

GROUP II.

Agents Acting Upon the Heart.

CHAPTER I.

CACTUS
DIGITALIS
CRATAEGUS
STROPHANTHUS
CONVALLARIA
LYCOPUS

CACTUS ***Cactus grandiflorus***

Synonyms— *Selenicereus grandiflora*, *Cereus Grandiflorus* (Haworth); Night-Blooming Cereus; *Cactus Grandiflorus* (Lin.).

PREPARATIONS—

Extractum Cacti Fluidum, Fluid Extract of Cactus. Dose, from one to twenty minims.

Tinctura Cacti, Tincture of Cactus. Dose, from five to thirty minims.

Specific Medicine Cactus Grandiflorus is prepared from the green stem of the true species. The dose is from one-third of a minim to five minims. This is a reliable preparation. Although the medicinal effects may be obtained from two minims, larger doses may be given, no toxic effects having been observed.

The dose of *cactus*, usually prescribed in the past, has been small, generally not to exceed five minims. A foreign writer has made some observations in **aortic lesions**, with faulty compensation. He believes that *cactus* is distinctly specific for these lesions, but he advises it in much larger doses. He gives half a dram if necessary three times a day. The patients treated in this manner had great **dyspnea**, **arrhythmia**, with edema of the extremities and ascites. He demonstrated the recession of the cardiac dilatation in these cases.

Physiological Action—This remedy increases the musculo-motor energy of the heart, elevates arterial tension, increasing the height and force of the pulse wave. This is accomplished by increased heart action,

stimulation of the vasomotor center, and stimulation of the spinal-motor centers, increasing their activity and improving the general nerve tone. It is the heart tonic par excellence, as it produces stimulation from actually increased nerve tone, through improved nutrition of the entire nervous and muscular structure of the heart. It produces no irritation of the heart muscles like *strophanthus*, or gastric irritation or cumulation like *digitalis*.

Cactus exercises a direct influence over the sympathetic nervous system, regulating its action, restoring, normal action, whatever the perversion. It acts directly upon the cardiac plexus, regulating the functional activity of the heart.

Investigations have proven that it increases the contractile power and energy of the heart muscle, through the intercardiac ganglia and accelerator nerves. It certainly improves the nutrition of the heart, as we have noticed the entire removal of progressive valvular murmurs after its continued use.

Specific Symptomatology—An irregular pulse, feebleness of the heart's action, dyspnea, weight, oppression in the chest, violence of the heart's action, depending upon atonicity or enervation, and a sensation of a constriction or band around the heart or around the chest, are the direct indications for its use in heart troubles.

Therapy—This agent is prescribed where the **heart muscle** is **enfeebled**, where there is **progressive valvular inefficiency**, with irregular or intermittent pulse. It is valuable in **mitral** or **aortic regurgitation** from whatever cause.

It is an exceedingly useful agent in **functionalirregularity** of the heart, however evidenced, if due to gastric irritation, as the agent in doses of from one to three minims, soothes gastric irritability and imparts tone and improved function, in wide contrast to *digitalis*, which irritates the stomach.

The action of *cactus* with *nux vomica* and *hydrastis* in the treatment of functional palpitation, depending upon an atonic condition of the stomach, must be emphasized. If extreme acidity be present, they may be combined with an alkaline agent or with neutralizing cordial (glyconda). A number of our physicians recognize this influence, and

my own experience confirms its value.

Those who have used all the heart remedies unite in the belief that for breadth of action, for specific directness, for reliability and smoothness and general trustworthiness, *cactus* takes preference over all the rest. Its influence is admirable where indicated and it is invaluable in many cases. Other remedies in some cases will do as much in single lines, but none will do more, and none will exercise all of its desirable influences.

The writer has given it in valvular troubles, in weak and irregular conditions, depending upon muscular enervation, and in aortic regurgitation, and has seen cures accomplished that had been thought impossible. It permanently strengthens the muscular action of the heart.

The author's experience with this remedy caused him to come to the conclusion a few years ago that *cactus* had a **special sedative** influence where indicated. He was convinced of the fact ultimately and now finds excellent authority for his conclusion. Rubini, of Naples, claims that it is almost the counterpart of *aconite* in its action, differing in that it increases the strength and tone of the nerve centers instead of paralyzing them, as large doses of the latter agent does. Given a condition in which there is a rapid and feeble pulse, weak heart, weak and exhausted nervous system, *cactus* in small doses, frequently repeated, is a true sedative.

Cactus as a powerful nerve tonic can be relied upon when there is any irregularity of the heart, demanding such a remedy in conjunction with general nervous weakness. It is especially indicated where there is mental depression with despondency and forebodings. It is combined with *avena*, *nux* or *cimicifuga* as I have often suggested with superb results. The above named combination will act as a tonic in a surpassing number of cases of nervous weakness without regard to the specific indications. It improves the nutrition of the brain by improving the circulation in that organ. In this it is of advantage in some cases of **neurasthenia**, especially in those in which there is a sensation of a band or cord around the body or chest or head, a symptom often spoken of in nervous exhaustion, and in forms of **paralysis**. Where feebleness is the cause of **nervousexcitement**, *cactus* exercises a nerve sedative influence. In oppressive **headache** in the top of the head, causing

nervousness, common to ladies at the menopause, resulting from irritation in the pelvic organs, or congestion, or menorrhagia with excessive losses of blood, it is of benefit.

Where there is increased arterial tension, and exaltation of nerve force and excess of strength in the cardiac action, *cactus* is contraindicated. This is true in prescribing it for heart disease and palpitation. We have had several cases of palpitation, depending on exaltation of nerve energy, increased by *cactus*, and decreased by *gelsemium*, *cimicifuga* or the bromides.

It may be given with excellent results combined with *avenasativa* in **impotence** accompanied with general nervous exhaustion, or in combination with *avenasativa* and *sawpalmetto* in the feebleness and impotency of approaching age, or in the prostration following habits of dissipation, when it will accomplish most excellent results.

It is given in **endocarditis** and in **pericarditis** following exhausting diseases as sequelae, With the most gratifying results.

In a marked case of endocarditis following measles, with purple and bloated countenance, distressing dyspnea, and a pulse so rapid, feeble and fluttering that it could not be counted, the dyspnea was overcome, the heart beats reduced to 120, and regular, and every condition improved in the most satisfactory manner in twenty-four hours, incredible as it may seem, by the use of one drop of the fluid extract of *cactus* every hour.

It is useful in **valvular incompetency** due to muscular weakness, in the feeble heart action following **pneumonia**, **typhoid** and other severe and prostrating diseases. In the feeble heart of exophthalmic **goitre**, it will do all that is expected of *strophanthus*.

Dr. Lydia Ross, of Massachusetts, in the Eclectic Review, reports extensively concerning the action of *cactus* in the **disorders of women**. She claims it to be specific in that form of **oppressive headache**, occurring upon the top of the head, not uncommon at the menopause, resulting also from uterine malposition, or congestion.

It is especially valuable in the **hot flashes** which are so disagreeable during the climacteric. Small doses of the remedy are advisable at that

time, and their influence is often a surprise in controlling this otherwise intractable condition. *Helleborus niger* is an excellent remedy for this condition and they may sometimes be given in conjunction or in alternation. The melancholia, nervousness, irritability of temper, hypersensitiveness, neuralgia, vague fears and fancies, present during the menopause, are all influenced favorably by *cactus*. Its direct influence in strengthening the nervous system, and in toning the heart and circulatory organs, underlies its influence upon these conditions.

Other conditions common to women, relieved by this remedy, are **cerebral congestion**, with weight and pain in the occiput, or in the vertex, **numbness** of the **limbs**, **cough** at the supra sternal notch, pain behind the sternum, **fear of death**, general **plethora** and congestion. Irregularities of the menses, consisting of a flow too early, too dark and thick, too abundant-a flow which ceases upon lying down, with an inability to lie upon the left side, demand its use.

In **cardiac weakness** of a less chronic or more acute character than those conditions affecting the aorta, the agent will be found serviceable, as in the threatened heart failure, due to violent over-exercise, as the **bicycle heart**, a condition not as common as it was when this work was written. It is of great value, as we have previously stated, in the **tobacco heart** of the cigarette fiend or inveterate smoker. Here it is especially useful. We know of no remedy that will take its place. In the treatment of **heart weakness**, common to **masturbators**, and in the feeble heart of the aged, where there are no great organic changes, the remedy is especially advised.

