **lumbago**. It is applied in all conditions inducing a **lame back** and in **neuralgia** of the **spinal** and **sacral nerves**. In violent acute inflammation, it acts as a sedative and anodyne while it exercises its healing properties. It is used in **rheumatism**, in sprained and painful joints, and in boils and carbuncles.

The extract of *belladonna* is used in **relaxing a rigid os uteri**. An ointment is made and applied directly to the os. In this form, it is of value in spasmodic urethral stricture and in painful congestive conditions of the rectum. A prepared *belladonna-plaster* may be applied over inflamed organs while the agent is being given internally.

In the treatment of **phlebitis**, for which we have very few specific remedies, the late Professor Clark, because of its power in overcoming

hyperemia of the venous capillaries and venous walls, claimed that *belladonna*, in the form of a strong ointment made from the concentrated extract and kept hot, would produce very prompt results. He invariably used it, and claimed to have had no failures. He would watch for the physiological effect—the dryness of the mouth, dilatation of the pupils, and dry throat; he would then remove it for a while, subsequently to reapply it in the same manner.

Atropine.

Atropine is the essential alkaloid of *belladonna*. It is difficult to obtain entirely free from hyoscyamine.

Description—It occurs as a white crystalline body, usually in minute acicular crystals, or as an amorphous white powder of a bitter, acrid, nauseous taste and odorless. Upon exposure to the air it assumes a yellowish color. It is soluble in 130 parts of water and three parts of alcohol, fifty parts of glycerine and quite freely in ether and chloroform.

Atropine Sulphate.

Description—This salt is perhaps more commonly used in medicine than the unsaturated alkaloid, atropine. It is a white crystalline powder, odorless and permanent. It is freely soluble in water and in alcohol, nearly insoluble in ether and chloroform.

Therapy—The uses of atropine and atropine sulphate are those of *belladonna*. Their concentrated form greatly increases the violence of their action. *Belladonna* is preferable for constant daily prescribing. These alkaloids are of much advantage in narcotic poisoning and as stimulants in the recovery of patients from shock. The $\frac{1}{100}$ of a grain will produce the physiological symptoms in a healthy patient. This dose is seldom exceeded. From $\frac{1}{150}$ to $\frac{1}{200}$ is usually sufficient. The $\frac{1}{50}$ of a grain is the maximum dose. They are best used hypodermically.

Solutions of atropine for hypodermic use should always be made fresh. Old solutions are to be avoided. The fluid becomes infected, and the alkaloid is partly destroyed.

Atropine is used to **dilate** the **pupil** in examination of the interior of

the eye, and it is useful in acute inflammation of that organ. It empties the capillaries of an excess of blood, abating the inflammatory processes. It prevents adhesions in iritis, and assists in breaking up any that may have occurred. Two grains of atropine are dissolved in an ounce of distilled water, or better yet, in an ounce of castor oil deprived of its ricinic acid. From one to five drops of these solutions may be instilled into the eye. The oleaginous solution has advantages over the aqueous solution.

Atropine is of superior advantage, used hypodermically, in certain emergencies; in **narcotic poisoning**, and as a stimulant in the recovery of patients from shock. The $\frac{1}{100}$ grain dose will produce the physiological symptoms in a healthy patient. This dose seldom is exceeded, and from $\frac{1}{200}$ to $\frac{1}{150}$ grain usually is sufficient. The $\frac{1}{50}$ of a grain is the maximum dose.

Within recent years, the action of atropine given hypodermically for controlling **hemorrhage** has gained so many advocates that it has now become established as a most reliable remedy for that purpose. Doctor Waugh was among the first to bring this use of it forward. His arguments have been unanswerable until its position is now fairly established. He clearly demonstrates its rational, reliable influence for this purpose. From $\frac{1}{50}$ to $\frac{1}{100}$ grain is injected, and the doses repeated as needed. It is exceedingly useful in uterine hemorrhages.

Doctor Paulding, writing in The Medical Council, relates some experiments with the hypodermic injection of atropine in **acute alcoholism**. There were eleven boys less than 12 years old playing in a freight-yard, where some high wines in barrels were standing on open cars. A barrel was tapped with a gimlet and through a straw all of the boys drank freely of the spirits. Doctor Paulding was called to treat one of them. He observed the extreme dilatation of the pupils. This is the characteristic indication for atropine, determined its use, and he gave a hypodermic of $\frac{1}{200}$ grain. This one dose saved the boy's life. The other ten boys died. The doctor reports two other cases where death seemed imminent but which were saved by a single hypodermic injection of $\frac{1}{100}$ grain of atropine.

Doctor Shadid dissolves $\frac{1}{60}$ of a grain of atropine in 2 ounces of water

and gives one teaspoonful every ten minutes until there is relief, in **certain headaches** which follow prolonged worry, excessive mental exertion, with more or less exhaustion.

In **acid stomach**, where the hypersecretion of the acids is great, atropine, an occasional dose as needed, has been found to exercise a good influence.

Mild solutions of atropine dropped into the ear will relieve earache.

The use of *cactus* in subnormal temperatures has strong advocates, but its influence is positively enhanced by combining it with atropine, giving the two in comparatively full doses for a time.

The injection of atropine at the constriction, in case of **hernia**, or the application of the extract of *belladonna* over the enlarged hernia, has caused the **spontaneous reduction** in a number of cases. It is a powerful laxative in spasmodic or other constrictions.

Atropine has been used with excellent advantage in the treatment of seasickness.

HOMATROPINE HYDROBROMATE.

Formula— $C_{16}H_{21}NO_3HBr$.

Synonym—Hydrobromate of Homatropine.

Description—In the formation of Homatropine the chemical process consists of the decomposition of the amygdalate of tropine by hydrochloric acid. The Hydrobromate is a crystalline powder or minute white crystals. Soluble in six parts of cold water, sparingly soluble in alcohol.

Therapy—The agent is not advised for internal administration, although in doses of $\frac{1}{20}$ of a grain it has been given for excessive night sweats. It is used in the, **determination of refraction**, and in examination, in **ophthalmic practice**. Its advantage is in its promptness of action as a **mydriatic** and its transient influence. It is

used in the strength of four grains of the salt to an ounce of distilled water. It is in common use for complete paralysis. In this it is necessary to use a stronger solution—two per cent generally. A few drops instilled into the eye and repeated a few times, a few minutes apart, will in a short time accomplish the desired result. The pupil begins to dilate about ten minutes after it is first introduced. The effects are completely dissipated in the course of about thirty-six hours, while atropine retains its influence for, perhaps, ten days, and hyoscyamine for six or eight days.

The main objection to the use of homatropine is the hyperemia of the conjunctiva which follows its use. There is seldom, however, any acute inflammation. It does not so readily produce constitutional effects as atropine if absorbed.

In the treatment of inflammations it is not as serviceable as atropine. Because of the increased engorgement of blood in the part, it increases the condition. A further advantage of atropine over this agent in inflammations is its permanency or persistency of action.

STRAMONIUM. *Datura stramonium.*

Synonyms—Jamestown weed, Jimson weed.

CONSTITUENTS—

Daturine, which, according to Ladenburg, is a mixture of atropine and hyoscyamine stramonin, scopolamine.

PREPARATIONS—

Extractum Stramonii Seminis, Extract of Stramonium Seed. Dose, from one-sixth to one-half grain.

Unguentum Stramonii, Stramonium Ointment.

Extractum Stramonii Seminis Fluidum, Fluid Extract of Stramonium Seed. Dose, from one to five minims.

Specific Medicine Stramonium. Dose, one-fourth to ten minims.

Physiological Action—The action of *stramonium* on man is similar to that of *belladonna*. Moderate doses increase the frequency and fullness of the pulse, with dizziness and perspiration; a larger dose (five grains of the powdered leaves) causes nausea, thirst, dryness of the throat,

difficulty of speech, dilatation of the pupils, fever, relaxation of the bowels and increase of urine; a poisonous dose causes delirium, with laughter, loquacity, violent striking and biting, with grotesque hallucinations.

Daturine acts more powerfully than atropine, though its action is regarded as identical. The resemblance between *stramonium* and *belladonna* is a very close one.

Stramonium is a narcotic poison, a stimulant to the nerve force in its direct effects, and profoundly so in its influence upon the sympathetic nervous system.

