

CHAP. XXXIV.

POISONS.

EVERY person ought, in some measure, to be acquainted with the nature and treatment of poisons. They are not unfrequently taken unawares, and their effects are often so sudden and violent, as not to admit of delay, or allow time to procure the assistance of medical men.

There are four kinds of poisons; viz. mineral, vegetable, aerial, and animal.

Mineral poisons are distinguished from vegetable ones by their action. The former corrode, stimulate, and inflame; the latter generally stupify, without leaving any marks of inflammation.

None of the mineral poisons prove fatal, till after a most excruciating operation of at least two or three hours; whereas some of the vegetable ones terminate life in a few minutes. From the animal poisons the distinction is as remarkable. The aerial poisons operate still more quickly than any other classes, and their action on respiration is of so peculiar and immediate influence, that it can seldom be mistaken.

Poison seldom remains long in the stomach before it occasions sickness, with an inclination to vomit. This shows plainly what ought to be done. Indeed, common sense dictates to every one, that if any thing has been taken into the stomach which endangers life, it ought immediately to be discharged. Were this duly regarded, the danger arising from poisons might often be avoided.

MINERAL POISONS. These consist of corrosive metallic salts; e. g. **ARSENIC** and its preparations; **CORROSIVE SUBLIMATE**, &c.

SYMPTOMS.—When a medical poison has been swallowed,* the symptoms are an austere taste, fetid breath, constriction of the pharynx and gullet; hiccup; nausea and vomiting of brown or bloody matter; anxiety and faintings; heat with violent pain at the pit of the stomach; black and offensive stools; small pulse; frequent and irregular palpitations; great thirst and burning heat; breathing difficult; urine scanty, red and bloody; delirium; convulsions of an epileptic type, and death.

TREATMENT.—Vomiting to be immediately excited; and encouraged by large and long-continued draughts of sugared water, linseed tea, or other emollient fluids. If arsenic has been taken in solution, lime-water, or chalk and water, may be drank freely. Inflammatory symptoms are to be combated; bleeding from the arm, and leeches to the region of the stomach; fomentations, frequent emollient clysters, as symptoms may require.

* In the Philosophical Transactions for 1811, Mr. Brodie has shown by experiments, that the external application of arsenious acid to abraded surfaces, is analogous with its internal exhibition, but often more rapid in its effects by the latter than the former mode. Ed.

For arsenic no specific antidote is yet known. Fat, oil, vinegar, charcoal powder, lime of sulphur, and vegetable decoctions, which have been recommended, are not to be relied on.

Tests.—To ascertain when arsenic is present in any fluid, a solution of the ammoniacal sulphate of copper added to it, produces, generally, a beautiful grass green precipitate; but if added to wine, the precipitate would be a dark-coloured blue. Sulphureted hydrogen precipitates arsenic from tea of a beautiful yellow colour, and changes a solution of arsenic in water of a yellow colour, without any precipitate. From albumen, gelatine and bile, containing arsenic in solution, nitrate of silver produces a white precipitate. The ammoniaco-nitrate of silver produces a yellow precipitate, soluble in nitric acid and ammonia; but the presence of muriates or phosphates, or their acids, renders this a fallacious test.

Make with the suspected fluid a broad streak on writing paper, then draw a piece of lunar caustic several times over the moistened part, which will become yellow if arsenic or alkaline phosphate be present. If it be arsenic, the streak will be rough, curdy, and flocculent, as if done with a crayon; if a phosphate, homogeneous and uniform. In a few minutes the phosphoric yellow fades into a dull green, becomes darker, and ultimately black. The arsenical yellow remains permanent, or nearly so, for some time, when it becomes brown. These distinctions are to be viewed by reflected, not transmitted light, the test being made in the shade.

The most certain test to detect the presence of arsenic, is to reduce it to its metallic state, by calcining the dried suspected matter in a glass tube, with equal parts of charcoal and potash; when, if arsenic be present, in however minute a quantity, it will be sublimed and stick to the inside of the tube, in the form of a shining metallic coating, consisting of cubic crystals.

ANTIMONY, AND ITS PREPARATIONS.

Emetic Tartar, &c.—When an excess of emetic tartar, or any other of the preparations of antimony have been taken, we may remark the following

Symptoms, viz. Those occasioned by acids, with copious and obstinate vomitings, abundant stools, constrictions of the throat, cramps, symptoms of intoxication, and prostration of strength.

Treatment.—Emetic tartar generally defeats itself by the vomiting it soon occasions after it is taken; but when this does not take place, it should be excited by tickling the throat with a feather or the finger; and encouraged by copious draughts of mild fluids; or when too severe, to be allayed by opium according to the effects previously produced by the poison.