The specific point present in nearly all of these cases indicating the remedy is a vise-like band around the organ affected. It may be the chest, or the stomach, or the heart, bladder, uterus or vagina, or it may be around the body. There is likely in the severe cases to be suffocation, faintness, cold perspiration and great fear of impending danger. If with the above symptoms, there be epistaxis, hematemesis, or hemorrhage from any organ or part, the agent is demanded.

Dr. Lyman Watkins confirms most of the statements made by Dr. Lydia Ross in its use in **hysterical conditions**, and as a remedy to relieve the functional disturbances which the heart exhibits, from menstrual disorders. He believes it to be a most valuable remedy in the rapid and

feeble heartbeat of anemia and chlorosis, greatly facilitating the influence of other indicated remedies. He reports a case of a gentleman of thirty who was suffering from cardiac irregularity of a mild type, accompanied with a persistent and almost excruciating pain in the deep muscles of the back, over the region of the kidneys. Morphine and *opium* had been given persistently, for this severe pain. *Cactus* given for the heart symptoms relieved the pain permanently, in a very short time.

Dr. Coffin, of Indianapolis, uses this remedy to overcome subnormal temperature. He believes that it will prove a satisfactory remedy. I have used it in a few cases with good results, but unless given in large doses it will have to be given in conjunction with strychnine, *nux vomica*, or *ignatia*.

Dr. Felter reported in the Gleaner in 1907 a case of Raynaud's disease where six drops of *specific cactus* was given as a nerve sedative with curative results on the real disorder. He was greatly impressed by the action of the agent. It may be combined with *cimicifuga* or *gelsemium* for nervousness, with *pulsatilla* for hysteria, and may be given with an alkaline remedy in very feeble old ladies who suffer from vertigo and general heart feebleness.

One doctor reports an increase of temperature from ten drops of *cactus* three times a day. Where there is a nervous hyperesthesia with excitable heart action *cactus* will aggravate the symptoms, I believe, whatever they may be.

Cactus in the treatment of heart trouble where there is epilepsy as previously referred to, was fully enlarged on by a writer in the Eclectic Medical Journal for April, 1912. While the remedy is not always used alone in the treatment of epilepsy, it was cured. The doctor believes it to be a very important auxiliary.

Cactus has been advised in the treatment of car sickness and in sea sickness. It might be combined with advantage with *gelsemium* or the bromides. It has also been given in the treatment of morphine habit, but the case reported by Dr. Cox took cactin tablets. Its action in this line should be observed.

Dr. Carey, of Ohio, gives *cactus* with *strophanthus* in combination in cases where the circulation from heart fault is very imperfect, three or

four drops of each.

DIGITALIS.

Digitalis purpurea.

Synonym—Foxglove.

CONSTITUENTS—

Digitalin, digitoxin, digitonin, digitalacrin, a stearopten digitalosmin, and digitaloic acid.

PREPARATIONS—

Extractum Digitalis Fluidum, Fluid Extract of Digitalis. Dose, from one to three minims.

Tincture Digitalis, Tincture of Digitalis. Dose, from five to twenty minims.

Infusum Digitalis, Infusion of Digitalis. Dose, from one dram to one. half ounce.

Specific Medicine Digitalis. Dose, from one-sixth to three minims. Prescribed, from five minims to one and one-half drams, in four ounces of water, a teaspoonful every hour or two.

Physiological Action—*Digitalis* in full doses produces a great rise in arterial pressure, followed by a marked fall. It acts on the inhibitory nerves and on the heart muscle; the increased action being due to vasomotor spasm and to stimulation of the heart itself. A poisonous dose causes depression and a dicrotic pulse, while the immediate effect of moderate doses is to stimulate the heart. Its prolonged use weakens the heart muscle by decreasing its normal nutrition.

When given in frequent small doses, where absorption is immediate, it influences all of the organic functions as a depressant; it produces irritation of the stomach and bowels, increased action of the kidneys, and a marked change in the character, regularity and frequency of the pulse beat. The influence upon the heart is not always uniform in all such cases, but variable and often unreliable. The influence is marked and more immediate if a large dose is given and repeated a few times. The gastric and intestinal irritation is greatly increased, there is purging, violent vomiting, great prostration with dicrotic or tumultous, irregular, erratic and uncertain heart action.

In its general irritating influence upon organic function it may cause so marked an impression upon the renal circulation as to result in spasm of the vessel walls and suspension of renal action-suppression of urine with profound albuminuria.

Therapy—*Digitalis* is the direct heart stimulant. Its influence is sure and plainly apparent in marked sthenic conditions. In **prostration** or profound weakness, in sudden failure from violent injury, from **surgical shock** or from **acute poisoning**, or in the crisis of extreme exhausting or protracted disease, its influence given in conjunction with general stimulants is decisive and satisfactory.

The agent sustains the action of the heart, but does not impart tone as *cactus* does, by increased nerve force and improved nutrition of the organ. Its sustaining power can be maintained by proper administration until other measures supply deficient power, by encouraging reaction, or by general improved nutrition.

The influence of *digitalis* in its stimulant effect is nearly diametrically opposed to that of *aconite*. In therapeutic action the two agents occupy the opposite extremes. For this reason *digitalis*, within the limits of its stimulant action, is a physiological antidote to *aconite*.

Digitalis slows a rapid and feeble pulse in **asthenic fever**. It is a sedative in fevers under those circumstances in which *aconite* is contra-indicated. In prolonged cases where asthenic conditions prevail, and where the temperature remains high, with rapid, feeble, easily compressed pulse or irregular heart action, all the evidences of failure of vital force, *digitalis* is the fever remedy. It controls the pulse, reduces the temperature somewhat, and improves the heart action. *Aconite*, *veratrum* and the synthetic antipyretics will all increase the condition under such circumstances and are contraindicated.

In **pneumonia**, when the disease processes have had full sway, and the heart is unable to properly fill the pulmonary capillaries, and is depressed by the influence of the general disorder, and the general effects of the accumulated carbonic acid within the blood, and is labored and overtaxed and apparently slowly failing, this agent is directly useful. It promptly strengthens the heart and the nervous structure of the pulmonary apparatus at the same time.

In minute doses in children, if it be given with *belladonna* or other heart stimulants, it shows a most desirable influence in this class of cases, but should be stopped as soon as these results are obtained, that no untoward symptoms may occur.

Digitalis is a remedy for **passive congestion** where the blood stasis has occurred from feebleness and failure of the circulatory organs. It exercises a stimulating influence upon the entire apparatus; through its power of increasing heart action it imparts renewed force and an improved capillary tonus in every part. In such cases its influence resembles that of *belladonna*, although not so marked nor permanent.

In **valvular diseases** of the heart, with muscular relaxation and feebleness, it is a good remedy, but not always the best. It sustains the power for a time in those cases where there is **stenosis**, and where compensatory dilatation has previously occurred. In feeble, irregular and **intermittent heart** it is frequently prescribed with excellent results.

Like *cactus*, it is not a remedy for violent heart action from over action of the nervous system, or from sthenic conditions.

Cactus is valuable, indeed, in irritable heart from indigestion; in palpitation and irregular action from gastric irritation, while in this case *digitalis* exercises no beneficial influences whatever. On the contrary, it is apt to increase the gastric irritation. *Cactus* soothes the irritable stomach and promotes normal functional operations.

Digitalis is not found in the urine and does not directly influence the secretory or the excretory functions of the kidneys. Its apparent influence upon these organs is due to the improved blood pressure from its direct influence upon the heart, inducing increased heart action. **Renal congestion** is overcome because the increased heart impulse drives the blood through the renal capillaries with renewed vigor, and there is thus a copious flow of the urine from improved renal circulation. Under these circumstances only, is it a valuable remedy in dropsy. In **cardiac dropsy** it acts most promptly if given in infusion in small and frequently repeated doses. Close watch must be kept for cumulative action. In dropsy from **post-scarlatinal nephritis**, a dram or two of the leaves in a pint of water is thoroughly steeped. Of this from a teaspoonful to a tablespoonful may be given every two or three hours.

In general dropsy from heart disease there is deficient capillary circulation, especially when lying down; the pulse is irregular, intermittent and feeble, the urine is small in quantity, with a large percentage of albumen. Its power over the heart influences this entire train of symptoms directly. Patients taking *digitalis* in full doses for an immediate effect should remain in the recumbent position. This position greatly favors its sedative and tonic action, and patients have died upon being raised to a sitting posture immediately after taking an extreme dose of this agent. Syncope, especially in children, is common at such a time. The profound influence of the remedy prevents the occurrence of the natural change in the action of the heart, from a prone position to the sitting posture. *Digitalis* may exercise no apparent influence upon the system when proper doses are given regularly for some days, until suddenly violent poisonous effects may appear, with irregular and greatly depressed heart action, vertigo, extreme wakefulness, vomiting, irritation of the bowels, with pain and sometimes violent purging.

