

There is not a greater solecism in language, nor a greater absurdity in real practice, than to pretend that any one medicine is of certain efficacy in fevers. The most skilful physicians that ever existed have always found it necessary to watch attentively the progress of a fever; and to adapt both the regimen and medicines to the different changes and symptoms as they occurred.

CHAP. III.

INTERMITTENT FEVERS, OR AGUES.

THE generic character of an intermittent fever consists of periods or paroxysms, between each of which there is a perfect interval when no fever is present. They admit of several distinctions, as *true*, *spurious*, *perfect*, and *imperfect*.

The true and perfect intermittents which occur are;

1. The quotidian or daily—having an intermission of 24 hours.
2. Tertian, or third-day, 48 hours.
3. Quartan, or fourth-day, 72 hours.

When the return of an intermittent exceeds the latest of these times, it is called erratic or wandering. The other distinctions are of no practical utility, the means of cure being the same.

The paroxysm of an intermittent consists of three successive stages, viz. a hot, a cold, and a sweating stage.

Intermitting fevers afford the best opportunity both of observing the nature of a fever, and also the effects of medicine. No person can be at a loss to distinguish an intermitting fever from any other, and the proper medicine for it is now almost universally known.

The several kinds of intermittent fevers take their names from the period in which the fit returns, as quotidian, tertian, quartan, &c.

It appears to be generally acknowledged, that *marsh miasmata* or the effluvia arising from stagnant water, or marshy ground, when acted upon by heat, are the most frequent exciting cause of this fever.

EXCITING CAUSES.—This is evident from their abounding in rainy seasons, and being most frequent in countries where the soil is marshy, as in Holland, the fens of Cambridgeshire, the hundreds of Essex, &c., although we are not yet sufficiently acquainted with all the circumstances which are requisite to render marsh miasmata productive of intermittents. In acknowledging, however, the influence of marsh effluvia to produce intermittents, they must not, at the same time, be considered as their universal cause, since it is found that persons residing constantly in the most healthy

part of cities, and far remote from marshes, are not unfrequently attacked by them.

PREDISPOSING.—This disease may also be occasioned by debility, however induced, by a poor watery diet, damp houses, evening dews, lying upon the damp ground, watching, fatigue, depressing passions of the mind, &c.

When the inhabitants of a high country remove to a low one, they are generally seized with intermittent fevers, and to such the disease is most apt to prove fatal. In a word, whatever relaxes the solids, diminishes the perspiration, or obstructs the circulation in the capillary or small vessels, disposes the body to agues.

SYMPTOMS OF THE COLD STAGE.—An intermitting fever generally begins with pain of the head and loins, weariness of the limbs, coldness of the extremities, stretching, yawning, with sometimes great sickness and vomiting; to which succeed shivering and violent shaking.

OF THE HOT STAGE.—After a longer or shorter continuance of shivering, the heat of the body gradually returns; irregularly at first, and by transient flushes, soon, however, succeeded by a steady, dry, and burning heat, considerably augmenting above the natural standard. The skin which before was pale and constricted, becomes now swollen, tense, and red; and is remarkably sensible to the touch. The sensibility, diminished in the cold stages, is now preternaturally acute; pains attack the head, and flying pains are felt over various parts of the body. The pulse is quick, strong, and hard; the tongue white, the thirst is great, and the urine is high coloured.

OF THE SWEATING STAGE.—A moisture is at length observed to break out upon the face and neck, which soon becomes universal and uniform. The heat falls to its ordinary standard; the pulse diminishes in frequency, and becomes full and free; the urine deposits a sediment; the bowels are no longer confined; respiration is free and full; all the functions are restored to their natural order; when, after a specific interval, the paroxysm returns, and performs the same successional evolutions.

Between the paroxysms, the patient must be supported with food that is nourishing, but light and easy of digestion, as veal or chicken broths, sago, gruel with a little wine, light puddings, and such like. His drink may be small negus, acidulated with the juice of lemons or oranges, and sometimes a little weak punch. He may likewise drink infusions of bitter herbs, as camomile, wormwood, or water-trefoil, and may now and then take a glass of small wine, in which gentian root, centaury, or some other bitter, has been infused.

As the chief intentions of cure in an ague are to brace the solids, and promote perspiration, the patient ought to take as much exercise between the fits as he can bear. If he be able to go abroad, riding on horseback, or in a carriage, will be of great service. But if he cannot bear that kind of exercise, he ought to take such as

his strength will permit. Nothing tends more to prolong an intermitting fever, than indulging a lazy indolent disposition.

