

Actæa is said to be serviceable in that common and distressing headache occurring in nervous hysterical women, especially at the menstrual period, or when the flow is too frequent and too profuse, or at the change of life.

The pleurodynia dependent on uterine derangements is also enumerated among the many troublesome complaints over which actæa is said to prevail.

Actæa is said by Sir. J. Simpson to be highly beneficial for women who during pregnancy and after confinement occasionally suffer from great mental disturbance, sometimes amounting to madness. (See Bromide of potassium.)

Actæa has been given to relieve the headache arising from over-study or excessive fatigue.

The tincture, made in the proportion of four ounces of the plant to a pint of proof spirit, is the form in which this medicine is generally employed. Five minims may be given every hour, or fifteen to thirty minims three times a day.

#### ACONITE AND ITS PREPARATIONS.

PERHAPS no drug is more valuable than aconite. Its virtues are only beginning to be appreciated, but the author ventures to predict that ere long it will be extensively employed.

Aconite is used externally in the form of liniment or ointment, to relieve pain. In the neuralgias, especially of the brow or face, these applications are often of the greatest use, and relieve the distressing pain either permanently or at all events temporarily. It is decidedly more useful in facial than other forms of neuralgia and yet in facial neuralgia it not seldom fails notably in those severe forms termed epileptiform neuralgia.

With our present knowledge, we are unable to predict, with any certainty, the cases wherein aconite will succeed or fail. This much, however, is clear, that neuralgias depend-

ing on diseased bone, or on tumours pressing on nerves, are beyond the control of aconite; but these are not the only forms of neuralgia which will not yield to aconite. Facial neuralgia due to decayed teeth is often obstinate, yet even these cases frequently yield to the external application of strong aconite preparations. Sometimes a case will require the assiduous application of the aconite preparation during three or four days. In neuralgia, however, due to this cause, aconite sometimes quickly loses its effect and the pain returns with its former frequency and severity.

As no harm can follow the employment of aconite externally, it should always be tried; and if unsuccessful, then recourse can be had to other modes of treatment. If aconite succeed at all, it will generally succeed at once; hence, if relief does not come speedily, it is useless to continue it. The preparation should be sufficiently strong to produce decided numbness and tingling in the skin.

A piece of the ointment, the size of a bean or nut, should be applied with friction, which enhances its efficacy. This quantity should be repeated until it induces a sensation of tingling. The liniment, applied with a brush, may be mixed with one half the quantity of chloroform liniment to assist absorption.

In cases where many branches of the fifth are affected it is often sufficient to apply the aconite over the seat of the most intense pain; and again in cases where other nerves, like the great occipital and auricular nerve, are likewise involved, the application of the aconite only over the branches of the fifth most severely affected will often give complete relief.

Then we meet with cases of which the following may be taken as a type:—A woman suffers from severe neuralgic sick headache, preceded by general malaise and a dark discoloration round the eyes; the pain affects, perhaps, only a small branch of the fifth and not uncommonly that twig situated near the outer canthus of the eye, and when this happens, a neighbouring vein often becomes greatly swollen. The pain lasts with great severity a variable time, extending even



to one, two, or three days, and is accompanied with more or less severe vomiting, the rejected matter being, perhaps, intensely acid. As this pain declines, the patient feels severe shooting pains passing up the back of the neck and head behind the ear, affording a sure indication of the approaching decline of the attack; this secondary pain lasts three or four hours, then ceases, leaving the patient weak from the effects of the attack.

The application of aconite ointment or aconite liniment, at the very beginning of the attack, over the affected branch of the fifth nerve, will cut short the pain, prevent sickness, and the occurrence of the secondary pain in the back of the neck and head. In some cases veratria succeeds better than aconitia ointment.

When the auriculo-temporal nerve is affected, the salivary secretion may be increased, diminished, or altered in character, and the secretion of tears may be modified in the same manner when certain branches of the supra-orbital nerve are affected. The aconite application, by removing pain, will restore these secretions to their natural state.

Aconite is often of great service in sick headache, and is indicated when the attack is accompanied and followed by tenderness of the painful region. The aconite application not unfrequently arrests the pain; moreover, in arresting the pain it prevents the sickness,\* thus affording an excellent example of a local application affecting a distant organ.