The cause or manner of its accumulation is variously explained and is not well understood. Several theories are advanced, none of which are satisfactory. No other heart remedy has these objections. Cumulative action often shows itself first by the influence of the agent upon the kidneys, in suspending or restraining their action. Consequently if desirable results from the use of this agent do not appear, and there is a decrease in the quantity of urine passed, the agent should be suspended, at least for a time.

CRATAEGUS. *Crataegus oxyacantha.*

Synonyms—Hawthorn, Haw, English Hawthorn.

PREPARATIONS—

Specific **Medicine Oxyacantha**; dose, from five to twenty minims.

Fluid Extract Oxyacantha; dose, from ten to fifteen minims.

Normal Extract; dose, from four to eight minims. It is given in water and may be repeated every hour or every two or three hours. In extreme cases it may be given hypodermically.

Therapy—This agent has not yet received much attention from the profession. Dr. Jennings, of Chicago, in October, 1896, published in

the New York Medical Journal a letter containing the following statement:

“To this date I have successfully treated with *crataegus* one hundred and eighteen patients who were suffering with various forms of heart disease, not including fatty degeneration and tachycardia, and of the two latter forms of the disease. I have fourteen still under treatment.

“Of one hundred and fifty-seven reports from other physicians using the drug in their practice, all but nine are commendatory and favorable, and of the nine, eight of them discontinued its use because the medicine made them sick at the stomach, and the ninth, a physician, said it gave him a fullness in the head. If these latter had reduced the dose to five or six drops it would have had full therapeutic effect, and would have obviated the nausea, and they, too, could then have reported favorably.

“From these results my deductions are that *Crataegus Oxyacantha* is superior to any other of the well known and tried remedies at present in use in the treatment of heart disease, because it seems to cure while the other remedies are only palliative at best.

“*Crataegus* may be regarded as specific, or the nearest approach to a specific, in the following cardiac diseases: Angina pectoris, valvular deficiency, with or without enlargement, endo-myocarditis and pericarditis, tachycardia, rheumatism (so-called) of the heart, cardiac neuralgias, from whatever cause, palpitation, vertigo, apoplexy, dropsy, and functional derangements.

“The dose of ten to fifteen drops, heretofore announced, is too much, and a dose of from four to eight drops, four times a day, is to be substituted.”

Jennings advises the use of tonics and auxiliary agents to meet the indications in extreme cases of heart disease, where a long train of symptoms has developed from the imperfect circulation and deficiency of oxygenation of the blood. He says in treating heart disease, he was strikingly impressed with the rapidity with which cardiac dropsy disappeared under the influence of *crataegus*. From this he was naturally led to believe that the same treatment would be equally efficacious in dropsies not of cardiac origin, and he now confirms,

clinically, this obvious conclusion. He has also used *crataegus* with the greatest of success in albuminuria or Bright's disease, and in diabetes mellitus and insipidus.

Dr. Joseph Clements, of Kansas City, Mo., wrote to Dr. Jennings for information concerning the remedy, and began taking it. The report of his ease was published in the Kansas City Medical Record in April, 1898.

It was an extreme case of angina pectoris, with regurgitation, edema and a train of symptoms that pointed to immediate dissolution. After using *Cactus* and other well known heart remedies without result, he obtained some of Jennings' fluid extract, and was cured in a few weeks, with permanent relief from the pain.

Dr. Clements believes that his experiments have shown that the drug also has a wonderfully solvent power on crustaceous and calcareous deposits in the lumen of the arteries, resembling the effect of iodide of potassium on the nodes of syphilis.

He says further, "a drug whose physiological action and therapeutic power are solvent and absorptive to the diseased accumulations, and tonic and stimulative to its nutritive nerve supply, must approach the nature of a specific as near as anything can approach it, in the disease under discussion."

Some observers claim that the use of this remedy in aged persons, with arteriosclerosis, angina pectoris, etc., will prolong their lives beyond the time when dissolution would have been certain had those conditions remained.

What would be the effect of the medicine in fatty degeneration, atheroma, etc., I am not prepared to say. I think further observation will be necessary before it would be safe to go far with it. In small doses, however, its tonic effect upon the nerve supply, I think, could not be otherwise than helpful.

In beginning heart mischief after attacks of inflammatory rheumatism we will find a promising field of usefulness for this new remedy.

Those who have since used the remedy believe it to be a true heart

tonic and restorative and capable of exercising an immediate soothing and strengthening influence upon that organ, thereby improving the circulation, and augmenting oxygenation of the blood. Future experience will determine its merit. I will now say, as I did in 1907, this remedy, although of great service in selected cases, when used in combination with *cactus* or other heart agents, when used alone has hardly met the anticipations of those who were carrying out the suggestions of the original introducers of this remedy. It will meet a few indications satisfactorily. I have prescribed it in the **heart weakness** with valvular murmurs, great difficulty in breathing, persistent sighing respiration, which accompanies **neurasthenia** or nervous weakness, brought on in young people, from violent overstrain, or prolonged extreme nervous tension. The results of the sudden breakdown, being similar in every way to other cases of neurasthenia.

One case was completely cured in about six weeks, by the use of this remedy, and the arsenate of strychnia. The valvular murmurs showed a progressive decrease until they had disappeared entirely, as did also the extreme sighing and difficult respiration. Other cases complaining of heart irregularity with mild valvular trouble, have been materially benefited by *crataegus*.

That it has an important place in our therapeutics, we have no doubt, but its exact place is not yet determined.

Dr. Jernigan experimented very extensively with *crataegus* and believes it is superior to many heart remedies when correctly prescribed. He believed it to have a broader field of action; no accumulative effect; no toxic influence; no contraindications, and acts in harmony with the other remedies.

It has a general curative effect upon the functional action of the central nervous system; upon every part of the circulatory apparatus; upon the urinary organs, and the processes of metabolism. It dispels gloomy forebodings, increases the strength, regulates the action of the heart, causes a general sense of well being. In its mental influence he thinks he sees a resemblance to the action of *pulsatilla*, and very often prescribed the two remedies in conjunction.

The doctor is sure he has seen excellent results from *crataegus* in the

treatment of **diabetes insipidus**, especially in children, a difficult condition to control. He has used it also in **exophthalmic goiter** with good results. He gave ten drops of the specific medicine every two hours for a while, controlling a form of epilepsy that showed itself with the other symptoms. He believes the remedy given for diabetes influences innervation, improving the circulation, especially in the capillaries when there were cold extremities. All of his cases confirmed his faith in the remedy as an important one for this condition.

Dr. Dwire, of Ohio, in his report confirms all of Dr. Jernigan's statement in its action directly upon the heart.

Dr. Sharp, of Ohio, says that he finds *crataegus* indicated in the usual diseases of the heart, and gives it in conjunction with the very best possible treatment to put the system into normal condition with proper diet and attention to the action of the skin, kidneys, and bowels. He reports three cases of serious heart disease in patients above 78 where the results were highly satisfactory.

Dr. Stouffer, of Pennsylvania, suffered from a number of mild attacks of **paralysis of the left side**. The heart was directly influenced; oppression heavy; constriction of the throat; all symptoms increasing by exertion. He combined *ceataegus* and *scutellaria*, two parts of the former to one part of the latter, adding oil of *peppermint*, a few drops for the flavor. Of this he took a drop or two on his tongue very often, or as needed, obtaining relief, not secured by any other measure.

A greatly **enlarged heart** in a young man of sixteen with the symptoms usually present in older patients with **precordial bulging** was permanently benefited until a permanent cure seemed to be possible, by five drop doses of *crataegus* every three hours persisted in, over a period of several months.

Dr. Osborne cured himself of a peculiar **asthmatic** difficulty of the spasmodic type. He had enlargement of the right side of the heart, the oppressed breathing at times being very severe. In a paroxysm, he took eight drops of *crataegus* every fifteen minutes with almost immediate relief. There was no complete cure but much benefit.

Young women, who from any cause suffer from mitral insufficiency, especially if rheumatism is present or the conditions that lead to it,

may be cured by proper care and the use of five drop doses of *crataegus* three or four times a day.