Intermitting fevers, under a proper regimen, will frequently go off without medicine: and when the disease is mild, in an open dry country, there is seldom any danger from allowing it to take its course; but when the patient's strength seems to decline, or the paroxysms are so violent that his life is in danger, medicine ought immediately to be administered. This, however, should never be done till the disease be properly formed, that is to say, till the patient has had several fits of shaking and sweating.

MEDICAL TREATMENT.—1. This consists during the cold stage, in endeavouring to bring on the hot, by means of artificial warmth; putting the feet in warm water; giving mild diluent liquids; diaphoretic cordials; * opiates, &c.

2. During the hot stage, to promote perspiration, by means of cordial diaphoretics, with the means recommended in the cold stage.

The principal object, therefore, in the treatment of intermittents, is to put a period to the stage which is present, by hastening that which naturally succeeds it.

The first thing to be done in the cure of an intermitting fever, is to cleanse the stomach and bowels. This not only renders the application of other medicines more safe, but likewise more efficacious. In this disease the stomach is generally loaded with cold viscid phlegm, (*sordes*,) and frequently great quantities of bile are discharged by vomit; which plainly points out the necessity of such evacuations. Emetics are, therefore, to be administered before the patient takes any other medicine, which may be administered just before the accession of the cold fit. A dose of ipecacuanha will generally answer this purpose very well. A scruple or half a drachm of the powder will be sufficient for an adult,† and for a younger person the dose must be less in proportion. After it begins to operate, the patient ought to drink plentifully of weak camomile-tea; and it may be repeated at the distance of two or three days. Emetics not only cleanse the stomach, but increase the perspiration, and all the other secretions, which render them of

* Take Spirits of Nitric Æther,

2 drachms.

Camphor mixture, 4 ounces.

Liquor of acetated Ammonia,

1 ounce.

Syrup of Roses, 3 drachms.

Mix: and take two table-spoonsful every fifteen minutes.

† Take Powder of Ipecacuanha,

15 grains.

Tartarised Antimony, 1 grain.

Make an Emetic powder.

or
Powder of Ipecacuanha,

15 grains.

Tartarized Antimony, 1 grain.

Spearmuch water, 1½ ounce.

Syrup of Saffron, 1 ounce.

Make an Emetic draught.

or

Take Peruvian Bark, 1 ounce.

Divide into twelve equal parts, of which take one every hour, or every second or third hour, in a small cupful of new milk, during the absence of the fever.

or

Take Peruvian Bark, 1 ounce.

Compound Cinnamon powder,

¼ drachm.

Mix, and divide into twelve equal parts

or

Take Peruvian Bark, 1 ounce.

Confection of Opium, 1 drachm.

Mix, and divide into twelve equal parts.

or

Take Peruvian Bark, 1 ounce.

Powdered Rhubarb, 2 scruples.

Mix, and divide in twelve equal parts;

to be taken as above.

such importance, that they often cure intermitting fevers without the assistance of any other medicine.

Purgative medicines are likewise useful and often necessary in intermitting fevers. Emetics, however, are more suitable in this disease, and render purging less necessary; but if the patient be afraid to take a vomit, he ought in this case to cleanse the bowels by a dose or two of Epsom salts, jalap, or rhubarb, as may appear best adapted to the constitution.

Bleeding may sometimes be proper at the beginning of an intermitting fever, when excessive heat, delirium, &c. give reason to suspect an inflammation or congestion of blood in the external vessels of the head; but as the blood is seldom in an inflammatory state in intermitting fevers, this operation is rarely necessary. When frequently repeated, it tends to prolong the disease.

After proper evacuations, the patient may safely use the Peruvian bark, which may be taken in any way that is most agreeable to him. No preparation of the bark seems to answer better than the most simple form in which it can be given, viz. in powder. It may also, as required, be advantageously combined with other substances, as, confection of opium, rhubarb, cinnamon also, in any form; *e. g.* in powder, electuary, tincture, decoction, extract, &c.