\* Dr. Wilks recommends guarana for sick headaches. He was induced to try it by Mr. Helmken of British Columbia, and Dr. Wood of Montreal. Dr. Wood recommends it where the pain affects the right side of the head. It shortens the attacks and increases the interval between them. A powder should be taken every night, and on the occurrence of an attack every three hours. Guarana consists of the seeds of *paullinia sorbilis*, growing in Brazil and contains an alkaloid identical with that in tea and coffee.

Galvanism is sometimes useful in an attack of sick headache. Dr. Anstie uses the constant current, and he cautions against the use of more than five or at most ten cells. The author, with the interrupted current, has often succeeded in lessening the pain and removing the "stupid feeling" so often complained of during an attack.

While using these powerful poisonous applications, care should be taken not to rub them into wounds or cracks of the skin, and to avoid contact with absorbent tissues, as mucous membranes and the conjunctiva. Spinal irritation, and intercostal neuralgia, and sciatica, in some instances, yield to aconite ointment; but spinal irritation and intercostal neuralgia yield more readily to belladonna preparations.

Given internally, aconite at first induces a sensation of warmth at the pit of the stomach, sometimes with nausea and vomiting. The sensation of warmth spreads over the body, and tingling of the lips, tongue, and adjoining parts is soon perceived: the uvula, and the tongue feel as if swollen and too large, and deglutition is frequent. A large dose induces tingling and numbness at the tips of the fingers, thence spreading over the whole body, accompanied by diminished sensibility and some muscular weakness, which, if the dose was very large, becomes extreme, and is one of the most prominent and important symptoms of the drug.

The action of aconite on the circulation and respiration is most noteworthy. Moderate doses greatly reduce the number of the heart's beats, even to 40 or 36 in the minute; but after a larger and dangerous dose the pulse beats faster, and may become irregular; even a small quantity of the medicine sometimes excites irregular heart action. Whether increased or lessened in frequency, the pulse always loses strength, showing retardation of the circulation. Dr. Achscharumow and Dr. Fothergill, (see *digitalis*), show that aconite paralyzes the heart of frogs, arresting the contractions in the diastole. The effects on respiration are very similar. Moderate doses render the breathing slower; but a large and poisonous quantity often makes it short and hurried.

During the administration of aconite, cutting pains are often complained of in the joints and other parts of the body. An eruption of itching vesicles sometimes breaks out on the skin. Delirium occurs in some cases, but after fatal doses the mind often remains clear to the last. Blindness, deafness, and loss of speech occurred in some fatal cases. The muscu-



lar weakness produced by this drug is extreme, and frequent faintings occur.

From a rather scanty number of experiments Achscharumow arrives at the following conclusions.

1. Aconite kills through its poisonous action on the cardiac ganglia, thus paralysing the heart; the feeble circulation causing asphyxia.

2. Aconite irritates the medulla and thus the nucleus of the pneumogastric, and so slows the heart.

3. The pneumogastric becomes exhausted and then paralysed when the heart beats quickly and irregularly.

4. It paralyses both the trunk and terminations of the cerebro-spinal motor nerves but leaves the muscles unaffected.

He tied the aorta of frogs, thus protecting the hind extremities from the poisoned blood, and then injected aconitia under the skin of the back. All except the protected parts speedily became paralysed, and the nerves of the upper extremities failed to conduct impression to the muscles, whilst electrical stimulation of the sciatic nerve provoked energetic muscular contraction. The muscles subjected to the influence of the poisoned blood contracted on the direct application of galvanic stimulus, though they failed to respond to irritation of the motor nerves distributed in them.

As irritation of the skin over poisoned parts excited contraction of the ligatured hind limbs he concludes that :

5. The reflex action of the cord and conductivity of the sensory nerves is unaltered.

6. Aconite probably stimulates the sympathetic of the neck.

7. It depresses temperature and lessens blood pressure.

8. It exerts no influence on the brain.

9. It produces no local action on the pupil.

As aconite diminishes sensibility, it has been used internally in various painful diseases; but for the relief of pain other remedies have for the most part superseded it.