Therapy—In proper doses it acts as a sedative and anodyne in a manner similar to *hyoscyamus*. It is a remedy for **excitable mania** and **acute delirium**, with violent uncontrollable tendencies. It has been given in epilepsy for its soothing and tranquilizing effect, but its antispasmodic influence is not sufficiently great to place it among the agents for this disorder.

It has been given in **neuralgias** wherever located, and in **neuralgic dysmenorrhea**. In **hysterical mania**, accompanied with **convulsions**, epileptiform or other convulsions, it is an excellent remedy. In small doses it will remove the globus hystericus.

It is credited with controlling the contractions and pain in approaching **miscarriage** and abortion, and preventing those accidents.

In the treatment of that condition usually known as **milk sickness** in malarial localities, Kiplely claims to cure all cases with the freshly bruised seeds of *stramonium*, giving as many as from fifteen to thirty seeds every two hours. To the animals who contract the disease, a teaspoonful of the seeds is given three or four times daily with satisfactory results.

He also gives it in the **painful menstruation** of women with good results, giving fifteen bruised seeds every few minutes until the pain is relieved, then farther apart.

As an ointment it has been long applied to inflamed swellings and to **glandular inflammations** and in **painful hemorrhoids**. It is useful in

mastitis, orchitis, parotitis, in rheumatic inflammations, and as a fomentation in these latter conditions, and in **pleuritis** and **peritonitis**, using caution not to obtain too marked cerebral effects.

In **muscular tremblings** it is indicated, especially if of functional or reflex origin. In the vertigo and unsteadiness from chronic indigestion or disordered stomach from hyperacidity and in headache from this cause it is the remedy.

In spasmodic or paroxysmal **cough**, as whooping cough, and in the violent paroxysms of acute bronchial cough, it is a soothing remedy, as it acts without suppressing secretion as actively as *belladonna*.

Because of its antispasmodic influence upon **spasmodic asthma**, it has come into general use as an agent in that disease, used principally as an inhalant. The dried leaves are burned and the fumes are inhaled and relief is immediate. The dried root in coarse powder as well as the powdered leaves may be smoked in a common tobacco pipe.

This use of the agent produces excessive expectoration, and also marked nervous phenomena, such as vertigo, nausea, determination of blood to the brain and stupor. In plethoric patients these induced symptoms are sometimes violent and even dangerous. It is sometimes burned in conjunction with potassium nitrate, to enhance its effects.

DUBOISIA.

Duboisia myoporoides.

Synonym—Corkwood Elm.

CONSTITUENTS—

An alkaloid Duboisine similar to hyoscyamine and atropine. Dose, $\frac{1}{130}$ to $\frac{1}{50}$ grain, usually administered hypodermically.

PREPARATIONS—

Extractum Duboisiae, Extract of Duboisia. Dose, $\frac{1}{4}$ to $\frac{1}{2}$ grain.

Extractum Duboisiae Fluidum, Fluid Extract of Duboisia. Dose, from two to ten drops.

Physiological Action—*Duboisia* is similar in many respects in its influence, to *stramonium*, *hyoscyamus* and *belladonna*. It produces dryness in the mouth and constriction in the throat, with difficult deglutition. It increases the pulse rate and arterial tension, increases the capillary circulation in the skin, with flushed face like *belladonna*. The pupil dilates, there is a sensation of fullness in the head, with tinnitus aurium, vertigo, nervous excitement and muscular uncertainty. These conditions are followed by mental inactivity and stupor, with general quiet, although the patient may not sleep.

Therapy—The agent has not been extensively used for internal administration. It soothes the respiratory apparatus, increases the action of the heart, like *belladonna* in congestions, and is given to control excessive night sweats.

It has been given in some cases of **maniacalexcitement**, but it must be given in the enfeebled cases and not when there is fullness—engorgement of the circulation of the cerebral organs. It has been used in the treatment of **emotionalinsanity** and **delirium** with excitement. Duboisine is given in doses of from $\frac{1}{120}$ to the $\frac{1}{60}$ of a grain in these cases, and is said to be a valuable hypnotic. In a few insane patients, especially those with hysterical manifestations, it has caused regurgitation of the food. It is also used in **muscular tremblings**, **paralysis agitans** and **epilepsy**.

There are a few patients who are especially susceptible to its use and will experience vertigo, fullness of the head, a feeling of danger and heart pains, even from small doses, or from a single drop of a one per cent solution in the eye.

Duboisia has been used as a **mydriatic**. It has no properties not possessed by atropine, although it is claimed to produce its effects in paralyzing accommodation and dilating the pupil more rapidly, with less conjunctival irritation and with more speedy recovery.

The hypodermic injection of duboisine will antagonize the influence of opium or morphine as effectually as atropine.

PHYSOSTIGMA.

Physostigma venenosum

Synonyms—Calabar bean, Ordeal bean, Chop nut.

CONSTITUENTS—

Physostigmine or Eserine, Calabarine, Eseridine, Phytosterin.

PREPARATIONS—

Extractum Physostigmatis, Extract of Physostigma. Dose, from one-twentieth to one-eighth of a grain.

Tinctura Physostigmatis, Tincture of Physostigma. Dose, from three to ten minims.

Specific Medicine Physostigma. Dose, from one-fourth of a drop to five drops. Prescribed, from eight drops to two and one-half drams, in four ounces of water. A teaspoonful every two to four hours,

Physostigmine or Eserine—A crystalline solid, white or pinkish colored, readily soluble in alcohol, sparingly soluble in water. Dose, $\frac{1}{150}$ to $\frac{1}{30}$ of a grain.

Physostigmine Sulphate—A crystalline powder, whitish or yellowish white, changing on exposure to a pink or reddish color, bitter, odorless, deliquescent; freely soluble in alcohol and water. Kept for preservation in amber-colored vials. Dose, $\frac{1}{150}$ to $\frac{1}{30}$ of a grain.

Solutions of one grain of physostigmine or its sulphate to the ounce of distilled water is used in the eye, one drop three or four times daily.

Physiological Action—The first effect of *calabar bean* upon internal administration in overdoses is local—a sense of burning and irritation in the stomach, with nausea, vomiting and purging. The salivary, gastric and intestinal secretions are all greatly increased. It stimulates unstriated muscular fiber, producing in the intestinal canal increased peristalsis. There is inactivity, prostration, cold, pallid skin and muscular incapacity.

The evidences of the action of this agent upon the nervous system are not marked. No pain is produced and the consciousness of the patient is usually retained. Probably, from deficient oxygenation of the blood, there is vertigo, which may finally induce narcosis. There are ultimate

paralysis and temporary tetanic convulsions. There is abolition of motor reflex.

The arterial tension is at first lowered, then increased, the heart is slowed. There is a reduction in the number and force of the pulsations. The influence seems to be entirely upon the muscles of the heart, through overstimulation of the cardiac ganglia, and not through the central nervous system. The heart finally loses its contractility, is flabby, and fails in diastole. The respiration becomes slower, is shallow and feeble, and finally ceases. The heart continues to pulsate with increasing feebleness for some little time after respiration has ceased. The blood is loaded with carbonic acid gas, and the corpuscles are altered in their character.

The general muscular relaxation from this agent is most marked. Small, long continued doses induce feebleness and indisposition to muscular exertion. By full doses, tremors of the voluntary muscles are induced, and finally complete muscular paralysis. The muscular structure of the walls of the intestines is sometimes affected by tetanic spasm, followed by complete relaxation and paralysis.

The mind may continue clear. The influence, at first stimulant, is finally motor depressant, abolition of reflexes appears, with ultimate paralysis of the motor nerves, more slowly occurring.

It is quickly absorbed and readily eliminated through all the excretories.

Upon the eye, when locally applied, this agent acts first by contracting the pupil. It afterward decreases intraocular tension, and produces spasm of accommodation and myopia. There is often pain of a severe contractile character produced in the eyeball.

Specific Symptomatology—The remedy is indicated when there is a feeble pulse, tremulous, perhaps slightly irregular, cool extremities and cool surface, breathing more or less difficult, with a sense of constriction. These symptoms are found present in some cases of **cerebro-spinal meningitis**. Administered in minute doses in this disease, it will be found to occupy a place between *belladonna* and *gelsemium*. It may be given in conjunction with *echinacea* with very good results. It overcomes the tendency to mental dullness and stupor

and wards off impending coma. The agent is useful where there is torpor, inactivity, atonicity of the intestinal canal, and of the organs of digestion and appropriation, or where from lack of nerve force there is deficient secretion, dryness of the mucous membranes, deficient glandular secretions with dry and hardened feces.