Two ounces of the best Peruvian bark, finely powdered, may be divided into twenty-four doses. These may either be made into boluses, as they are used, with a little syrup of lemon, or mixed in a glass of red wine, a cup of camomile-tea, water-gruel, or any other drink that is more agreeable to the patient.*

In an ague which returns every day, one of the above doses may be taken every two hours during the interval of the fits. By this method, the patient will be able to take five or six doses between each paroxysm. In a tertian, or third day, ague, it will be sufficient to take a dose every third hour, during the interval, and in a quartan every fourth. If the patient cannot take so large a dose of the bark, he may divide each of the powders into two parts, and take one every hour, &c. For a young person, a smaller quantity of this medicine will be sufficient, and the dose must be adapted to the age, constitution, and violence of the symptoms.†

The above quantity of bark will frequently cure an ague; the patient, however, ought not to leave off taking the medicine as soon as the paroxysms are stopped, but should continue to use it till there is reason to believe the disease is entirely overcome. Most of the failures in the cure of this disease are owing to patients not continuing to use the medicine long enough. They are generally directed to take it till the fits are stopped, then to leave

* It has lately been observed, that the red bark is more powerful than that which has for some time been in common use. Its superior efficacy seems to arise from its being of a more perfect growth than the quill-bark, and consequently more fully impregnated with the medical properties of the plant.

† In intermitting fevers of an obstinate nature, I have found it necessary to throw in the bark much faster. Indeed, the benefits arising from this medicine depend chiefly upon a large quantity of it being administered in a short time. Several ounces of bark given in a few days, will do more than as many pounds taken in the course of some weeks. When this medicine is intended either to stop a mortification, or cure an obstinate ague, it ought to be thrown in as fast as the stomach can possibly bear it. Inattention to this circumstance has hurt the reputation of one of the best medicines of which we are in possession.

it off, and begin again at some distance of time : by which means the disease gathers strength, and often returns with as much violence as before. A relapse may always be prevented by the patient's continuing to take doses of the medicine for some time after the symptoms disappear. This is both the most safe and effectual method of cure.

An ounce of gentian root, calamus aromaticus, and orange-peel, of each half an ounce, with three or four handfuls of camomile flowers, and an handful of coriander-seed, all bruised together in a mortar, may be used in form of infusion or tea. About half an handful of these ingredients may be put into a tea-pot, and an English pint of boiling water poured on them. A cup of this infusion drank three or four times a-day will greatly promote the cure. Such patients as cannot drink the watery infusion, may put two handfuls of the same ingredients into a bottle of white wine, and take a glass of it twice or thrice a-day. If patients drink freely of the above, or any other proper infusion of bitters, a smaller quantity of bark than is generally used will be sufficient to cure an intermittent.

Those who cannot swallow the bark in substance may take it in decoction or infusion. An ounce of bark in powder may be infused in a bottle of white wine for four or five days, frequently shaking the bottle, afterwards let the powder subside, and pour off the clear liquor. A wine-glass may be drank three or four times a-day, or oftener, *as there is occasion*. If a decoction be more agreeable, an ounce of the bark, and two drachms of snake-root bruised, with an equal quantity of salt of wormwood, may be boiled in a quart of water, to an English pint. To the strained liquor may be added an equal quantity of red wine, and a glass of it taken frequently.

In obstinate agues, the bark will be found much more efficacious when assisted by brandy, or other warm cordials, than if taken alone. This I have had frequently occasion to observe in a country where intermitting fevers were endemical. The bark seldom succeeded unless assisted by snake-root, ginger, canella alba, or some other warm aromatic. When the fits are very frequent and violent, in which case the fever often approaches towards an inflammatory nature, it will be safer to keep out the aromatics, and to add salt of tartar in their stead. But in an obstinate tertian or quartan, in the end of autumn or beginning of winter, warm and cordial medicines are absolutely necessary.*

The sulphate and oxide of zinc have been successfully prescribed : the former, in doses of a quarter or half a grain every four or six hours, is said to have proved very efficacious in cases of obstinate intermittents. As a tonic, the ammoniated copper has been given with considerable advantage. All these may be employed along with a decoction of cinchona, or any of the tonic bitters here recommended.

* In obstinate agues, when the patient is old, the habit phlegmatic, the season rainy, the situation damp, or the like, it will be necessary to mix with two ounces of the bark, half an ounce of Virginian snake-root, and a quarter of an ounce of ginger, or some other warm aromatic ; but when the symptoms are of an inflammatory nature, half an ounce of salt of wormwood (subcarbonate of potash,) or salt of tartar, may be added to the above quantity of bark.

As autumnal and winter agues generally prove much more obstinate than those which attack the patient in spring or summer, it will be necessary to continue the use of medicines longer in the former than in the latter. A person who is seized with an intermitting fever in the beginning of winter, ought frequently, if the season prove rainy, to take a little medicine, although the disease may seem to be cured, to prevent a relapse, till the return of the warm season. He ought likewise to take care not to be much abroad in wet weather, especially in cold easterly winds.