Aconite is to be the most esteemed for its power, little less than marvellous, of controlling inflammation, and subduing the accompanying fever. It will sometimes at once cut short an inflammation. It will not remove the products of inflammation, but by controlling the inflammation it prevents their formation, so saving the tissues from further injury. It is

therefore in the early stage of inflammation that this plant is conspicuously serviceable: still, although the disease may have advanced to some extent, and injured the organs by the formation of new and diseased products, yet while the inflammation is still extending aconite does good. Its beneficial effects are often visibly apparent in pharyngitis, tonsillitis, etc.

Dr. Fothergill has recently advanced some ingenious views regarding the way cardiac depressants, like aconite, reduce fever and inflammation.

First, regarding their influence on the preternatural heat of fever. Dr. Fothergill holds that aconite slows and weakens the heart, hence the circulation becomes less rapid with corresponding decrease in its chemical changes, and with this diminished oxidation there must be of course diminished heat. Aconite likewise increases the flow of blood to the skin, rendering a dry skin moist and perspiring, and so yet more heat is lost by radiation and evaporation.

Now by making a dry skin moist, we must of course abstract a certain amount of heat by evaporation, and to this extent cool the patient, but I think various reasons may be given why the loss of heat produced in this manner plays but an insignificant part in causing that great fall of temperature so often produced by aconite.

1. Whenever aconite promotes perspiration a proportionate reduction of temperature ought to take place in all diseases; but whilst in many cases as in tonsillitis, &c., the fall of temperature is considerable, in other forms of fever though the perspiration may be very free, yet scarcely any, or even no, fall of temperature takes place, for instance, in many cases of erysipelas, pneumonia, pleurisy, and especially in the specific fevers over which, as we shall see, aconite exerts very little control, the fever continuing unchecked by it.

2. We not uncommonly see aconite quickly reduce the temperature without promoting sweating, especially with children in whom this drug in many instances fails to produce perspiration.

3. Sometimes we see cases like the following:—A typhoid or scarlet fever patient, with a hot dry skin, to whom we give aconite, becomes in a few hours freely bathed with perspiration which continues several days, but then in spite of aconite the skin again becomes quite dry. Now in a case like this we find that the temperature undergoes no change, remaining as high during the sweating as it was before giving aconite, and not rising on the cessation of the perspiration.

4. In order to test the influence of perspiration on the temperature of fever, I have three times performed this experiment, in conjunction with Mr. Alfred Gould. We gave to a fever patient with a dry skin, a hot-air bath, with the exception of her head and face. When very free perspiration



came on, the bath was removed and the patient covered lightly with clothes, in this state the perspiration continued some hours afterwards. Whilst in the bath the temperature did not increase, nor did it fall at all after the bath, notwithstanding the free perspiration and light clothing. If it be objected that the clothing prevented evaporation and the consequent reduction of temperature, we may reply that these are the same conditions under which aconite in so many instances causes such a marked falling of temperature.

Fothergill attributes the effect of aconite and other cardiac depressants on inflammation to their influence on the vascular system. It has been shown that the vascular system is always in a state of semi-contraction, and that by paralysing the vaso-motor nerves, it is possible to double its capacity.

Aconite dilates the arterioles and greatly increases the capacity of the vascular system, and by this means drains blood away from the inflamed organ, in fact this drug "bleeds the patient into his own vessels." As the vessels leading to an inflamed organ are already paralysed, aconite does not augment the supply of blood to it. Were this view correct a remedy should produce the same effect on all inflammations, but we know that whilst colchicum promptly subdues gouty inflammation, it possesses very little influence on other inflammations, as pneumonia. Again, many observers believe that aconite exerts an especial action in tonsillitis. The inflamed tissues it may be urged, are here of small extent, so that the depletion will consequently be much more effectual than when a larger tract of tissue is involved.