STROPHANTHUS. *Strophanthus hispidus.*

CONSTITUENTS—

Strophanthin. The active principle of the plant, a glucoside, a white crystalline powder, neutral, bitter, insoluble in water, insoluble in ether and chloroform. Dose, 1/600 to 1/200 of a grain.

Strophanthidin and kombic acid.

PREPARATIONS—

Tincture Strophanthus is prepared from the seeds alone. Dose, 1 to 10 minims administered cautiously .

Specific Medicine Strophanthus is made from the seeds is of full strength, and should be given in smaller doses than the official tincture. The dose is from one-half to five minims.

Granules of Strophanthin containing 1/500 of a grain are prepared and may be given, two or three granules every half-hour in extreme cases, until the force and power of the heart are improved, then every two hours.

Administration—In administering the alcoholic tinctures of *strophanthus* it should not be prescribed in an aqueous or syrupy menstruum, as the agent precipitates in these solutions. It should be dropped from the bottle into the menstruum at the moment of administration.

Physiological Action—*Strophanthus* is the Kombe arrow poison, acting vigorously upon all muscular structure and specifically upon the muscular structure of the heart.

Its action on unstriped muscular fiber is similar to that of *ergot*. In some cases it affects the respiratory muscles so profoundly as to produce respiratory paralysis and death.

Strophanthus, in small doses, renders the pulse stronger and less frequent; arterial tension is increased. In toxic doses the systolic contractions become very frequent and very brief, followed, consequently, by enormous increase of blood pressure, to which is

added sudden cessation of the heart in systole. Respiration ceases last. It exercises an irritating influence directly on the muscle fibers of the heart. Its action on the heart is the same as that of muscarine. It does not act on the vaso-constrictors.

Under physiological conditions, the diuretic action is uncertain. Under pathological conditions, it renders the pulse less frequent, more vigorous and more regular; it promotes diuresis, causes the disappearance of dropsical swellings, and improves the subjective condition of the patient.

Unlike the most of the heart remedies, the effects of *strophanthus* seem to be caused by the agent being brought into direct contact with the muscular structure of the heart itself, after absorption into the blood. There is excellent authority for the belief that it neither acts through the medulla nor through the inherent ganglionic heart centers. It acts, by contact. It causes violent contraction of the heart muscle in extreme cases, being the only one of the heart poisons to leave the heart in systole after death from its use. It does not influence the vascular system.

The **diuretic influence** of the agent, if observed, is quite permanent. It increases the blood pressure in the kidneys to a great degree through its influence on the heart muscles, and thus directly upon the capillary circulation. It is also direct in its action upon the secreting and excreting mechanism of the kidney; by this influence its diuretic action is explained.

Specific Symptomatology—The direct indications for this agent are a weak and rapid heart from muscular weakness, inactivity or lack of contractile power. Apparently *strophanthus* acts similarly to *digitalis*, but it is not a cumulative poison. Pius, of Vienna, says in **disturbances of compensation**, *strophanthus* acts well. The pulse becomes stronger and diminishes in frequency, respiration becomes normal and dyspnea less marked.

Therapy—In **rapid and feeble heart** *strophanthus* reduces the pulse and increases the power. In some cases it also reduces the temperature.

Dyspnea is relieved in a few minutes after its administration, and the

pulse becomes stronger and more regular in less than an hour. Its influence is exceedingly persistent and can be depended upon sometimes for weeks after the agent is discontinued.

In **asthma** the paroxysm is shortened and prevented, diuresis begins, and edema, disappears, not to reappear save in exceptional cases. The patient experiences a general relief.

It has been employed in **fatty degeneration of the heart**, in acute **endocarditis**, in **atheroma** of the arteries, in chronic **Bright's disease**, in **ascites** produced by cirrhosis of the liver, and certain pelvic tumors, in the enfeebled heart after acute and chronic fevers, in acceleration of the pulse, and **reflex palpitation** of neurasthenia, hysteria and chlorosis.

Strophanthus is **contraindicated** in ascites of tumors, hepatic, splenic and pelvic, in respiratory and circulatory troubles of vasomotor origin, in active hyperemia, and in cases in which there is a tendency to visceral hemorrhages.

In its influence upon the stomach it improves the digestion and increases the appetite. Like **digitalis** it may induce gastric irritation if given too long or too frequently, but this effect rarely occurs. It does not increase nerve tone.

In the Indian Medical Gazette, Dr. Sanders reported seventeen cases of **cholera** treated with tincture of **strophanthus**, all successfully. The results were quick recovery from collapse and a gradual rise of temperature.

Vacci claimed that in cases of **persistent anemia** of a chronic character, in acute anemia from flooding, especially where the heart's action is feeble and imperfect, he has found **strophanthus** to materially assist the **appropriation** of iron. In some cases where iron had been given a long time, causing insomnia, general nervousness and palpitation with indigestion where it seemed necessary to stop the iron entirely, he has used Blaud's pill with tincture of **strophanthus** with excellent results. Other forms of iron would probably act equally well.

Strophanthus has been prescribed in many cases of **goitre**, two drops of the tincture three times daily were given with a rapid reduction in the

size of the enlargements, and in some cases a cure. In **exophthalmic goitre** it has accomplished marked results and has become a permanent addition to the therapeutics of this disorder. The dose in these cases is from five to ten drops three or four times daily.

Urticaria is reported as having, been cured with *strophanthus* given in full doses. It is credited with the cure of several cases of **tetanus**. Clapp, in the London Lancet, reported a cure of traumatic tetanus after antispasmodics had entirely failed. In this case it had a marked diuretic effect.

Strophanthin is a mild local anesthetic. It is only of service in operations upon the eye and not of great service here. Its effects are slow in appearing and remain long. In animals a cloudiness of the cornea is apt to appear after its use.

CONVALLARIA. *Convallaria majalis.*

Synonym—Lily of the Valley.

CONSTITUENTS—

Convallarin, Convallamarin, both Glucosides.

PREPARATIONS—

Extractum Convallariae Fluidum, Fluid Extract of Convallaria.
Dose, from five to twenty drops.

Tinctura Convallaræ. Dose, from five to thirty minims.

Specific Medicine Convallaria is always made from the fresh root. It may be given in doses of from one to five minims in water, frequently repeated, giving good results, prescribed from one-half to two and one-half drams, in four ounces of water.

All the preparations are stable in water except the fluid extract of the root. An infusion of the entire plant was used in the most of the original investigations made. It yields good results.

The Glucoside Convallamarin is given in doses varying from $\frac{1}{12}$ of a grain to one grain. The granules of $\frac{1}{6}$ grain- afford an excellent form, as they may be dissolved in water if a smaller dose is desired, or one or

more granules may be given at a dose.

Physiological Action—A poisonous dose to a child produced great restlessness, rolling and tossing, continuous trembling of the arms and legs, and one attack of general convulsions. There was stupor, from which the child was roused by the greatest effort, to immediately relapse into it again on being left quiet. The pupils were moderately dilated, the temperature became subnormal, the pulse rapid and exceedingly irregular. The respiration was very regular but rapid, shallow or superficial. The face was flushed. The agent induced no diuretic or diaphoretic influence in this case and no gastro-intestinal irritation. Bogoyavlenski's extensive observations of the action of *convallaria* upon warm-blooded animals were as follows: It induces a sudden retardation of the cardiac contractions, with increase of blood pressure. After the period of retardation there follows a strongly pronounced acceleration of the contractions with still greater increase of blood pressure, arrest of heart beat with diminution of blood pressure. When the vagi are previously divided the precursory retardation does not take place. If, during the period of acceleration of the contractions, the peripheral ends of the vagi are irritated, the usual effect on the heart is not observable.

In the left and right ventricles there was found an extravasation of blood under the endocardium. Under its influence the quantity of urine is much increased, and dropsical exudates are promptly absorbed and the weight of the patient lessened. The diuresis induced by the remedy continues long after cessation of its administration. The pulse grows fuller, more regular, and in some cases slower. It is not poisonous and has no cumulative action.

Specific Symptomatology—The direct therapeutic indications are **organic heart weakness** with **valvular inefficiency**, especially if accompanied with **dropsy**. It is probably an efficient remedy for **dropsical infiltration** wherever located, if due to inefficient heart.

Therapy—It strengthens the heart's action, slows a rapid and feeble pulse, corrects the rhyme and rhythm, improves the tone and increases the power of the heart, as evidenced by increased tonicity throughout the entire capillary circulation. It may be given for a few days and then discontinued for as many days when its influence remains. Its influence is exercised in a regular, steady and permanent manner.