It increases the contractility of the muscles of the bladder walls, and of the uterus.

Although a motor depressant in large doses, in small medicinal doses it has a contrary influence.

Therapy—The agent may be given internally to allay the tension induced by extreme nervous irritation. Convulsive disorders from irritation are allayed by it, but it is not in general use for this purpose.

It has been used in **tetanus**, in **epilepsy** and in convulsions from all causes, also in **locomotor ataxia**, in **chorea** and in **progressive paralysis** of the insane. Its influence has not been such as to justify dependence upon it in these cases.

It stimulates the respiratory function and heart's action where there is great depression with **difficult breathing**, with a sense of compression or constriction of the chest, with soft, feeble pulse, cool, moist skin, and usually dilated pupils. It is the remedy for dyspnea under such circumstances. It is also advantageous where the **dyspnea** is **caused** by a clogging up of the bronchi and air cells without power to expel the thick tenacious mucus. It will liquefy the secretion and increase the power to expel it.

In **emphysema** and in **asthma** with great muscular relaxation, in **bronchitis** with dilatation, it is useful. It restores tone in phthisis and overcomes night sweats of that disorder.

It may be of advantage in dilatation of the **stomach**, and in atony and extreme inactivity of the intestinal muscular structure. In **intestinal catarrh** from this cause it is of much service. It is also valuable in **catarrh** of the mucous linings of the **kidneys** and **bladder**, and in extreme atony, relaxation and plethora of the abdominal structures. It will assist in overcoming **chronic constipation** and a tendency to **flatulence** in atonic cases.

It is useful in tympanites and **flatulence** present during the **menopause**, where there is atonicity of the intestinal walls and constipation. In the condition known as **phantom tumor** it has been used advantageously.

Its chief influence is upon the eye. When **mydriasis** has been induced by atropine or other agent, a solution of the sulphate of eserine will quickly restore the normal condition. Any **adhesions** of the **iris** which may have occurred as the result of inflammation may be broken up by this agent. It is used to reduce intraocular tension, as has been stated, and to increase the power of the muscles of accommodation, being valuable in paralysis of these muscles.

It is useful in **conjunctival inflammations** where **perforating ulcer** threatens to permit prolapse of the iris. It is especially advised when **ulceration** without determination of blood-indolent in character, nonvascularized-is present. It is useful in intermittent **strabismus**, in **glaucoma**, **asthenopia**, in **photophobia** and in some cases of neuralgia of the eyeball. After injury to the eyeball many conditions may occur which will be promptly relieved by the use of this agent.

Edison of Indiana wrote some years ago an excellent article on the treatment of meningitis, in which he lays great stress upon the action of this remedy. Whether the difficulty be spinal or cerebro-spinal, whether it be acute or chronic in character, he claims to obtain benefit in all cases, and cure in the larger percentage of cases, by the direct influence of **calabar bean**, especially if there be an underlying primary congestion, plainly apparent. He uses in conjunction, however, counter irritation in all cases.

To an infant he gives of a mixture of from eight to ten drops of the tincture in four ounces, a teaspoonful every half hour. To an adult he would administer two drops every fifteen minutes, until spasms or marked symptoms are under control, then he would give the dose every two or three hours. He lays great stress upon small doses frequently and persistently repeated. I believe it more useful if given in careful combination with **gelsemium**.

The remedy is useful in the treatment of **spinal irritation**, in one or two drop doses, frequently administered. The doctor has depended upon

this remedy for twenty-five years, and the results have established a fixed confidence in its influence.

Co-operatives—It may be combined with *xanthoxylum*, strychnine, *nux vomica* or *capsicum* with advantage. *Belladonna* will facilitate its action, also, in its influence upon gastrointestinal structures.

GROUP I.
Agents Acting on the Nervous System.

DIVISION III.

CHAPTER I.

**Agents with Stimulant Properties Involved in Active Trophic or
Tonic Properties.**

HYDRASTIS
GOLD AND SODIUM CHLORIDE
PHOSPHORUS
PHOSPHORIC ACID
AVENA
COCA
KOLA

HYDRASTIS. *Hydrastis canadensis.*

Synonyms—Golden seal, Yellow puccoon.

PREPARATIONS—

Specific Medicine Hydrastis , alcoholic, contains a bitter coloring principle, berberine, and the white alkaloids, hydrastine and canadine, and resinous and oily principles. Dose, from one to ten minims.

Colorless Hydrastis, non-alcoholic, contains the colorless alkaloids and the inorganic salts dissolved in glycerine and water.

Extractum Hydrastis Fluidum, Fluid Extract of Hydrastis. Dose, three to twenty minims.

Extractum Hydrastis, Inspissated Extract, Extract of Hydrastis. Dose, one to five grains.

Tincture of Hydrastis. Dose, from twenty minims to two drams.

Hydrastis Pulvis, Powdered Hydrastis. Dose, from three to fifteen grains.

Berberine (Hydrastin, yellow). Dose from one-half to five grains.

Hydrastine (white). Dose, from one-tenth of a grain to three grains.

CONSTITUENTS—

Berberine, Hydrastine, Canadine.

Physiological Action—In its influence upon the nervous system, this agent has stimulating properties in part analogous to those of strychnine. Its influence is more slowly developed and more permanent. In extreme doses it blunts the sensibility of the terminal nerve filaments, and convulsions have resulted from its use.

It stimulates the respiration and circulation, imparting tone and increased power to the heart's action, increasing arterial tension and capillary blood pressure. It influences blood stasis similarly to ergot and belladonna.

The tone imparted to the muscular structure of the heart differs from that imparted by strychnine in being permanent and not spasmodic or intermittent in character. It influences muscular structure everywhere in the system in the same manner. It stimulates normal fibrillar contractility and increased tonus, encouraging the nutrition of muscular structure. It inhibits the development of superfluous muscular tissue and abnormal growth within that structure. It is thus most valuable in altered conditions of the heart muscle.

In its influence upon the gastro-intestinal tract it is tonic, restorative and soothing in its action. It promotes the appetite, increases the secretion of the gastric and intestinal juices and conduces to a restoration of the normal condition. It increases peristaltic action and general muscular tonus in the structure of walls of the stomach and intestines.

The alkaloids have been given in sufficient quantities to produce death in the lower animals in experimental investigation, but it cannot be considered toxic in medicinal doses. It produces convulsive action, followed by decreased irritability of the vagus, the blood pressure is suddenly decreased and the heart fails in diastole.

Its elimination is comparatively active and is largely accomplished through the kidneys.

Therapy—In its therapeutic influence its widest range of action is upon the **stomach**, in **functional disorders** of that organ. It is the most natural of stimulants to the normal function of digestion. Its influence upon the mucous surfaces renders it most important in **catarrhal**

gastritis and gastric ulceration. It supersedes all known remedies as a local, and also as a constitutional tonic when this condition is present.

In administering this remedy, if there be irritation, the fluid and less bulky preparations are preferable. If there be marked **atonicity** with inactivity of the **stomach** and lack of nerve sensibility, the powdered drug in five grain doses is the most useful. This increases the tone, reduces abnormal secretion, stimulates normal excretion, promotes the appetite and increases the quantity of the digestive juices, and thus favors the digestion. It is most excellent in indigestion—in such cases, acting in a more rational manner than the digestives which have no influence beyond that immediately exercised upon the food within the stomach.

In extremely irritable conditions a solution which contains one or two drops of the specific *hydrastis*, or the colorless *hydrastis*, or in extreme cases the one-twelfth to the one-fourth of a grain of the sulphate of hydrastine or of the hydrochlorate of hydrastine is preferable to large doses of hydrastine or the powdered *hydrastis*. In some cases powders, or the precipitated principle, will irritate the stomach, producing weight, distress or even mild pain if the stomach is empty. In such cases it is best given after a little food has been taken, or in conjunction with the subnitrate, or the oxide of bismuth, or with a digestive if the stomach contains food.

In those cases of **atonic dyspepsia**, where the entire apparatus, including the liver, is stagnant and inoperative, one-fourth of a teaspoonful of the fluid *hydrastis* or of the colorless *hydrastis* dissolved in water will restore a normal condition of the glands and oil the entire mucous membranes.