The best antidotes are, decoction of astringent vegetables, such as oak or willow bark, gall nuts, strong green tea, &c., which should be given freely for the purpose of diluting and decomposing the poison.

Tests.—Sulphureted hydrogen, and the hydrosulphurets, precipitate tartarized antimony from its solution of an orange or deep brownish red colour; white, by sulphuric acid, alkalies, barytes or

lime water. Alkaline and earthy neutral salts do not affect it; but salts with excess of acid do. Infusion of gall, occasions a copious whitish-yellow precipitate. The muriate of antimony is a dark, heavy fluid, to which, if water be added, a white precipitate is formed. The oxide is soluble in muriatic acid, by which the muriate is formed.

* * All the preparations of antimony are readily reduced to the metallic state by calcination with charcoal and potash.

COPPER, AND ITS PREPARATIONS. (*Sulphate of copper, or blue vitriol; subacetate of copper, or verdigrise. Food cooked in foul copper vessels, and pickles made green by copper.*)

Symptoms.—Acrid and coppery taste; tongue parched and dry; constriction of the throat and coppery eructations; severe vomitings, or fruitless efforts to vomit; dragging at the stomach; dreadful colic; frequent black bloody stools with tenesmus: abdomen distended; pulse small, hard, and quick; syncope; great thirst and anxiety; cold sweats, scanty urine; pain in the head, vertigo, cramps, convulsions, and death.

Treatment.—Large draughts of milk and water to encourage vomiting. Whites of eggs stirred up with water, and taken freely. Inflammation to be attacked as a general principle, and the nervous symptoms by anodynes and antispasmodics. Sugar, as first promulgated by Orfila, is not a specific, but it may be given advantageously with coffee.

Tests.—The salts of copper are mostly of a bright green or blue colour, and are easily reduced to their metallic state by means of charcoal, at an elevated temperature. The sulphate of copper is partly decomposed by alkalis and alkaline earths. Potash precipitates a subsulphate of a green colour from it.

If the salts of copper be dissolved in coffee, port wine, or malt liquors, which partly decompose them, they may be detected by adding a spirituous tincture of guaiacum, which will throw down a precipitate varying in shade from a greenish indigo to that of a pale green. Ammonia added to a solution of any cupreous salt, gives a blue or greenish precipitate, according to the quantity; but, if added in excess, it re-dissolves the precipitate, and forms a deep blue transparent solution.

LEAD AND ITS PREPARATIONS; or fluids adulterated with lead.

Symptoms.—When lead has been taken in large quantity, a sugary astringent metallic taste is felt in the mouth; constriction of the throat; pain in the region of the stomach; obstinate, painful, and often bloody vomiting hiccup; convulsions and death.

When taken in small long-continued doses, it produces Devonshire colic (*colica pictonum*), and paralytic symptoms.

Treatment.—See *Alkaline Earths*.—In addition to which, if symptoms suggest it, bleeding must be used; in conjunction with castor oil with or without opium, assisted by frequent emollient clysters to clean out the bowels. The warm bath, &c.

Tests.—All the preparations of lead are easily reduced to their metallic state by calcination with charcoal.

The superacetate of lead (sugar of lead) dissolved in water is precipitated white by means of sulphuric acid; of a canary colour by chromate of potash and chromic acid; both of which are easily reduced by calcination. The alkaline sulphurets precipitate the superacetate of lead of a blackish colour.

MERCURY, AND ITS PREPARATIONS; e. g. *Oxymuriate of mercury*, or *corrosive sublimate*; *nitric oxide of mercury*, or *red precipitate*; *sulphuret of mercury*, or *vermilion*.

Symptoms.—Acrid metallic taste, thirst, fulness and burning at the throat; anxiety, teasing pains of the stomach and bowels; nausea and vomiting of various coloured fluid, sometimes bloody; diarrhoea and *dysuria*, or difficulty of making water. Pulse quick, small, and hard: faintings, great debility, difficult breathing, cramp, cold sweats, insensibility, death.

Treatment.—Whites of eggs decompose corrosive sublimate. One mixed with water may be given every two or three minutes to promote vomiting, and to lessen the virulence of the poison; milk in large quantities, gum-water, or linseed-tea, sugar and water, or water itself at about 80°. Gluten, as it exists in wheat-flour, also decomposes sublimate, and should be given mixed with water. Inflammation to be anticipated, and treated by the usual remedies.

Tests.—Mercurial preparations heated to redness in a glass tube with potash, are decomposed; the quicksilver being volatilized. The oxymuriate or sublimate is precipitated white by ammonia; yellow by potash; and of an orange colour by lime-water. By nitrate of tin, a copious dark brown precipitate is formed; and by albumen mixed with cold water, a flocculent one.