Its efficiency in **dropsy** is evidenced when there is sluggishness of the general circulation, with extreme inefficiency of the capillary circulation and greatly diminished blood pressure. In these cases, if the kidneys are not seriously diseased, it can be made to induce extreme diuresis and give prompt relief.

It can be given with impunity and small doses should not be relied upon in extreme cases. If prompt effects are desired the tincture in full doses can be given in hot water, or an infusion of the entire herb will yield the best results.

In some cases of chronic nephritis the kidneys will fail to respond to the action of the agent. But these cases are necessarily extreme ones, as in many cases of **Bright's disease** most beneficial results are obtained from the use of this agent.

It overcomes **general depression**, favors elimination, adds power and regularity of action to the heart, overcomes distress of breathing, conduces to rest and sleep, and induces a general sense of improved well-being. It is an excellent remedy with which to improve the tone and vigor of the **heart** after the depressing effects of **protracted fevers** or violent acute inflammation, especially of the lungs and bronchi. It is useful also in the enfeebled heart of **phthisis pulmonalis**.

It is of much value in rheumatism, especially when the heart is involved. In **rheumatic carditis** or **pericarditis** it serves a double purpose. It strengthens and improves the tone of the heart, and favors the elimination of morbid products which cause the inflammation. But few remedies will act more efficiently. If there is effusion within the pericardium its influence will be quickly observed.

To sum up the influences of *convallaria*: It is used to excellent advantage in the **tobacco heart** from cigarette smoking; in the **bicycle heart** from overstrain; in **asthmatic breathing** from enfeebled heart, especially in **chronic asthma**. It does not, like *digitalis*, irritate the stomach unpleasantly. On the contrary, it is of much service in that form of dyspepsia in which there is extreme torpor of the stomach, with pale, flabby mucous membranes of the mouth, broad, thick tongue, with a heavy, dirty white coating. In conditions where the tongue is red and thin, with elongated papillae, redness of the tip and edges, it is

contraindicated. It is contraindicated also in fatty degeneration of the heart.

Germain-Sée mentions the following therapeutic indications:

In palpitation resulting from a state of exhaustion of the pneumogastric nerves—**cardiac paresis**, the most frequent source of palpitations.

In simple **cardiac arrhythmia**, with or without hypertrophy of the heart, with or without lesions of the orifices or valves of the heart.

In **mitral constriction**, especially when it is accompanied by failure of compensation on the part of the left auricle and right ventricle, the contractile force augments visibly under the *convallaria*, as the sphygmograph testifies.

In **mitral insufficiency**, especially where there are pulmonary congestions, and when, as a consequence, there is dyspnea, with or without nervous trouble of the respiration.

In **dilatation** of the left ventricle, without compensatory hypertrophy, it restores energy of the heart, which tends to become more and more feeble and dilated. In **dilatations** of the heart, with or without fatty degeneration, with or without sclerosis of muscular tissue, the indications for *convallaria majalis* are clear.

In all **cardiac affections** indifferently, from the moment that watery infiltrations appear, *convallaria* has an action evident, prompt and certain.

In lesions with **dyspnea** the effect is less marked. To combat cardiac dyspnea, *convallaria* is inferior to *Quebracho*. The combination of *convallaria majalis* with iodide of potassium in the treatment of **cardiac asthma** constitutes one of the most useful methods of treatment. One is often obliged to suspend the employment of *digitalis* on account of vomiting, digestive disturbances, cerebral excitation, the dilatation of the pupil, which it so often produces after prolonged use. No such results obtain from the use of *convallaria*.

LYCOPUS.

Lycopus virginica.

Synonym—Bugleweed.

CONSTITUENTS—

Volatile oil, bitter principle, gallic acid, tannin.

PREPARATIONS—

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

The principal therapeutic influence of *lycopus* seems to be upon the thoracic viscera, and consequently upon all lesions having diseases of these organs for their basis. The use of the *lycopus* may be confined to certain fixed indications with better results than follow its indiscriminate use in any general class of cases, regardless of conditions.

Specific Symptomatology—In diseases of the **heart**, either functional or organic, marked by **irritability** and **irregularity** of the organ, **dyspnea**, feeling of oppression in the cardiac region, its administration is followed by gratifying results. Hypertrophy and dilatation have been known to undergo marked diminution in consequence of its administration.

Therapy—It possesses tonic, sedative, astringent and narcotic properties, and has been successfully used in **incipient phthisis**, **hemoptysis**, etc. It acts like *digitalis* in reducing the velocity of the pulse, but has no cumulative effects. In pericarditis and endocarditis its sedative action lessens the frequency of the pulse, irritability, and its attendant inflammation, in a manner equaled by no other remedy.

Cases of **exophthalmic goitre** are reported as having been cured by *lycopus*, and it would be well to give it a thorough trial in this most intractable disease.

Goss said that in palpitation and valvular disease of the heart, *lycopus* is good; in **hemoptysis** it is so positive in its action that he seldom used any other remedy. He considered it a sedative as well as an astringent in its action, controlling the capillary circulation by diminishing the caliber of the vessels, thereby reducing the flow of the blood.

In diseases of the respiratory apparatus *lycopus* has been found to be very useful. Hemoptysis, associated with rapid and tumultuous heart's action, yields readily to its influence, as does **hemorrhage** from any part. Hale lauds *lycopus* highly for its efficiency when used in cases of **incipient phthisis** and in chronic inflammatory diseases of the lungs. By regulating the heart's action and equalizing the circulation in the lungs it mitigates or arrests the local inflammation.

Chronic **irritable cough**, arising from the smouldering inflammation in the lungs, can be cured by its administration. It has been used repeatedly in the high temperature of typhoid fever with uniformly good results; it not only effectually reduced the excessive heat, but in so doing, it did not depress in the least the vital forces of the patient.

To a certain extent it acts on the heart as a nerve sedative by lessening its action, also by constricting the blood vessels; hence, diminishing the flow of blood. We have in this valuable remedy much that is expected of *aconite* or *veratrum*, antipyrin, antifebrin, as an agent to reduce the heat in high temperature without many of their baleful effects. A dose of from one to five drops may be given every two to four hours. It is not necessary to give it regularly-only as indicated.

It is also good in **hepatitis**, if complicated with pneumonitis, in two-drop doses, once every three hours. In **hematuria**, if associated with calculi or catarrh of the bladder, *lycopus* is of benefit alternated with *chimaphila umbellata*.

Dr. Halbert and others combine *lycopus* with *chionanthus* and perhaps *belladonna* in the treatment of diabetes.

They claim that it influences patients that are naturally fleshy, previously very heavy, and who lose their excess of weight by this disease.

It is decidedly beneficial in the treatment of **diabetes**, curing a few cases after all other remedies have failed. It has proven beneficial in **chronic diarrhea** and **dysentery**, inflammatory disease of drunkards and in intermittents. It promotes digestion, invigorates the appetite, allays gastric and enteric irritability.

Dr. Langford says that *lycopus* will benefit more **gastric difficulties**

than any other remedy that he has ever used, but does not specify the most particular indications that would suggest it.

Dr. Eads gives *lycopus*, fifteen drops every thirty minutes with cold compresses to the nape of the neck, for persistent nose bleeding.

Dr. LeBlanc lays great stress on its action in full doses in any passive hemorrhage.

There are many cases of scalding urine with frequency from vesical irritation that will be overcome by *lycopus* in full doses.

GROUP II.

Agents Acting Upon the Heart.

CHAPTER II.

SPARTEINE
CAFFEINE
APOCYNUM
ANHALONIUM
ADONIS
IBERIS AMARA

SPARTEINE. Formula- $C_{15}H_{26}N_2$.

Description—Obtained from the distillation of a concentrated infusion of the tops of the *cytissus scoparius*, or from the mother liquor after precipitating scoparin. It is a colorless liquid of an oily consistence, soluble in alcohol, ether and chloroform.

Sparteine Sulphate.

Description—A crystallized product from the action of sulphuric acid on sparteine. It is crystalline, or a white powder, neutral, odorless, bitter, deliquescent, soluble in water and alcohol. Dose, from one-tenth to one-half of a grain.

Physiological Action—The agent has a profound influence upon the nerve centers, thence upon the heart. It quickens the pulse rate, increases arterial tension, augments the force of the muscular contraction of the ventricles, and increases the movement of the blood through the arterioles. It stimulates the action of the kidneys to a marked degree and produces mild diaphoresis. In overdoses it produces muscular trembling, incoordination, emesis, catharsis, and finally paralysis of the respiratory and motor centers. The heart is stopped in systole.