The agent relieves the **chronic constipation** of plethora or muscular inactivity in relaxed, inactive, feeble cases. Its influence is encouraged by combination with *nux vomica*. It overcomes **hepatic congestion** in such cases and catarrh of the gall ducts. It may be combined with *podophyllum*, *leptandra* or *iris*.

It is a most superior remedy in the atonic conditions of these organs in **chronicalcoholism**., and if combined with large doses of *capsicum* and with forced nutrition, will in great part supply the demand for alcoholics and assist in the cure of the disease. It acts as strychnine

does in the cure, and may be most beneficially given in combination with that agent.

The tonic and nerve strengthening properties of this agent have long been utilized by the writer in all cases of **general debility** and nerve prostration, especially if associated with the conditions of the digestive and assimilative organs named. It is an admirable restorative tonic. It is demanded in convalescence from **protracted fevers** and debilitating inflammation, and as a general restorative after overwork, in the condition known as a complete "breaking down."

The usual manner of prescribing it is to give a grain of hydrastine, two grains of the bisulphate of quinine, one grain of the carbonate of iron and one-fourth of a grain of *capsicum* in a capsule every three hours, after eating something simple, that the stomach may not be entirely empty. The improvement is remarked by the patient usually from the first. It is a simple tonic, but has no superior. In some plainly indicated cases, the quinine salt may be replaced with one-fourth of a grain of **nux vomica**.

The influence of the agent is certainly direct upon the central nervous system, promoting a normal circulation and increasing its nutrition. It will yet be found applicable in the treatment of **cerebral engorgements** of a chronic character, and in the treatment of **hyperaemia** of those organs, in the cases in which *ergot* is used.

It is valuable in from one-fourth to one-half teaspoonful doses of the fluid *Hydrastis*, or colorless *Hydrastis*, in water, in **prostrating night sweats**.

In its power over the nutrition of muscular structure, it is a most important remedy in many **disorders** of the **womb**. It produces contraction of the unstriped muscular fibers, slowly but permanently stimulating the removal of excess of growth. In parturition it is not so immediate or forceful as *ergot*, but acts mildly in the same manner. In **uterine subinvolution**, in **menorrhagia** or **metrorrhagia** from this cause, it is the best remedy we have.

It is useful also in **post-partum hemorrhage**, but is rather slow in its action when immediate results are demanded. In the incipient stage of the development of tumors within the uterine structure, or fibroid

growths, it is not excelled by ergotine. It may be used hypodermically in these cases, and its results are comparatively permanent.

In the treatment of **cancer** or **scirrhus** of the **breast** Dr. Hale has had excellent results from the use of this remedy. He uses the mother tincture in conjunction with *conium*, giving five drops at a dose three or four times a day, the *hydrastis* before, the *conium* after meals. He says: "Sometimes, I mix them and give ten drops of the mixture three times a day."

Hydrastis is directly indicated where the **tumors** are hard and painful; *conium* where they are small, hard and painless. Where the swelling is soft or undulated and painful on pressure, and pain extending into the axilla, we find *phytolacca* in the same doses better than either. Sometimes, all three remedies are good together, and none of them is valuable in the open cancer. The remedies must be continued a long time to make a decided impression, and their effect is even increased by the same remedies being applied externally in the form of a plaster.

In all **catarrhal conditions**, especially if there be muscular relaxation and general enfeeblement, it is a useful remedy. It may be given internally and used locally. It is used locally in solution and is of much value as an application wash, irrigating fluid or gargle in all such **catarrhal, ulcerating, aphthous, indolent** and otherwise unhealthy conditions of mucous surfaces. Its application to **nasal catarrh** has been mentioned. It is a most useful gargle in aphthous or **ulcerated sore mouth**, in conditions where the gums are spongy or loosened from the teeth or bleed easily. In diphtheria and in tonsillitis as a gargle it is extremely useful.

Ten minims of a fluid preparation, to the ounce, may be used, or a solution of the hydrochlorate of hydrastine in **nasal catarrh**, in **inflammation** of the **eyes** and in **gonorrhoea** One grain of the hydrochlorate in an ounce of *rose water*, with or without five grains of the sulphate of zinc, is of superior value in purulent conjunctivitis. The same preparation, diluted, is useful in gonorrhoea Five drops of the solution in a dram of warm water is the proper strength. The colorless *hydrastis* in a solution with a small quantity of the potassium chlorate is sometimes superior in nasal catarrh. It is most serviceable in this condition if dilute.

It is the best of washes in **leucorrhœa**, whatever the cause, and it can be used freely without danger and in various strengths—from one dram to three, to the pint of hot water. It is of much service when the discharge is thick, yellow, and the membranes relaxed and feeble. In simple cases half a dram to the pint is beneficial.

It forms an excellent wash in **eczema** of the **anus**, with ulcers or fissures within the rectum. Its use may be followed with the application of a zinc ointment, with twenty-five per cent its weight of bismuth subnitrate. In mild solutions of the hydrochlorate of the alkaloid one-fourth grain to the ounce, it is serviceable in **catarrh** of the **bladder**, as an irrigating fluid.

We find in addition to the tonic influence of this remedy, that it has been used in a number of cases of **gall stone**, with curative results. Professor Farnum claims to have cured a number of cases with the powdered *hydrastis*. The cases which he regards amenable to this treatment are, first, ordinary cases of **cholelithiasis**, where the symptoms are transient and not severe; second, acute inflammatory cases, usually attended with fever, and **catarrhal conditions of the gall ducts**; third, cases ordinarily called biliary colic. Those, of course, where organic change has not taken place, or where the stones are not impacted, in the gall bladder or in the ducts. He uses it as an efficient remedy in **catarrhal jaundice** where there is no pain to indicate the presence of gall stones in the ducts. This is in harmony with its influence on general catarrhal conditions of the gastro-intestinal tract.

Goss claimed that it had direct catalytic power, and aided the digestion, while it corrected the biliary function. It restores the mucous lining of the gall duct, in the same manner that it influences other mucous surfaces.

Cuthberton gave *hydrastis canadensis* as a tonic to a pregnant woman who had a **goitre** of recent appearance. The goitre was promptly cured. As a result of this observation, he treated twenty-five other cases of goitre at the time of **puberty**, or during the **pregnant state**. At times when interference with the function of the reproductive organs seemed to produce reflex irritation. He claims that every case was cured by this remedy. He gave the agent from six weeks to three months, three times a day after eating. One of the patients had become steadily worse under the use of iodine, the iodides, and thyroid extract. This patient began to

improve as soon as *hydrastis* was given, and was promptly cured with this remedy alone.

Webster calls attention to the influence of *hydrastis* upon the **mammary gland**. It has been reported as a remedy for **mammary cancer**, but its more satisfactory influence is upon painful fulness of the mammary gland, during the menstrual period, or for the treatment of local enlargements occurring more or less suddenly, of a benign character, either in maiden ladies or at the menopause.

There is an abundance of authority for the use of *hydrastis* in conjunction with *coniумmaculatum*, in the treatment of **non-malignant mammary tumors**. The two agents combined seem to have an influence that neither possesses alone. Two minims each of these two remedies, in the specific form, was given by Webster before meals and at bed time, in these cases, with satisfactory results. The doctor reports in detail quite a number of cases which were relieved or cured by this treatment.

GOLD AND SODIUM CHLORIDE

Formula— $\text{AuCl}_3 + \text{NaCl}$.

Synonym—Chloride of gold and sodium.

PREPARATION—

Made by adding to a solution of the gold chloride, a solution of an equal amount of the pure sodium chloride. The mixed solutions are thoroughly stirred and evaporated and the double or mixed salt is thus precipitated. The crystals are of a golden yellow color and are permanent in the air. It is soluble in water and partially so in alcohol.

Dose, from one-twentieth to one-fourth of a grain.

Specific Symptomatology—The direct indications for its use in gastric troubles are a red, sleek or glazed tongue, anorexia, pain increased on the ingestion of food, extreme epigastric tenderness with bowel movements apparently induced by the taking of food.

It is indicated also in **general exhaustion** of the nervous system, especially if complicated with an impairment of the blood, or with constitutional dyscrasia, as it is an active alterative, acting much as mercury and its salts are claimed to act.