The results of aconite are most apparent when the inflammation is not extensive, or not very severe, as in the catarrh of children, in tonsillitis, or in acute sore throat. In these comparatively mild diseases, especially if the aconite is given at the earliest stage, when the chill is still on the patient, the skin, dry, hot, and burning, becomes in a few hours comfortably moist; and, in a little time longer, is bathed in a profuse perspiration, often to such an extent that drops of sweat run down the face and chest. With the sweating comes speedy relief from many of the distressing sensations, as restlessness, chilliness, heat and dryness of the skin, aching pains and stiffness; and at the same time the quickened pulse becomes much reduced in frequency, and in a period varying from twenty-four to forty-eight hours both pulse and temperature reach their natural state. A quinsy or sore throat, if caught at the commencement, rarely fails to succumb in twenty-four to forty-eight hours. After the decline of the fever the sweat-

ing may continue for a few days on slight provocation. The appearance of the inflamed part exhibits soon, in a striking manner, the beneficial effects of the drug, if administered early enough. Thus large, livid, red, glazed, and dry tonsils, will in twenty-four hours present that appearance which indicates the subsidence of the acute stage of inflammation evidenced by the disappearance of the swelling and most of the redness, whilst the mucous membrane becomes moist, and bathed with mucus or pus. If just at this stage we apply some strong astringent, as glycerine of tannin or nitrate of silver, it will remove most of the remaining diseased appearance, and the pain, if still present. To those who may not have tried it, these visible effects of aconite on inflamed tonsils, etc., may seem exaggerations, but they may be witnessed by any one who will employ the aconite in the way we are about to point out.

Its effects on catarrhal croup, or as it is sometimes termed spasmodic laryngitis, are just as conspicuous. It removes the urgent dyspnoea in a few hours, and in a short time longer subdues the fever, so that an attack usually lasting three or four days is almost extinguished in a few hours. It apparently checks spasms and croupous breathing, when there is little or no fever, and in those rarer cases where these symptoms continue after the subsidence of the fever. Aconite is equally serviceable in severe colds, with much chilliness, great aching of the limbs, a hot, dry skin, and quick pulse.

In pneumonia, pleurisy, and the graver inflammations, the effects of this valuable drug, though not so rapid, are equally manifest.

In pericarditis, accompanied with violent throbbing and extreme pain, aconite will speedily quiet the undue action, and so relieve the pain.

Most observers ascribe its influence on inflammation to its power over the heart; and, as they truly point out, the remedy is of most use in the sthenic forms of disease; and where there is great weakness, and the heart beats feebly, unless care is taken, it may do harm.



It appears to me that in fevers we can considerably reduce the frequency of the pulse without lessening the rapidity of the circulation. A moderate dose of aconite, whilst it makes the pulse less frequent, renders it fuller, stronger, and less compressible. This indeed we should expect, for if the heart does the same amount of work after it beats slower, each individual beat must do much more work, and that if we reduce the pulse from 120 to 60, the heart must do twice as much work after it has been slowed by aconite. It may be said that though each beat is stronger, yet the heart is doing less work than when it was beating quicker. As tending to support the view that aconite weakens the heart's contractions, it must be admitted that sometimes, even small doses after a time make the pulse unsteady and even irregular.

I would venture tentatively to suggest whether the slowing effect of aconite may not be useful by increasing the heart's period of rest and nutrition. The diastole of the heart occupies nineteen out of twenty-four hours, and is the period for rest and nutrition. When the heart is made to beat quicker the acceleration takes place at the expense of the diastole, thus shortening the time for rest and nutrition. By slowing the heart aconite prolongs the diastole, and thus increases the time for the heart's nutrition and sleep.

The method of employing the drug has much to do with its efficacy. It should be given, as already stated, at the very beginning of the disease; the medicine should never be delayed; every hour is of importance. Half a drop or a drop of the tincture, in a teaspoonful of water, should be given every ten minutes or quarter of an hour for two hours, and afterwards hourly; and if there is much prostration, with feeble and weak pulse, a still smaller dose.