When agues are not properly cured, they often degenerate into obstinate chronical diseases, as the dropsy, jaundice, &c. For this reason all possible care should be taken to have them radically cured, before the constitution has been too much weakened.

Though nothing is more rational than the method of treating intermitting fevers, yet, by some strange infatuation, more charms and whimsical remedies are daily used for removing this than any other disease. There is hardly an old woman who is not in possession of a nostrum for stopping an ague; and it is amazing with what readiness their pretensions are believed. Those in distress eagerly grasp at any thing that promises sudden relief; but the shortest way is not always the best in the treatment of diseases. The only method to obtain a safe and lasting cure, is gradually to assist Nature in removing the cause of their disorder.

Some, indeed, try bold, or rather fool-hardy experiments, to cure agues, as drinking great quantities of strong liquors, jumping into a river, taking arsenic,* &c. These may sometimes have the desired effect, but must always be attended with danger.† When there is any degree of inflammation, or the least tendency to it, such experiments may prove fatal. The only patient whom I remember to have lost in an intermitting fever, evidently killed himself by drinking strong liquor, which some person had persuaded him would prove an infallible remedy.

Many dirty things are extolled for the cure of intermitting fevers, as spiders, cobwebs,‡ snuffings of candles, &c. Though

* Take Liquor of Arsenic (Fowler's solution,) 6 mins. or dps.
Cinnamon Water, 1½ oz.

Tincture of Cardamoms.
Syrup of Ginger, of each, 1 drm.
Make a draught, to be taken every hour.

† Vomitings, gripings, and swellings, and the loathing of food, are the troublesome symptoms now and then produced by an improper use of the arsenical solution. They generally, however, disappear on discontinuing the drops, or only require the exhibition of gentle opiates, some warm cathartic, or the tincture of rhubarb. It is said to cure intermittents in eight days. In Lincolnshire, which is a fenny country, where agues are very prevalent, it is universally used, and with most uniform success, and has been successfully administered by quacks under the appellation of the ague-drop.

‡ It is a very old popular belief that the spider's web cures agues, but among medical men, till within the last twenty years, little credit was given to this supposed popular superstition. In Dr. Robert Jackson's late visit to Philadelphia, he mentioned the efficacy of this remedy as indisputably ascertained, and averred (what he afterwards published) that as an anodyne to allay pain or calm irritation, it proved vastly superior even to opiates. It has for some time past been pretty liberally prescribed by Drs. Physick, Chapman, and Dewees, in Philadelphia; and though they attach different degrees of value to the article, "they are all satisfied that the representation of its virtue is very little, if at all exaggerated. In doses of five grains, repeated every fourth or fifth hour, Dr. Chapman has cured some obstinate intermittents, suspended the paroxysms of hectic, overcome morbid vigilance from excessive nervous mobility, and quieted irritation of the system from various causes. That used by Dr. Chapman was collected in cellars, and were probably the product of the common black spider. He has also satisfied himself that the web found in light exposed situations, the product

these may sometimes succeed, yet their very nastiness is sufficient to set them aside, especially when cleanly medicines will answer the purpose better. The only medicine that can be depended upon for thoroughly curing an intermittent fever, is the Peruvian bark. It may always be used with safety; and I can honestly declare, that in all my practice I never knew it fail, when combined with the medicines mentioned above, and duly persisted in.

Where agues are endemical, even children are often afflicted with that disease. Such patients are very difficult to cure, as they can seldom be prevailed upon to take the bark, or any other disagreeable medicine. One method of rendering this medicine more palatable, is to make it into a mixture with distilled waters and syrup, and afterwards to give it an agreeable sharpness with diluted sulphuric acid. This both improves the medicine, and takes off the nauseous taste. In cases where the bark cannot be administered, a proportionate dose of the *saline mixture** may be given with advantage to children.

Wine-whey is a very proper drink for a child in an ague; to half an English pint of which may be put a tea-spoonful of the spirit of hartshorn. Exercise is likewise of considerable service; and when the disease proves obstinate, the child ought, if possible, to be removed to a warm dry air. The food ought to be nourishing, and sometimes a little generous wine should be allowed.