Therapy—The chloride of gold and sodium is of value in the **hypochondria** and nervous weakness of **tertiary syphilis**. It is of value in all forms of **Bright's disease**, but should be used cautiously, if at all, in the latter stages. It is useful in **tuberculosis**, in **chronic diarrhea** to sustain the nervous forces, and in **chronic dyspepsia**, and other hindrances to appropriation and assimilation.

In general impairment of the digestion and nutrition it is an excellent stimulant to the stomach and nutritive functions of the intestinal canal. It is a stomachic tonic of much value, In these cases it should be given in doses of not more than the sixteenth of a grain and even down to the one hundred and twentieth or two-hundredth, and repeated every two or three hours. Its influence upon the liver at these times is believed to be most satisfactory, especially if catarrh of the bile duct or duodenum is present.

It seems to exercise a selective action for the genito-urinary organs. It has been commended in chronic irritation and even in chronic inflammation of the uterus and of the ovaries, where this condition has made a profound impression upon the nervous system, and induced nervous exhaustion with a general atonic condition of the system. It has been long used in syphilis and other blood dyscrasias where the results named were marked, and where there was impaired nutrition, also where there were enlarged lymphatic glands and scrofulous swellings or ulcerations. In diabetes mellitus the agent has been spoken well of, and in some cases it is an important addition to the treatment. The chloride and the double chloride are both used in the treatment of **dipsomania**, seldom alone, but usually in conjunction with the sulphate, or the nitrate of strychnine and atropine, and for its moral effect, 'in some cases with apomorphine.

The results of the combined treatment have been, no doubt, satisfactory, as the statistics of "retreats and reform institutions" show nearly ninety-nine per cent of cures. It would be gratifying indeed if but a fraction of this number could be cured of the deadly habit, and most satisfactory to know that the administration of these agents

hypodermically, and other agents, such as *capsicum*, per os, and strong concentrated nutrition, will cure many cases. A discouraging relapse, from the continued influence of vicious associates, or the entire physical or mental collapse of an occasional patient whose constitution was completely undermined by previous indulgence, should not deter the physician and friends from making a most determined and persistent effort to restore every patient desiring restoration. It is useless to undertake to cure one who does not desire to be cured, as future indulgence will render his physical and mental condition more debased than before.

Some of those who have used mercury in the treatment of **syphilis**, believe that all the alterative effects of that agent are found in this, and in addition the profound nerve tonic and restorative influence of this agent renders it much superior.

PHOSPHORUS.

Symbol-P.

Occurrence—Phosphorus was discovered by Brandt in the product of evaporated urine, in 1669. It does not occur free, but is always found in combination, most often with calcium, sodium and potassium. It is derived from the ashes of bones, in which it exists as the tricalcium phosphate.

Description—An elemental, translucent, wax-like, yellow solid, luminous in the dark, unstable in the air; insoluble in water, but soluble in alcohol, petroleum, ether and the bisulphide of carbon. It melts at 112 degrees, boils at 554 degrees, giving off a colorless vapor.

It may exist in two distinct allotropic states. The first is the form just described, and the second is the variety known as the red phosphorus. The red variety is insoluble in those solvents which will dissolve the other form. It has no odor, does not oxidize in the air and is neither luminous nor poisonous. It is prepared by retaining the ordinary variety at a heat of 500 degrees for thirty-six hours. The heat destroys its affinity for oxygen.

Administration—It should be given in doses of from the one-one hundred and sixtieth to one-eightieth of a grain and repeated according to the indications. Larger doses may be given if its physiological effects are desired.

A tincture is prepared by macerating phosphorus for thirty days in alcohol, with occasional agitation, in the proportion of fifteen grains to the ounce. It is not officinal. One drop of specific medicine phosphorus, carefully increased, may be given as a dose.

Physiological Action—It is violently poisonous, producing its effects by deoxidation of the blood. In overdoses it produces violent inflammation of the stomach and intestines, intense burning pain, prostration, cold skin, clammy perspiration, vomiting and death. There is great anxiety, restlessness, intense headache, vertigo, wild erotic delirium and coma. The vomiting is of a coffee-ground liquid, resembling the black vomit of yellow fever. The urine is scanty and albuminous, and may be finally suppressed.

Its protracted use will in some cases induce a phosphorus habit, very difficult to overcome.

The agent is the most powerful nutritive stimulant to the nervous system, and a valuable nerve tonic—a trophic in the strictest sense, as it supplies a needed constituent. For this effect it is given most often in its combinations, but there are specific effects that can only be obtained when the agent is given in its uncombined form. After a dose of the one-twentieth of a grain there is a peculiar exhilaration experienced, a renewed capacity for mental and physical exertion. There is increased strength and renewed vigor.

The acids of Phosphorus, and the phosphates and hypophosphites, are common restoratives to the osseous and nervous structures of the system.

Specific Symptomatology—Its direct indications are **exhaustion** of the **nerve forces**, more or less complete, of a general character, as that following protracted fevers and malignant disease. **Occipital headache** of nervous exhaustion, especially that following mental strain and over-work. The insomnia of nervous prostration is quickly relieved by it.

Therapy—In loss of nerve force of a local character it is reliable, such as **functional impotency**, **neuralgia** from cerebral anemia and **weak heart action** from nervous exhaustion. It is valuable in **mental failure**, in **paralysis agitans** and in certain diseases of senility.

The remedy in minute doses acts directly upon the organs of the chest. It overcomes and prevents pulmonary engorgement. It quiets the **cough** of **phthisis**, strengthens the patient, moderates the **diarrhea** in these cases, and removes **chest pains**. It is a valuable agent in **dyspnea**, whatever the cause, whether of heart faults or disorders of the lungs. For stitches in the chest of a neuralgic or inflammatory character, it is specific. It is valuable in **bronchitis**, **pneumonitis** and **pleuritis**, with the indications of increasing weakness, sharp stitchlike pains, and short, dry, hacking cough. For intercostal neuralgia it is very sure.

Beyond these indications it has been used successfully in many cases of malignant jaundice. Its direct influence on the urinary apparatus is to induce **diuresis** with relief of existing irritation. It relieves vesical and prostatic irritability, especially if from sexual excesses. It has been used with good results in psoriasis, lupus, eczema and acne.

Toxicity—The eating of match-heads by children induces poisoning, also an overdose of the agent in medicinal form. The symptoms are a peculiar taste in the mouth and the odor of the substance on the breath. There is burning pain throughout the gastro-intestinal tract. There is vomiting and purging of matter which may be luminous in the dark. Symptoms of gastrointestinal inflammation rapidly follow, involving the intestinal and glandular organs. The condition of the liver, post-mortem, is similar to that of yellow atrophy, although at first it may be enlarged. There is fatty degeneration of all organs. Jaundice will finally occur, with vomiting of coffee-ground matter. There is obstinate constipation, with clay-colored feces. Muscular twitchings, vertigo, extreme headache, delirium, becoming wild; spasms, unconsciousness and death ultimately follow. The urine becomes dark-colored, scanty and albuminous, with fatty casts.

In parties subjected to constant contact with phosphorus a chronic form of poisoning occurs, as necrosis of bone, beginning with necrosis of the inferior maxilla. It is said none are safe from an attack if they work two years in phosphorus.

Antidotes—If phosphorus has been recently taken, the stomach must be evacuated at once. An old ozonized oil of turpentine is the physiological antidote, but it can seldom be obtained, and the fresh oil or other oils will facilitate the absorption of the agent. The permanganate of potassium is a correct antidote. Dilute solutions of this, or of the peroxide of hydrogen, may be administered.

The after effects must be met with stimulants, tonics and restoratives as are indicated.

In the treatment of **chronic poisoning**, the patient must be entirely removed from the cause, and restoratives as indicated used. Elimination is essential. The kidneys should receive much attention, and if not diseased should be stimulated to free activity. Vegetable alteratives will be of much service.

ACID PHOSPHORICUM.

Formula- H_3PO_4 .

Synonym—Phosphoric acid.

Description—This acid is a colorless liquid, almost odorless, and with a strongly acid taste.

Glacial Phosphoric Acid is obtained from calcined bones by the action of sulphuric acid; it occurs as a white uncrystallized fusible solid, with a very sour taste and without odor. Sparingly soluble both in water and in alcohol.