We feel constrained to point out here the signal service rendered by the thermometer in enabling us to decide whether or not aconite should be given. Indeed, in the treatment of inflammations, the thermometer and aconite should go hand-in-hand. If the symptoms and physical signs are not sufficiently developed to decide whether an acute inflammation of some deep-seated part has set in or not, this instrument will often decide the doubt. No acute inflammation can exist without preternatural heat of the body. Hence if, in a doubtful case, the temperature, after careful investigation, is found natural, the case is not one for aconite; while, on the other hand, if the other symptoms doubtfully indicate an in-

flammation, a rise in the thermometer will add considerably to the probability of an inflammation, and will indicate the advisability of employing aconite. Sometimes the throat is swollen, very red, and presents the appearance of an ordinary sore throat, accompanied by fever, but fever is absent. Without the thermometer these two kinds of inflamed throat cannot be discriminated with certainty. The non-febrile form is affected very little, if at all, by aconite. A want of discrimination between the two forms has often led, no doubt, to the mistaken use of aconite, so bringing discredit on this valuable drug.

Again, the use of the thermometer after scarlet fever is very important; for, as is well known, acute inflammation of the kidneys is then liable to occur, the first onset of which would at once be indicated by a rise in the body temperature. It is well, therefore, during the convalescent stage, to direct the nurse to take the temperature night and morning; and if this should rise beyond the healthy standard, she should at once give aconite, so as not to allow some hours to elapse before the patient can be visited by the medical attendant. The fever, it is true, may depend on some other cause than inflammation of the kidneys; but even then it will probably be inflammatory in character, arising from gastric catarrh, over-feeding, and the like, and in any case aconite is indicated.

It is doubtful whether aconite will shorten the fever of acute specific diseases, as scarlet fever, measles, etc., but it has a beneficial influence in these diseases, soothing the nervous system, and favouring sleep, by inducing free perspiration. Whether this remedy can lessen the severity of the fever, or diminish the duration of the acute specific diseases, is doubtful; but there is no doubt it can control and subdue the inflammatory affections which often accompany them, and which by their severity may endanger life. Thus aconite will moderate, but neither prevent nor shorten, the course of the inflammation of the throat in scarlet fever, and the catarrh and bronchitis in measles, and in this indirect manner lessen the height of the fever.



In certain epidemics of febrile inflammatory sore throat, aconite proves useless. These cases are met with chiefly during the prevalence of scarlet fever. The throat is much swollen, and of a very dusky red colour; the pulse very frequent and very weak. There is great prostration, and the symptoms are of a marked typhoid character. Here stimulants, with the application of a strong solution of nitrate of silver, do most good.

The thermometer, again, renders notable service whilst treating with aconite the acute specific fevers and the sore throats just described. Under the influence of this drug, the skin becomes moist and the pulse falls perhaps to its normal state, and we might conclude that the temperature likewise had become natural, but that the thermometer shows that it remains unaltered.

Aconite is of marked service in erysipelas. Administered at the commencement, it often at once cuts short the attack; and even when the disease continues in spite of it, aconite will reduce the swelling and hardness, lessen the redness, and prevent the inflammation from spreading.

In children, after vaccination, perhaps when the spots have nearly healed, an erysipelatous redness occasionally appears, spreading over the arm and a great part of the trunk, usually ceasing in one part, and then successively attacking contiguous parts, and leaving a yellow discoloration and desquamation. The redness is often intense, the tissues being very hard, painful, and shiny. This inflammation may continue for weeks. It may run down the arm, involve the hand, and implicate the greater part of the chest; or it may appear in the leg, and gradually spread to the foot; or, again, it may spread from the hand up the arm, and once more down to the hand, and this may be repeated many times. Sometimes the inflammation terminates in small abscesses. In cases like these, aconite generally at once arrests the inflammation; and even when it persists, the redness is rendered less intense, and the swelling less hard and painful. The troublesome inflammation often arising after vaccination of adults gener-

ally yield, to aconite, especially if supplemented by the local application, twice daily, of belladonna ointment.

In the treatment both of simple inflammations and acute specific diseases, aconite may be appropriately administered in conjunction with any other remedy which may be indicated.

Aconite has been much praised by eminent authorities in the treatment of acute rheumatism, and there can be no doubt of its usefulness; still its good effects are not so apparent as in acute inflammation. Acute rheumatism having no regular course or duration, may last untreated only a few days, or endure for many months. It is difficult therefore, to decide whether, in certain cases, the speedy decline of the fever is a natural decline, or due to the aconite. It is certainly ineffectual in many cases, which appear to run their course uninfluenced by this drug; so that it is still required to determine in what class of cases it is useful, and in what class of cases it is useless. It often appears to be of service, however, in subduing the pain from inflamed and swollen joints.