Therapy—Sparteine is a remedy for weak heart with muscular feebleness. It is useful in palpitation from heart strain and exhaustion. It has been used in Graves' disease, and is thought to be of much value in

this trouble. Simple goitre also may be benefited by it. It produces its effects quickly, and the influence remains for several hours. It is a diuretic, removing dropsical effusions which result from feebleness of the circulation. It is not a remedy to be depended upon in all cases.

CAFFEINE. Formula $C_8H_{10}N_4HO_2O_2$.

Synonym—Methyltheobromine.

Occurrence—The proximate principle obtained from dry *tea* leaves, *coffee*, *guarana sorbilis*, and from some other plants.

Caffeine citrate is formed by the solution of caffeine in citric acid. It is probably a mixture of the two substances and not a chemical compound. It is a white powder, odorless, slightly bitter, and acid in reaction.

Mixed freely with water it is unstable and apt to precipitate. With only three parts of water it forms a syrupy solution, more permanent. When the precipitated liquid is increased by the addition of more than twenty-five parts of water, it will then remain in permanent solution.

Physiological Action—Caffeine acts upon the reflex centers of the spinal cord. It increases the temperature at first, afterwards diminishing it. It stimulates the cerebral functions, causing rapidity and facility of mental action. It produces nervousness and wakefulness. It has no true tonic effect. It raises the blood pressure and increases the pulse rate, acting as a direct stimulant to the muscle of the heart. It increases the solids in the urine by stimulating the epithelium of the tubules.

It actively stimulates the respiratory centers. This influence is required where there has been marked depression of the nervous system, and where motor depressants have been taken as poisons. It is given in conjunction with morphine to prevent any after depressing effect of this agent on the heart's action. It is given in many cases of headache, the effervescent citrate being a popular remedy, one used by the laity almost indiscriminately.

Therapy—Caffeine is a direct **heartstimulant**. It is given to support the heart in extreme feebleness or threatened failure. It is given in conjunction with remedies that are apt to have a depressing effect upon the heart, to sustain it against such depression. In **feeble heart** from dilatation, valvular insufficiency or fatty degeneration, and in dropsy resulting from the above conditions, with deficient capillary tonus, this agent is an excellent remedy.

In **exhaustion** from prostrating disease, with weak heart, this agent will exercise a positive influence in the general restoration of the patient, through its strengthening action on the heart.

It is given in some cases of **asthma**, where there is exhaustion from feebleness of the respiratory nerves.

It is given to dispel the **drowsiness** common to some individuals after eating a hearty meal. It is a remedy for melancholia, hypochondriasis and despondency.

It is a valuable remedy in general **lithemic** conditions, as it assists in elimination of urea and uric acid.

The main objection to the use of the remedy in these conditions is its inclination to produce persistent wakefulness. In extreme doses it sometimes produces, a mild form of delirium, with palpitation, general tremor and tinnitus aurium.

It is important in **uremic coma**, which causes depression of the heart and respiratory functions. It should be given hypodermically, in doses of from one-eighth to one-half a grain. It may be used in conjunction with other active eliminants.

Caffeine Citratis Effervescens—Effervescent citrate of caffeine. This popular combination for the administration of caffeine is made by triturating together a hundred and fifty-four grains each of caffeine and citric acid, eleven and a half ounces of bicarbonate of soda, ten and a half ounces of tartaric acid and twelve ounces of sugar, finely powdered. After thorough trituration, alcohol is added in sufficient quantity to make a soft paste. It is rubbed through a No. 6 galvanized iron sieve, and when dried is reduced to a coarse powder. It contains one per cent of caffeine. It is kept in a cool, dry place, in well-stoppered

bottles, and is given in teaspoonful doses dissolved in a glass of water. It is a most pleasant method of administration. It is more commonly prescribed in the treatment of **headaches**, especially if caused by an acid condition of the stomach.

In mild cases of **palpitation** of the **heart** of a functional character, usually depending upon gastric derangement, this agent will be found advantageous.

APOCYNUM. *Apocynum cannabinum.*

Synonym—Canadian Hemp.

CONSTITUENTS—

Apocynin apocynein, tannin, gallic acid, gum, starch, resin, wax.

PREPARATIONS—

Decoctum Apocyni, Decoction of Apocynum. Dose, from half a dram to one dram.

Specific Medicine Apocynum. Dose, from half of a minim to twenty minims.

Administration—It may be necessary to vary the form of the remedy in its administration in certain cases before a marked result occurs. The specific *apocynum* seldom fails. It may act promptly in doses of from one-half to one drop frequently repeated, and it may be necessary to give five drops or more at a dose, but close watch must be kept on its action upon the bowels that it be not too severe and prostrating. The agent has a general tonic influence which so sustains the body forces that considerable violence of cathartic action can be obtained in some cases, without marked depression, but usually this violent action should be avoided.

Fluid extracts are usually unreliable and uncertain in their action, some acting promptly, others producing marked irritation and depression, and still others being inert. If the fresh root of the *apocynum* can be obtained, an infusion of one ounce to the pint of water may be made, and from a teaspoonful to a tablespoonful of this infusion given often and increased or diminished as indicated. In some cases very small doses are very efficient. A tincture carefully prepared from the

fresh root sometimes is the superior preparation.

While specific medicine *apocynum* and the normal tincture of *apocynum* are both excellent forms of this remedy for administration, there are some cases in which these produce considerable irritation of the stomach and intestinal canal. A distilled extract of *apocynum* is now supplied, which is nearly tasteless; can be administered in larger doses, and in many cases produces more satisfactory results than any other form, as it has less irritating properties. This fact is indeed important.

Physiological Action—Whether this agent acts most directly upon the heart or upon the kidneys has been an unsettled question except to those who have used it in cases where the heart was greatly enfeebled and relaxed, and when dropsy resulted from that condition.

It is certainly an excellent heart tonic in such cases, improving the strength of the heart muscle, the character and force of the pulse, and increasing to a most marked extent the arterial tonus. We have taken the initiative in introducing it among the specific heart remedies. It strengthens the nerve force, improves the respiration, and facilitates oxidation of the blood. Its influence is similar to *convallaria* or *digitalis*, and it acts in harmony with *cactus*, the influence of both being increased.

This agent is a violent cardiac poison. Given in large doses, it stops the heart in complete systole, and in small doses slows the beats and strengthens their force. It contains an active principle which acts as does *digitalis*, with, however, these differences, that it is not cumulative, and when administered in a medicinal dose it does not give rise to any inconvenience excepting some headache. Froment has reported ten instances of diverse cardiac disease in which the pulse was slowed, the rhythm was made regular, the arterial tension was raised, and edema disappeared; in certain cases it acted when *strophanthus* and tincture of *convallaria* had failed. It seems to be useful in certain febrile conditions where the frequency of the pulse gives rise to anxiety, notably so in pulmonary tuberculosis, although a large dose may increase the diarrhea if present.

Horatio C. Wood conducted independent experiments to determine the physiological action of this remedy, under the auspices of the National

Academy of Science. His observations have confirmed my early and later statements concerning the direct influence of *apocynum* upon the heart. He states that, notwithstanding all early observations were made with reference to the action of this drug upon the kidneys, his experiments prove that its influence is directly upon the circulation. Injected into the veins of a dog, there was a marked slowing of the pulse with a rise in the blood pressure, usually, but in some cases the slowing of the pulse was so great and so immediate as to prevent any rise of blood pressure. These effects, he asserts, are in every way similar to the action of *digitalis*, and he is impressed that there is a marked similarity between the action of this drug and *digitalis*.

His experiments made to determine whether the stimulation was directly upon the heart, or upon the circulation, through the vaso-motor mechanism, convinced him that the drug stimulated the cardiac muscle directly, bringing about a cessation of cardiac action, if persisted in, to over-stimulation, the contractions of the heart ceasing in permanent systolic spasms. He believes the remedy acts also upon the arterial walls. His studies further show that despite the enormous stimulation of the heart, the circulation through the kidneys is diminished rather than increased. This he attributes to a narrowing of the lumen of the blood vessels of the kidney.

He believes that the increased flow of urine under *apocynum* is due to the regulation of the circulation at large, a condition similar to that induced by *digitalis*. The pulse is slowed by the action of the remedy through stimulation of the cardiac inhibitory centers of the medulla.