Neither of the above forms of phosphoric acid are used in medicine to any great extent.

Dilute Phosphoric Acid is formed by the addition of three and one-half ounces, by weight, of phosphoric acid, to twenty-six and one-half ounces, by weight, of distilled water. This contains ten per cent of absolute orthophosphoric acid.

This process results in the formation of a colorless liquid, with powerful acid properties. It does not, however, possess the corrosive action of other mineral acids.

Physiological Action—This agent in its physiological action resembles phosphorus only in a general way. It is a stimulant and sedative to depressed irritable nervous conditions when an acid is indicated in the system. It allays pain and distress of a subjective character probably more or less imaginary, present with hysterical conditions, and also in irritable patients suffering from nervous exhaustion.

Therapy—The agent is an excellent remedy for the so-called **nervous dyspepsia**. It adds tone to the nervous structure of the stomach, digestive and assimilative organs, materially aiding these functions. Its influence as a nerve sedative and tonic may be partially due to this stimulating influence over general nutrition.

If the characteristic indications present are those of an excess of acids, the excess is probably that of hydrochloric acid which may be neutralized before the phosphoric acid is given, when the latter agent will at once assist in correcting the gastric fault and will improve the condition of the nervous system.

Von Martinetz writes me that any case of debility, weakness, and lack of vitality may be corrected by this remedy, because the brain and the nervous system are directly influenced.

He says: “In the ulcerative stage of syphilis, I give phosphoric acid, and with the best results. In rheumatism, the acid, in certain cases, is a most excellent remedy, and if its indications are present, it will cure where other remedies fail.”

“When I meet cases that require arterial sedatives in high temperatures, I give *gelsemium*, *rhus tox*, and *bryonia*, if these are indicated, and later I give the patient full doses of phosphoric acid. Sometimes I give these two classes of remedies alternately every two hours.

“In **osteomalacia**, or softening of the brain, phosphoric acid has a directly beneficial effect, superior to other treatment because its combinations directly build up the bone structures. I saw in the

hospitals of Prague, under Professor Taks, many cases that had been treated with no result, which improved rapidly under phosphoric acid.”

“A lady patient had spinal trouble, and became very weak. Finally I placed her on phosphoric acid treatment, and in the shortest time possible she made a permanent recovery.”

Phosphoric acid stimulates the **sexual function**, increasing the tone of the ovaries and testicles, overcoming in some cases spermatorrhea. It corrects certain abnormal urinary sediments, rendering insoluble phosphates soluble, and easy of elimination.

Given in the manner advised for aromatic sulphuric acid in low forms of **fever** or in violent **inflammatory fevers**, with typhoid symptoms, it not only acts as a stimulant to the functions of nutrition, but it apparently increases nerve force. This fact is most important. It thus increases the force of the heart's action, giving strength and volume to the pulse. In none of these effects, however, it is quite equal to phosphorus, properly administered.

AVENA.

Avena sativa.

Synonym-Oats.

CONSTITUENTS—

Avenin, fixed oil.

PREPARATIONS—

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

Concentrated Tincture Avena. Dose, from five to thirty minims.

As a nerve stimulant and permanent tonic, this valuable agent was comparatively unknown, when the first edition was issued. The writer took the responsibility of introducing it here through the confidence acquired by observing its prompt and satisfactory action during an experience of twenty years in the treatment of nervous diseases. There are many well-known and lauded agents that are hardly to be compared with this for prompt action upon the nervous system.

Administration—*Avena Sativa* should always be given in appreciable
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doses. Fifteen drops, three or four times daily, well diluted, will usually meet the case. It may be given in doses of from five to sixty drops in rare instances. It should, however, never be given in larger quantities than twenty minims unless the patient is thoroughly accustomed to the remedy, and has found the usual dose insufficient. Otherwise there is danger of obtaining the physiological effect of the drug, which is announced by pain at the base of the brain. When this symptom makes its appearance the medicine should be discontinued for a day or two, and then given in reduced doses.

If administered in hot water during the day, its action is much quicker, and in cold water at night on retiring it has a more extended influence. When given in hot water, its action at times, is almost instantaneous.

Physiological Action—Its selective influence is directly upon the brain and upon the nutritive functions of the organism, increasing nerve force and improving the nutrition of the entire system. The influence of a single full dose is promptly felt, similar to the influence of any active stimulant, but more permanent. It is a stimulant, sedative and direct nutritive tonic, apparently restoring the wasted elements of nerve force.

Specific Symptomatology—The following indications for the use of this remedy are given by King: Spasmodic and nervous disorders, with exhaustion; the **nervous debility of convalescence, cardiac weakness**, from nervous exhaustion; **spermatorrhea**, with the nervous erythism of debility. In general neurasthenia it promptly relieves the almost unbearable **occipital headache**, so constant, and evidenced by an enormous waste of the phosphates in the urine, common with nervous exhaustion.

It is a remedy of great utility in loss of nerve power and in muscular feebleness from lack of nerve force.

In the overworked conditions of brain workers—ministers, physicians or lawyers—in the **general prostration** from great anxiety and worry, it acts in the same lines as phosphorus and in many cases fully as satisfactorily.

With these, there is so-called **nervous dyspepsia**, atonicity, in fact, of

the entire gastrointestinal tract. There is heart feebleness with some irregularity; there is cool skin and cool or cold extremities: there is melancholia, irritability, peevishness, vagaries of thought, morbid desires and fancies, usually accompanied with autotoxemia which demands persistent elimination. With these *avena* is directly indicated.

In **sexual neurasthenia** it is the remedy par excellence, as it has a selective influence upon the nerve structure of the genito-urinary apparatus.

Therapy—It will be found directly serviceable in paralysis and wasting disease of the aged, in **nerve tremors**, and especially in **chorea** and in **paralysis agitans**. It has been beneficial in **epilepsy**.

In the **convalescence** of **prostrating disease**, and during the **asthenic** or later stages of inflammatory and **exanthematous disease** and **diphtheria**, it is as important as quinine and strychnia, and certainly as reliable.

The local paralysis of diphtheria, has no better antidote, and if given in hot infusion during the course of acute exanthematous disease, it quickly determines the eruption to the surface and promotes convalescence.

Because of its selective action upon the nervous structure which supplies the reproductive organs, it will be found to allay nervous excitement, nervous **palpitation** of the **heart**, insomnia and mental weakness, or failure and general debility caused by **masturbation**, over **sexual indulgence**, or **onanism**. It is a sovereign remedy in **impotency**. This writer has had better satisfaction in the use of this agent in the temporary impotence of young newly married men, than from any other single remedy or combination of remedies. If there be prostatic or other local irritation, a combination of this agent with *sawpalmetto* will cover the field.

In **uterine** or **ovarian disorders** with **hysterical manifestations** it is of much service. The nervous **headaches** of the **menstrual epoch**, especially those accompanied with burning on the top of the head, and sick headaches apparently from disordered stomach at this time, or in fact sick headache at any time if accompanied with nervous weakness,

are all promptly benefitted by *Avena Sativa*, provided gastric acidity is neutralized. In atonic **amenorrhoea** with great feebleness, it is valuable. In neuralgic and congestive dysmenorrhoea, with slow and imperfect circulation and cold skin and extremities, it is an excellent remedy.

Dr. Simmons of Toledo, Ohio, in the Gleaner, mentioned the use of *avena* in **acute coryza**. His method resulted in a manner highly satisfactory in every case. Those who are subject to colds in the head, he furnishes with a small vial of specific *avena*. With the first indication he has them take twenty drops of hot water. This may be repeated or increased to thirty or forty drops in two hours, but the third dose is usually sufficient to remove every evidence of coryza if present, and to prevent its occurrence. The first evidences of its action may appear in five minutes. If twenty drops do not produce a feeling of warmth in the face and flushing of the skin, the next dose is increased.

This agent exercises a restorative power in overcoming the **habits** of alcohol, *tobacco*, morphine, and *opium*. It will enhance the value of other prescribed agents.

In the treatment of the morphine habit, our subsequent experience has not confirmed our early anticipations, and yet it is a useful addition to the treatment. It should be used in conjunction with *capsicum*, strychnine, *xanthoxylum*, or hyoscyamine hydrochlorate, and sustained in its action by persistent concentrated nutrition.