Gouty pains are said to yield to this remedy, and in many instances it has been given in neuralgia, apparently with good results.

It has been elsewhere shown that aconite lessens the rapidity of the circulation. It may therefore be used in all cases where it is needful to subdue vascular excitement; in fact, it may be given in precisely those cases which were formerly treated by bleeding.

When the menses are suddenly checked, as from cold, this remedy will often restore the flux, and thus obviate the distressing and peculiar train of symptoms produced by arrested menstruation.

Dr. Bayes recommends aconite in otitis and states that it quickly relieves the pain.

Small doses of aconite, administered frequently, will often quickly check the bleeding at the nose of children and of plethoric people.

The "fluttering at the heart" of nervous persons, and also



nervous palpitations, generally yield to this remedy. More general treatment is usually required; but when the conditions causing the disturbance are undetectable or irremovable, then aconite may be usefully employed.

The acute stage of gonorrhœa may be satisfactorily treated by a drop of tincture of aconite each hour; and it is even said to remove chordee.

#### DIGITALIS AND ITS PREPARATIONS.

LARGE doses of this drug excite nausea, vomiting and diarrhœa; the matters voided either from the stomach or bowels, being of a grass-green colour, due to the action of the gastric juice on some constituent of the digitalis. These symptoms and appearances may follow even a medicinal dose.

The digitaline passes unchanged, readily, from the intestines into the blood; for the same phenomena ensue whether the alkaloid is injected into the veins, or is swallowed.

The action of digitalis on the heart is the most noteworthy, and our knowledge of its influence on this organ, either healthy or diseased, is becoming daily more exact.

Drs. Fagge and Stephenson have published some interesting and important investigations concerning the influence of digitalis on the frog.

"Its effect on the frog is the production of irregularity of the heart's action, followed by complete stoppage of the pulsations, the ventricle remaining rigidly contracted and perfectly pale after it has ceased to beat, the muscular power of the animal at the time being unimpaired, and persisting as long as in frogs in which the circulation has been stopped by other means, such as ligature of the heart. The irregularity of the heart's action, which precedes its stoppage under the influence of the poison is peculiar. The rhythm is but little altered, and the beats are not necessarily diminished in num-

ber, as has been supposed. Sometimes, however, the ventricle makes only one pulsation for two of the auricles, the number of its contractions being therefore lessened by one half." "More frequently the irregularity consists in one or more portions of the ventricle (especially the apex) becoming rigid, white, and contracted, while the remainder of the organ continues to dilate regularly. When the yielding portions are small, a peculiar appearance, as if the wall of the ventricle formed crimson pouches or protrusions, is produced."\*

In these experiments the digitalis certainly did not weaken but strengthened the heart's contractions and at last tetanized this organ; at the same time the contractions were rendered peculiar and irregular.

Dr. Fothergill finds, "that first the contractions became somewhat quicker and more complete; then the distension became less complete, especially at the apex, which remained white, and firmly contracted. Here and there were little sections apparently belonging each to a separate cardiac ganglion which did not seem affected, and in the general contraction pouched out, contrasting in colour with the contracted and whiter portions."

Two other experimenters, Eulenberg and Ehrenhaus, have ascertained the influence of solutions of digitaline, applied directly to the frog's heart after its separation from the body, in order to learn if the effects of digitalis are due to its action on the pneumogastric nerve. The still pulsating heart, when partly submerged in a solution of digitaline, composed of one-fourth of a grain of the alkaloid to the ounce of water, had its contractions increased in force, but every now and then a pause occurred in its beatings.

With a still weaker solution (gr. i. to  $\bar{z}$  viii.) the same phenomena were observed. The pulsations grew fewer and fewer, while the duration of each contraction was proportionately lengthened. The heart continued to pulsate two hours and a half.

\* These authorities point out that "upas antiar, helleborus viridis, and perhaps other species of helleborus, the *Tanghinia venenifera*, the *dajaksch*, the *carroval*, and *scilla maritima* influence the heart in the same way."