His final conclusions are that *apocynum* is a powerful stimulant to the circulation, and one of which great practical use can be made. However, because of its irritating action upon the stomach, he thinks its use will be limited, but we do away with this objection entirely, first by the administration of the specific medicine in small doses and, second, by the use of the distilled extract, as stated, which is devoid of irritating properties.

Felix-Kramer of Germany has made the following statements:

“The active principle of *apocynum*, according to Liebreich and Langaard, is a glucoside called apocynin, the action of which is, like that of *digitalis*, a cardiac poison. Like *strophanthus*, *nereum oleander*,

and *vinca minor*, the plant belongs to the *Apocynaceae* family.

The reports on this remedy so far as I have been able to follow them are unanimous in designating it as a cardiac tonic and diuretic. According to Gwovdinski, of Kiev, *apocynum cannabinum* is known in Virginia as a household remedy and is used by some American physicians by preference as a diuretic. The dose according to this report is 15 drops, t. i. d., and given during the period of compensatory disturbance it caused no unpleasant side-effects.

According to Alesejew the effect of the remedy appears, in proper cases, in two or three days. If no remedial action appeared in five days Alesejew made no further use of the remedy. He prescribed small doses (from three to five drops) three to four times a day. After larger doses he met at times gastric disturbances and pains in the cardiac region. Cumulative effects he did not encounter. The dosage, according to Golubin, is five drops three or four times daily.

In Pawinsky's (of Warsaw) notices about *apocynum cannabinum* the observations he made of the different effects of this remedy from those of *digitalis* on the vagus are interesting. He found that *apocynum cannabinum* acts more readily and energetically on the innervation of the heart than *digitalis*, but the effect of the latter is a more persistent one. He would, therefore, use the remedy at shorter intervals, especially in cases of arrhythmia.

His dosage is somewhat higher: Eight to ten drops of the fluid extract two to three times a day. However, one should always begin with small doses. Pawinsky rarely met with unfavorable effects on the digestion from this remedy, of which effects some authors speak very extensively. Cumulative effects he found none.

The indications for the remedy, according to the writer mentioned, are valvular lesions and affections of the heart muscle at the time of disturbance of compensation. A. Robin gave thirty drops of this remedy three times daily.

Its influence upon the **kidneys** is exercised, however, when heart symptoms are not conspicuous. It produces a greatly increased flow of limpid urine without irritating the kidneys. There is no hematuria or other evidence of forced action or marked renal congestion. In

profound doses it has caused suppression of the urine.

The agent exercises a **hydragogue influence** both upon the **kidneys and bowels**. In large doses it irritates the stomach, producing violent prostrating emesis. As an emetic or cathartic it is too harsh and should not be used. We have more efficient and milder remedies.

Dr. Gregory believes *apocynum* acts directly on the kidneys and when they are acting insufficiently he uses it as a stimulant, believing that it increases the solid matter thrown off. Dr. Moercke, of Burlington, believes that the remedy will not act when dropsy is induced by malignant diseases, but may perform miracles where the patient is dying from incurable heart lesions with general dropsy. He finds it of great value in articular rheumatism when the tissues are filled with serum, and the heart weak but sound.

The following conclusions were drawn by a writer in the Medical Century:

The drug may be given in large doses for a long time—several years in a few cases—without injury to the patient.

Improvement soon manifests itself in the majority of cases, but if improvement does not appear soon after taking the drug its further administration will be of no avail.

The best way to give the drug is by starting in with small doses of the tincture—three drops—and gradually increasing the dose so that the patient is taking ten drops three times a day within three days.

Curative results have not been seen from its use, but the patient is made comfortable and the amount of dropsy greatly diminished.

The only evil consequence from the use of the drug is a slight amount of gastric irritation which is sometimes the result of its taking. This effect gradually wears off as the patient becomes accustomed to its use.

Many failures have been reported, but the writer is inclined to believe that they are mostly due to the use of poor preparation. Beneficial results have not been obtained from the use of the various homeopathic tinctures; many of them seem to be inert. The best results have been

obtained from the use of the eclectic specific medicine.

Specific Symptomatology—Dropsy is the condition for which this agent should be used, with puffiness of the face beginning in the cellular tissues around or under the eyes, puffiness of the hands and feet, followed by general dropsical effusion. Dropsy caused by defective kidney action yields first, provided too much structural change of the kidneys has not occurred.

We would add, as specific symptoms, **local edema**; edema of the feet and lower legs, pitting upon pressure; edema occurring suddenly from unexplained causes, especially when there is general atonicity, with more or less **febleness** of the **heart's action**.

In **acuteinflammation** of the **kidneys**, where dropsy appears before the kidney lesion has been diagnosed, as often occurs in post-scarlatinal nephritis, it is prompt in its action, but the kidney inflammation must be combated with other remedies. In dropsy depending upon feeble heart, with impaired blood pressure and deficient capillary action, the influence of *apocynum* is fully as marked as in the above condition.

Therapy—The statements made in my first editions concerning the therapeutic action of this remedy upon the heart have been more than confirmed by subsequent reports other than those of Wood. It acts in harmony with *cactus*, which is the superior remedy, however, in its tonic effects upon the nervous control of the heart and in improving its muscular power.

Apocynum improves the functional operation of the heart. Dr. Best reports two cases, where the **heart** was laboring **tumultuously**, with great irregularity. The radial pulse was almost imperceptible, except upon the every third or fourth beat. All other heart remedies had been tried and failed. This remedy accomplished all that could be desired. There was a very great increase in the flow of urine, the pulse became stronger, the **heart turbulence** and the **dyspnea** disappeared, and the patient recovered. Another patient, seventy-five years of age, with very **irritable heart** and **constant cough**, was relieved by the action of this remedy, in small, frequent doses.

Apocynum strengthens the heart's action, producing an increased tonicity and a regularity of movement, and stimulates the excretion of

the watery portion of the urine, changing this fluid from a scanty, thick, turbid liquid to one normal, clear and free, rapidly reducing edema.

In the latter stages of heart diseases where **hydropericardium** is present, with other local or general effusions, it is prompt and efficient in its action, as it most materially strengthens the heart and improves the character of the circulation, while it removes the effusion and consequent oppression.

In the later stages of **pneumonia** where cyanosis and difficult breathing, with increased weakness of the heart, are threatening complications, Dr. Wilkenloh depends upon *apocynum*. It increases the power of the heart, improves capillary circulation, assists in overcoming hepatization, and acts upon the kidneys at the same time. She gives from five to ten drops until it loosens the action of the bowels. Then she reduces it to half a drop every half hour or hour. She has confidence in it in **cardiac dropsy**. She gives it for dropsy from **arteriosclerosis**, giving it in small doses with hypodermics of strychnine. She thinks we have much yet to learn of its influence.

It has been used in all local dropsies. It has cured several cases of **hydrocephalus**, and should be tried in these cases.

Edema, accompanying a mild form of **asthmatic breathing**, with irregular heart's action, has been cured, with all the symptoms, with this remedy. The recent reports of the action of *apocynum* include the influence of the remedy upon the heart. Dr. Winter believes that *apocynum* should be used in **cerebrospinalmeningitis**, especially after the stage of effusion. He believes it to be the rational remedy. It may be combined with the other indicated remedies and *echinacea*. Dr. Shafer and other observer's have used it to settle the stomach and strengthen the heart during an attack of **deliriumtremens**, or following a **debauch**. Its influence in the cases used was very prompt and satisfactory. Dr. Keys confirms this observation.

In the **nephritis** of **pregnancy** with albuminuria, *apocynum* lessens arterial tension while it overcomes the dropsy and assists in the reduction of blood pressure which in itself abates the quantity of albumin. If the pulse is strong and rapid, this influence is enhanced by the careful use of *veratrum*.

In females where there are greatly relaxed or flabby tissues, **anemia**, and a tendency to **metrorrhagia** or **menorrhagia**, with some little effusion in the ankles, with feeble kidney action, *apocynum* influences all the conditions. If iron be added for the anemia the influence will be prompt and satisfactory. It has considerable reputation in the control of passive **hemorrhage** among certain physicians.

Apocynum has cured many stubborn, intractable and very severe cases of **sciatica**. We do not undertake to explain its action in this disease. Half a dram of the specific *apocynum* added to four ounces of water, a teaspoonful every half hour, resulted in relief after a few doses. In the treatment of this disorder Webb and others use five drops over the sheath of the nerve, sometimes giving it from four to six times in a day, often with rapid results. Any toxic effect must be watched for.