In conjunction with *cactus*, or *apocynum*, as these remedies are indicated, it will be found of much service in the treatment of **weak heart**, and the resulting complications. Webster lays much stress upon its action as a remedy to prevent the recurrence of **cardiac rheumatism**. This influence would be facilitated by combination with specific alteratives, and remedies that will facilitate the elimination of uric acid, without depressing the action of the heart.

The persistent use of this remedy, especially if conjoined with *capsicum* or minute doses of strychnine, will be found of great assistance in certain cases of paralysis. Its nerve restorative and persistently tonic properties are exercised fully here.

In a case of cerebral hemorrhage, from which recovery was not to be expected, Dr. French used *ergot* and *avena* with bromide as an

occasional sedative, with satisfactory results. He says: "I also give *avena* for the symptoms of nervous breakdown and exhaustion, regardless of the name of the special disease from which they may be suffering. Some patients claim to realize almost instantaneous effects on taking it while others are less easily affected. In all well-known cases selected for the indications of paralysis and deficiency of nerve power, it seems to me to be good."

Co-operatives—It works in harmony with strychnine in its stimulating influence, but is more permanent in its effect. It exercises an influence similar to quinine after prostrating fevers and is similar to *coca* and phosphorus in its restorative powers. *Zanthoxylum* will enhance its general stimulant influence, and it may be combined with *cimicifuga* and *scutellaria* and *gelsemium* in chorea. It is antagonized by nerve depressants and nerve sedatives which exercise no stimulant or restorative influence.

There is no danger of forming the habit of taking the drug, as it can be suddenly abandoned at any time without evil consequences, even when given in large quantities.

COCA.

Erythroxyton coca.

CONSTITUENTS—

Cocaine, cinnamyl-cocaine, truxil-cocaine, hygrine.

PREPARATIONS—

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

Specific Medicine Coca. Dose, from one-half to one dram.

Physiological Action—The natives of South America and laborers in that country use *coca*, chewing the leaves, much as *tobacco* is used in other parts of the world. It abolishes the sensation of hunger for a time. This may in part be accounted for by its producing anesthesia of the nerves of the stomach. It does not take the place of food. It increases the powers of endurance and confers a singular immunity from the suffering incident to privation and excessive physical exertion. These effects are accounted for, in part at least, by the anesthetic effect of cocaine, which is its principal constituent. In large doses it increases

the animal heat and quickens the pulse and respiration. By increasing the dose the nervous system is excited, with increase of desire for muscular exertion; while in poisonous doses it causes delirium, hallucinations and congestion of the brain. The general effect of *coca* is to stimulate the nervous system and retard retrograde metamorphosis. The prolonged use of the drug causes a degeneration of the nervous system characteristic of narcotics, though when used in moderation this effect is not observed.

The influence of *coca* on the native habitue of the tropics, and its influence upon the civilized inhabitants of the temperate zones are very different influences. Its continued use among the latter is most serious, inducing habits more degrading and pernicious than the use of *opium* and alcohol, and as fatal to mental and physical integrity.

The effects attributed to the drug are only what might be expected from the action of so powerful an alkaloid as is contained in the *coca* leaves.

Therapy—There are few cases of **neurasthenia** in which this agent will not be found useful. Taken after dinner, it serves often to facilitate digestion, and even confirmed dyspeptics find their distressing symptoms relieved by it. It is of especial value in cases where exhausting mental labor has led to **morbid depression** of spirits. It is valuable in all cases of despondency. It relieves the **nervous irritability** that follows over-indulgence of any kind, restoring the capacity for work and renewing the energy.

It acts to an extent as an antidote to the effect of opium, alcohol, *tobacco* or *coffee*, and judiciously used is said to enable one to overcome the morbid craving for any of these stimulants when they have been used to excess.

It is used by public speakers and singers, who have found themselves in better voice after using it.

As a remedy for **nausea** and **vomiting** from reflex causes, particularly in the vomiting of pregnancy, the cordial proves extremely efficacious. For this purpose it should be taken a few moments before meals, and the dose repeated in an hour or so afterwards. **Gastralgia** is frequently relieved by this remedy, and **nervous headaches** often disappear under its use.

It is of service also in cases of **asthma**. It is an **aphrodisiac** and **emmenagogue**. It is an antiperiodic. Internally and locally it has been used for **hemorrhoids**. As a restorative in feeble heart it is of much value.

KOLA.

Cola acuminata.

Synonym—Kola nut.

CONSTITUENTS—

Caffeine, Theobromine, tannin, fat, sugar, starch, gum.

PREPARATIONS—

Extractum Kolae Fluidum, Fluid Extract of Kola. Dose, ten to thirty minims.

It is prepared by different manufacturers in the form of wines, cordials or elixirs. A solid extract is also prepared.

Physiological Action—The natives of the western portion of tropical Africa use the seeds of *kola* most extensively to overcome fatigue, to support the strength on long marches, and to overcome depression of spirits and melancholy. It is most highly esteemed and is in as common use as *tea*, *coffee* and *cocoa* in civilized countries, closely resembling the first two named.

The agent sustains physical strength to a remarkable degree. It is a tonic to the heart, increasing the strength of its impulse; it regulates the pulse, increases arterial tension, induces diuresis, but retards tissue metabolism. It is a stomachic tonic, inducing a normal appetite and good digestion. It restores normal action in debilitated conditions of the intestinal tract.

Therapy—It is used in **neurasthenia** and **hysteria**, characterized by great mental despondency, foreboding, brooding, more of a quiet or silent character. It is especially indicated if the heart is feeble and irregular in its action, with general muscular feebleness. In **cerebral anaemia** it is indicated and is an excellent auxiliary in general anemia. It is an excellent restorative after prostrating **fevers** and

protracted exhausting disease. It is of specific value in **melancholia**.

In **weak** and enfeebled conditions of the **heart** muscle, with valvular weakness, dyspnea irregular action, it is of benefit, the influence being quickly exhibited on the pulse, and an improved sense of well-being experienced.

It is recommended as a substitute for alcoholic drinks, and has been used to most excellent advantage as a stimulant and restorative in the treatment of the, drink habit. Those most enthusiastic claim that it alone will cure **alcoholism**.

It is advised in **chronic diarrheas**, with great lack of tone. It has been used in **sea sickness**, one ship surgeon claiming that he had used it on many voyages, and had found it to relieve even the most susceptible, in many cases. The agent is without doubt a valuable one in its field.

Coffee is used as a **stimulant** to antidote the effects of **narcotic poisons**. In *opium* poisoning its effects are prompt and immediate. A strong decoction is prepared and injected within the rectum, if impossible to administer it per orem.

The late Dr. Brodnax, beginning in 1876, used *coffee* as a stimulant in the debility of slow fevers, especially in protracted pneumonia with feebleness. He found it in every way superior to whiskey.

He observed that new born infants that kept up a whining cry for days always succumbed ultimately from some one cause or other. He took *raw coffee beans*, ground them and made a strong tea with which he succeeded in curing the condition in every case in which he used it.

CAMPHOR.

Cinnamomum camphora.

Imported from Japan, China, Formosa.

Occurrence—A concrete volatile oil (stearopten), obtained from the *Camphor Laurel*, purified by sublimation, found in tough crystalline masses, white and translucent; easily powdered in alcohol or chloroform.

Physiological Action—In its influence there is something of a diversity of opinion concerning the method of action of this agent. It is certainly a sedative with power to increase the tone and improve the functional activity of the nervous system.

Therapy—It has long been used in **hysteria** to control the attacks and to relieve the nervous excitement, restlessness, nervous depression, melancholia and hypochondria. In sudden **depression** from exhaustion and the conditions of depression consequent upon neurasthenia, it serves a good purpose.

In all forms of **nervousness** in women and in children and in the feeble it has long been in common use. In the excitable **mania** of exhausting fevers, it serves a useful purpose. It allays nervous excitement and produces a general tranquillity of feeling.

It is a sovereign remedy for **acute coryza**—"cold in the head," and may

be inhaled or taken internally. In acute and chronic catarrh it has a tonic yet soothing effect upon the mucous membranes. It controls hypersecretion and restores normal functional action.

These facts are also true in catarrhal **bronchitis**, in **asthma** and in **whooping cough**. In these spasmodic coughs the antispasmodic influence of the agent is of prime importance.