To children, and such as cannot swallow the bark, or when the stomach will not bear it, it may be given by clyster. Half an ounce of the extract of bark, dissolved in four ounces of warm water, with the addition of half an ounce of sweet oil, and six or eight drops of laudanum, is the form recommended by Dr. Lind for an adult, and this to be repeated every fourth hour, or oftener, as the occasion shall require. For children the quantity of extract and laudanum must be proportionably lessened. Children have been cured of agues by making them wear a waistcoat with powdered bark quilted between the folds of it: by bathing them frequently in a strong decoction of the bark, and by rubbing the spine with strong spirit, or with a mixture of equal parts of the tincture of opium and the soap liniment.

To prevent agues, people must endeavour to avoid their causes. These have been already pointed out in the beginning of this section: we shall, therefore, only add one preventive medicine, which may be of use to such as are obliged to live in low marshy countries, or who are liable to frequent attacks of this disease.

Take an ounce of the best Peruvian bark; Virginian snake-root, and orange-peel, of each half an ounce; bruise them all together, and infuse for five or six days in a bottle of brandy, Holland gin, or any good spirit; afterwards pour off the clear liquor, and take a wine-glass of it twice or thrice a-day. This, indeed, is recommending a dram; but the bitter ingredients in a great measure take off the ill effects of the spirit. Those who do not choose

of the grey spider, is inert, and so is the web of the other, when not recent, which may be known by its glutinous feel." See *Elements of Therapeutics and Materia Medica*. By N. CHAPMAN, M. D. In two Vols. 8vo. Vol. ii.

* Take Sulphate of Magnesia, 6 drachms. Syrup of Orange-peel, 1 drachm.
Infusion of Senna, 1½ ounce. Make a purging draught.

it in brandy, may infuse it in wine; and such as can bring themselves to chew the bark, will find that method succeed very well. Gentian-root, or calamus aromaticus, may also be chewed by turns for the same purpose. All bitter tonics seem to be antidotes to agues, especially those that are warm and astringent.*

Various other species of bark are found to be equally efficacious in the cure of intermittents; e. g. *salix fragile*, or crack-willow bark, cascarilla, cusparia, Jamaica bark, oak bark, &c.

Two new vegetable alkalis have been procured from the Peruvian bark; one from the red, or cinchona oblongifolia, called cinchonina: the other from the grey, or cinchona cordifolia, called quinine, though this is found in both the red and yellow bark.

Quinine,† the most distinguished in the cures of agues, is white and intensely bitter. Its success in removing intermittents has been amply confirmed by Dr. Elliot, of St. Thomas's hospital, and others; and it possesses many advantages over the Peruvian bark in any shape; among which the smallness of the dose is not the least important, being from five to ten grains, either in the form of syrup, pills, tincture, wine, &c.

Intermittent fevers assume various types at different seasons, &c. which it is the province of the physician to attend to. Their character seems to depend much upon the age or peculiar habit of the body of the individual, and the temperament of the atmosphere. It is also observed that variations are more common in the quotidian than in any other type, which, perhaps, may be attributed to its more frequent occurrence in early life, when the frame is more irritable, and to the debility which the constitution suffers from this type above that of any other, in consequence of the greater length of its paroxysms, and the greater brevity of its intervals, by which means the prostrated strength of the system has no time to rally or recover itself.

DIET.—While the fit continues, the patient ought to drink freely of water-gruel, orange-whey, weak comomile-tea; or, if his spirits be low, small wine-whey, sharpened with the juice of lemon. All his drink should be warm, as that will assist in bringing on the sweat, and consequently shorten the paroxysm.‡

* Blessed thistle, gentian, wormwood, camomile, bitter wood, columba, St. Ignatius bean, lesser centaury, German leopard's bane.

† Take Sulphate of Quinine, 12 grains.	Take Sulphate of Quinine, 15 grs.
Good Madeira wine, 2½ pints.	Extract of Camomile, 15 grs.
Make a solution; the dose of which may be from four to twenty four ounces in the course of the day.	Beat up and divide into six pills; one to be taken every third hour.
or	or
Take Sulphate of Quinine, 6 grs.	Take Sulphate of Quinine, 15 grs.
Alcohol (specific gravity 847) 1 gr.	Simple Syrup, ½ pint.
Make a tincture; dose 2 to 6 drms.	Mix for a syrup, and take three table spoonful three times a day.

‡ Dr. Lind says, that twenty or twenty-five drops of laudanum put into a cup of the patient's drink, and given about half an hour after the commencement of the hot fit, promotes the sweat, shortens the fit, relieves the head, and tends greatly to remove the disease.