Harvey Brown adds three drams of *apocynum* to four ounces of water and gives a teaspoonful every four hours for sciatica.

Trowbridge has used *apocynum* in doses of two drops four times a day where there is irregular and too **frequent menstruation**. In one case in his special work as an oculist where there was **exophthalmic** goiter with nervous irritability and irritable heart, he gave *apocynum* and this corrected all the conditions as well as the irregular menstruation, which he thinks is present in every female patient with this disorder. This suggestion should have attention.

From severe injury to the thigh, a patient of Dr. Neiderkorn developed a condition closely resembling dropsy of the extremities, but described by him with symptoms similar to acute **traumatic phlebitis**. The appearances so closely resembled the indications for *apocynum* that he gave this remedy in drop doses every two hours. There was a gradual reduction in the swelling, and a satisfactory abatement of the inflammatory symptoms with early recovery.

The Removal of Dropsical Accumulations.

In the treatment of dropsy I am convinced that the physiological processes involved have been misunderstood and therefore often wrongly treated. Failures have been attributed to the remedy, when they have been due to its improper administration. That this is too often

the case in the use of remedies for other conditions, I am assured.

To illustrate: Cathartics are administered for their hydrogogue action in dropsy, either to directly reduce the quantity of the fluid within the tissues or to reduce the quantity of serum directly from the blood and thus induce a reabsorption, perhaps, of the serum which has been diffused outside the capillaries throughout the tissues.

It is well known that *apocynum*, *elaterium*, and *hair cap moss*, when given in proper dosage, will so influence the process of absorption that the diffused serum will be taken back through the medium of the capillaries, into the circulation and the dropsy will disappear without any active hydrogogue or diuretic action.

I first made this observation in 1882, of the action of *hair cap moss*. Both my own observations and those of other more recent writers will confirm this influence as being possible from the use of *apocynum*, *elaterium*, magnesium sulphate in small and frequently repeated doses, and one or two other remedies to a limited extent. Whether the remedy acts through its direct influence upon the heart, and the circulation of the blood, or upon the secretory or excretory glands of the intestinal canal, as *elaterium* is supposed to act, or upon both these processes, as *apocynum* acts, or primarily upon the kidneys, there is no doubt in my mind that an influence is exercised upon the blood pressure-upon arterial tension and perhaps also upon the specific gravity of the blood which influences absorption and the osmotic processes, promoting a reabsorption of the diffused serum into the capillaries without any apparent loss of fluid by increased intestinal, renal, or other eliminative action.

If it were possible to know how this reabsorption could be always induced, it would be of great advantage, as it at once restores the quantity of fluid to the circulation, and prevents the prostration and debilitation of the patient, present, often after the removal of so great a quantity of fluid, which sometimes results in the death of the patient, before the influence of restoratives can be administered. I regret that I cannot give the dosage, exact in each case, but it is small always, usually much less than the commonly prescribed dose, and the dose should be frequently repeated. With *apocynum* this may be observed with twenty drops of the specific medicine in four ounces of water, a teaspoonful given every hour. With *elaterium* from one-thirtieth to one-

fortieth of a grain should be given every hour. The fact that there is no prostration, that the patient's strength and vital forces are retained by this process, is a strong argument in favor of a knowledge of it, and of its adoption. We must look for this influence with other remedies.

ANHALONIUM.

Lophophora williamsii

Synonyms—*Anhalonium lewini*, Peyote

This agent, one of the small cacti of Mexico, has been recommended for certain special conditions as an important heart remedy. It seems to act directly upon the nerve centers in a manner much like *aconite*, reducing the force and frequency of the pulse. If continued too far, its influence is that of a general depressant.

One writer claims that *anhalonium* resembles *aconite* in its action first, but immediately the symptoms are similar to the influence of *belladonna*. There then follows a general soothing influence with an inclination to sleep. It is advised as especially valuable where there is a tendency to nervous debility, or where failure for those who labor under great stress of pain, or those who from extensive stress of business or extravagant use of tobacco are troubled with sleeplessness, or those who are reduced in their mental power, or suffer from loss of memory. No careful, general or exhaustive observation has been made concerning its action. It has been used in **angina pectoris**, **asthma** or **acute asthmatic dyspnea** or **dyspnea** from cardiac feebleness, and in **pneumothorax**, it has produced good results. *Cactus* is a special sedative under certain circumstances, and this agent promises to be as good. It has a direct action on the feeble, irregular and intermittent heart. It deserves careful investigation in those lines in which *cactus* exercises its therapeutic influence.

A writer in the Medical World suggests five drops of *anhalonium* three times a day in the treatment of **diabetes**. It produces free, regular, and **deep breathing**, assisting the respiration. It improves the functional activity of the heart by improving its tonicity. It thus acts similar to *cactus*.

ADONIS.

Adonis vernalis.

Synonyms—*Adonis Apennina*, Pheasant's eye.

PREPARATIONS—

Adonidin. Dose, from 1/10 to 1/3 grain.

Fluid Extract of Adonis Vernalis; miscible in water without material precipitation. Dose, one to two minims.

Specific Medicine Adonis. Dose, from one-fourth of a minim to one minim. It is usually prescribed: ten drops in four ounces of water, a teaspoonful every two hours.

Adonidin—The constituents of *adonis* were studied by Cervello, who obtained from it only one active substance, which he named "Adonidin." This substance is extremely energetic and seems to be present only in small proportion. It is a non-nitrogenous, colorless, odorless and extremely bitter amorphous powder.

Physiological Action—From a careful clinical and physiological study of the effects of *adonis vernalis*, Dr. Budnow concludes that the active principle excites the inhibitory nerves in the heart at the central end; that its further action is to paralyze the peripheral end of the vagus; that it likewise excites the accelerator nerves, sometimes directly (through the blood pressure), sometimes indirectly; that at the moment of the vagal paralysis, the two systems of cardiac innervation interfere; that at the termination of the toxic effect, paralysis of the motor nervous apparatus of the heart occurs; that after death there is either complete loss of excitability or the cardiac muscle is very much weakened.

Durand sums up his observations as follows: In doses of 1/3 grain Adonidin increases arterial tension, regulates the heart beat, diminishes the frequency of the pulse, increases the force of the cardiac contractions. Acting with rapidity, its effect being present only during administration increases diuresis, is well tolerated, but increased doses irritate the stomach.

He commends its use especially in mitral insufficiency and interstitial myocarditis, and in palpitation of the heart.

Therapy—*Adonis* is indicated in chronic weak heart where the venous

circulation is engorged, and where there is a tendency to varicose ulcers. In functional heart disorders with weakness, the agent is contraindicated.

In the treatment of varicosis, one writer advises it in small doses persisted in.

The agent is of value in those conditions which result from imperfect arterial tension, due to **incompetent heart action**. It is useful in many cases of **dropsy**, especially if the kidneys are inefficient in their action. It contracts the enfeebled and dilated heart muscle and improves its tone. In general dropsy its influence is quite as satisfactory as that of the other heart remedies, probably, however, not more so than *digitalis*, although its diuretic influence is sometimes great. In those cases in which *digitalis* fails to produce diuresis, the diuretic influence of *adonis vernalis* is more constant. It is valuable in **irregularity of the heart** and in **dyspnea from feeble heart**. It is also serviceable in dyspnea from **asthma** with cardiacal feebleness. It has produced marked results in these cases.

It has been advised by some prominent authorities in the treatment of epilepsy The following formula has been suggested: Forty grains are dissolved in five ounces of water and filtered. To this are added 160 grains of potassium bromide and three grains of caffeine. A teaspoonful of this four times daily has cured some stubborn cases. The agent is often given in infusion.

IBERIS.

Iberis amara

Synonym—Bitter Candytuft.

PREPARATIONS—

The powdered plant. Dose from one to three grains.

Tinctura Iberis Amarae. Dose, five drops, increased or decreased as indicated.

CONSTITUENT—

Lepiden, a bitter principle.

Therapy—The most direct action of this remedy is upon an **enlarged heart**, where there is functional weakness. It lessens the force of the heart's action, controlling violence and irritability. It overcomes the **dyspnea** of these cases, the vertigo and general sense of weakness, with other reflex symptoms.

In **bronchitis, asthma, dyspnea**, and in jaundice or dropsy, all of cardiac origin, it is said to be one of our best agents, in some cases acting magically. Galen used it in rheumatic affections. The agent has not received the attention it is said to deserve.