It is of service when added to cough syrups as a stimulating sedative in the persistent coughs of capillary bronchitis.

It has a marked **anaphrodisiac** influence, and has been given freely in nymphomania, satyriasis and erotomania. Its influence in controlling sexual excitement is positive. It cures priapism, chordee, and in a general way reduces the power of erection and the sexual appetite. In sexual weakness and in nocturnal emissions accompanied with erotic excitement from over indulgence, with violent erections, it is of much use and may be combined with *ergot* to equalize the circulation of the organs.

It is a stimulating diaphoretic in fevers, and in inflammatory disorders with inactivity of the sudoriferous glands. This is especially true in exanthematous fevers, and where there is mania in prostrating fevers. Its influence is marked in adynamic fevers where there is feeble, rapid heart action and irritable pulse, with dry skin and muttering delirium, with subsultus tendinum. It has a diffusive stimulating influence in these cases which is of value.

It is combined with *opium* and *ippecac* in the well known **Diaphoretic Powder**, in the proportions of one part each of *camphor*, *opium*, and *ippecac*, with seven parts of the potassium sulphate. The dose is from two to ten grains.

CAMPHOR MONOBROMATE.

Synonym—Monobromated Camphor.

Occurrence—Formed by heating bromine and camphor in a sealed tube on a water bath. The crystalline product is dissolved and recrystallized, first from water, then from alcohol.

Description—Prismatic crystals, colorless, with the odor and taste of camphor, permanent, soluble in alcohol, ether and chloroform, insoluble in water. Dose, from one-tenth to five grains.

Administration—For children a good preparation is made by taking one part of the crystals and triturating it thoroughly with nine parts of the sugar of milk. Of this one grain may be given every hour to a child of two years.

Physiological Action—The agent has the properties of a stimulating sedative, exalting the nervous functions when depressed, when there is great restlessness, excitability or delirium. It has marked anodyne and hypnotic properties under proper circumstances.

Therapy—It is prescribed in **nervous excitement** or extreme restlessness accompanying inflammatory disease or protracted fevers. It is specific in nervous irritation from reflex causes.

It is an excellent remedy for children with the long train of symptoms resulting from irritation of the dental nerve.

The indications are diarrhea, nausea, great restlessness, fullness of the circulation of the head, with heat, sleeping with half open eyes, rolling of the head, and tossing, crying but with little sharp cries. These symptoms occur at any time during development of the milk teeth.

In fully developed cases of cholera infantum, with the extreme symptoms of involuntary watery discharges, cold extremities, pinched features, emaciation, apparently uncontrollable vomiting, this agent is given in full doses, and it will often meet alone the whole train of indications.

It is a hypnotic when fever and general distress induce wakefulness.

In **delirium tremens** it has produced good results, and in mild cases of the **delirium** of protracted fevers, with restlessness, it will be found of advantage.

It has been used in chorea, and in hysterical manifestations of an excitable character, and in nervous **palpitation**, and irregular heart action from reflex irritation.

MYRRH.

Commiphora myrrha.

CONSTITUENTS—

Volatile oil, Myrrhol, Glucocide, resin, gum.

PREPARATIONS—

Tinctura Myrrhae, Tincture of Myrrh. Dose, from five to thirty minims.

Tincture Aloes et Myrrhae, Tincture of Aloes and Myrrh. Dose, from twenty minims to two drams.

Physiological Action—A stimulant to the nervous system, with tonic properties. A stimulant with local action upon mucous membranes and glands and glandular organs; antiseptic. In overdoses, emetic and actively cathartic, decreasing bronchial secretion.

Specific Symptomatology—Myrrh is specifically indicated in a general sense where there is adynamia or extreme asthenia, with weak, inefficient capillary circulation, cold skin, weak pulse and deficient circulation.

It increases the power and frequency of the heart and respiratory action, and conduces to a general sense of warmth and increased vigor.

Therapy—This agent has always been highly esteemed as a stimulant, although its influence is more of a local than a general character. It exercises the characteristic influence of most of the stimulants upon the excretions and secretions, acting as a diaphoretic, expectorant, sialagogue, and to a certain extent emmenagogue.

It was once popular in the compound tincture of *capsicum* and *myrrh*. As a most active general stimulant in ulcerative, engorged, flabby and **atonic conditions** of the **mucousmembranes** of the **mouth** and throat this agent acts promptly. It stimulates the capillary circulation, restores tone and normal secretion and causes the healing of ulcerations. It is useful in sore mouths of all kinds, and especially in syphilitic sore mouth and sore throat. It may be combined with other washes or gargles or it will act promptly alone.

It will quickly cure the beginning of **syphilitic ulcerations** in the throat and mouth. In the **spongy gums** and **aphthous sore mouth** of children, in **stomatitis materni** if combined with an alterative and tonic astringent it will assist in the cure of the very worst cases without taking the child from the breast. An infusion made of *white oak bark*, *yellow dock root* and *myrrh*, to which may be added a mild antiseptic, as *baptisia*, *echinacea*, or boric acid, will cure the most intractable cases of this latter named disease. *Myrrh* is excellent in the sore mouth and extreme ulceration of **mercurial ptyalism**.

In its influence upon the **digestive apparatus** *Myrrh* is direct in its action. It quickly increases the power of the digestive function, stimulating the peptic glands to extreme action. It increases the appetite and promotes the absorption and assimilation of nutrition. It is given in **atonic dyspepsia** in the absence of inflammatory action, especially if there is excessive mucous discharge from the bowels.

It is exceedingly useful in the **apepsia** and extreme inactivity of the stomach in alcoholics, either alone or combined with *capsicum*.

While it is expectorant, and stimulates the secretion from the mucous membranes when inactive, it influences to a satisfactory extent the restoration of the functions of those membranes when the secretion is excessive, as in **catarrhal conditions**. In deficient or excessive action it restores the normal conditions.

In **debilitating expectoration** of phthisis pulmonalis it suppresses secretion and increases the patient's power to throw it off. In excessive mucous secretion from any organ it has a direct influence. In atonic catarrhal diarrheas of a subacute or chronic character its influence is specific and satisfactory.

In some cases of **catarrh** of the **bladder** it is used internally, and in the irrigation fluid also. It is valuable in **prostrating leucorrhea**.

It is an old popular remedy in **amenorrhea** given in combination with *aloes* and iron, especially in chlorotic and anemic patients. It has long been in use in the old school for this purpose. It may be combined also with macrotin to a good advantage.

MOSCHUS.

MUSK.

A penetrating, odoriferous, granular substance obtained from the perputial follicles of the musk deer of the Himalaya mountains in Central Asia from China to Tibet.

Tincture Moschi, Tincture Musk. Dose, from twenty minims to two drams.

Therapy—This agent is a powerful diffusible stimulant, anti-spasmodic and aphrodisiac,. It produces symptoms similar to those of alcoholic stimulation. It is used to overcome collapse and as a stimulant in all profound depressed conditions. It is useful either in nervous excitement or depression, if induced by exhaustion. It is a remedy for extreme exhaustion following severe **prostrating** fevers at the time of collapse.

As an **antispasmodic** it may be used for **hiccough**, **whooping cough** and other spasmodic coughs, and in **hysterical convulsions** and in the convulsions of childhood. It is similar in its action to **camphor**, **asafetida**, **valerian** and ammonia,.

OSMUNDA.

Osmunda regalis.

Synonyms—Buck thorn brake, Royal flowering fern.

PREPARATIONS—

An infusion of the roots is given and taken quite freely. A tincture may be obtained. The substance is very mucilaginous, and an infusion will quickly become jelly-like.

Specific Symptomatology—Diseases of the bones, from malnutrition. Weakness of the osseous structure, rickets, diarrhea and dysentery from local irritation in poorly nourished patients,

Therapy—With some physicians this agent is very popular in the treatment of the above disorders. It is also useful in weak back, especially in those cases where, with weakness of the muscular structure of the back, there are symptoms of incipient disease of the

spinal vertebrae. It has been used also in sublaxations.

In the treatment of diarrhea and dysentery, whether acute or accompanying protracted fevers, the agent is said to be very beneficial, especially if accompanied with great weakness. Also as a tonic during convalescence, when these conditions have prevailed. It has been given in various form of female weakness, particularly where there was severe leucorrhoea. Its soothing influence upon mucous surfaces seems to be remarkable.