The red and nitric oxides may be dissolved in muriatic acid and converted into sublimate.

Vermilion is insoluble in water or muriatic acid; but is entirely volatilized by heat.

SILVER, NITRATE OF. (*Lunarcaustic.*)

Symptoms similar to those occasioned by other corrosive poisons.

Treatment.—A table-spoonful of the muriate of soda (*common salt*) dissolved in a pint of water, and a wine-glassful to be taken every two minutes, to decompose the poison; after which mucilaginous drenches or purgatives may be administered.

Tests.—Nitrate of silver is precipitated white by muriate of soda; yellow by phosphate and chromate of soda. If placed on burning coals, it animates them, leaving a coating of silver; calcined with charcoal and potash, the silver is reduced to its metallic state.

ZINC, SULPHATE OR OXYD OF.

Symptoms.—A sour taste, sense of choking, nausea, vomiting, pain in the stomach, frequent stools, difficult breathing, quickened pulse, face pale, cold extremities, but seldom death from the emetic qualities of the poison.

Treatment.—Vomiting is rendered easy by copious draughts of warm water, and particular symptoms to be opposed by appropriate remedies.

Tests.—Pure sulphate of zinc is precipitated white by potash and ammonia; yellowish white, by the alkaline hydrosulphurets; and of an orange colour by the chromate of lead.—The oxide is readily reduced by calcination with charcoal and nitre.

ACIDS: e. g. *Sulphuric acid, or oil of vitriol. Nitric acid, or aqua fortis. Muriatic acid, or spirit of salt. Oxalic acid, or acid of sugar. Phosphoric, Fluoric, Tartaric, Prussic.*

General symptoms.—Acid burning taste in the mouth, acute pain in the throat, stomach, and bowels, frequent vomiting of bloody fluid, which effervesces with chalk, or alkaline carbonates, and reddens litmus paper; hiccup; copious stools, more or less bloody; tenderness of the abdomen; difficult breathing; irregular pulse; excessive thirst; drink increasing the pain, and seldom staying down; frequent but vain efforts to make water; cold sweats; altered countenance; convulsions; death.

Treatment.—Mix an ounce of calcined magnesia with a quart of water, and give a wine-glassful every two minutes. Soap-suds or chalk and water may be used till magnesia be procured. Vomiting to be excited by tickling the throat with a feather. Diluents to be taken after the poison is neutralized or ejected. Inflammations and other consequences to be treated in the ordinary way.

If the sulphuric acid, vulgarly called the oil of vitriol, has been swallowed, water alone should not be given, nor should calcined magnesia with water be given: but the common carbonate of magnesia may be given freely when mixed with water. If these precautions be not observed there is too much heat generated in the stomach.

If oxalic acid has been taken, chalk and water is preferable to magnesia.

If Prussic acid* has been taken, emetics are to be administered with as little delay as possible, and after their operation, oil of turpentine, ammonia, brandy, and other stimulants capable of rousing the system, should be perseveringly employed, with warmth, friction, and blisters.

Tests.—Sulphuric acid is known by its great weight, by its evolving heat when mixed with water; by emitting no fumes. If barytes be added to it, a sulphate is formed, (sulphate of barytes,) which is insoluble in water or nitric acid.

Nitric acid emits orange-coloured fumes upon adding copper to it, by which it is changed blue. If potash be added to it, a nitrate is formed (nitrate of potash) which deflagrates when thrown on burning coals. It tinges the skin yellow.

Muriatic acid emits pungent fumes. If nitrate of silver be added to it, a very white precipitate is formed of muriate of silver, soluble in ammonia, but not in nitric acid.

Oxalic acid precipitates lime and all its salts from water; the

* Prussic acid is the most violent of poisons, producing almost instant death when applied even in small quantities to the surface of the body. *Er.*

precipitate being soluble in nitric, but not in an excess of oxalic acid. Exposed to heat it volatilizes, leaving but a little residue. It is decomposed by sulphuric acid, becoming brown; it is dissolved by heat and nitric acid, and rendered yellow. Muriatic acid dissolves and decomposes it with heat. Oxalic acid also turns it to a light-brown red.

Phosphoric acid precipitates barytes and lime-water; the precipitate being soluble in nitric acid. It is decomposed by charcoal at a high temperature, evolving carbonic acid, and phosphorus being sublimed.

Fluoric acid exhales white vapours, not dissimilar to those of muriatic acid; heat is evolved with a hissing noise when water is added to it: it dissolves glass.

Tartaric acid produces a precipitate from lime-water, soluble in an excess of acid, and in nitric also; with potash it forms a *neutral* and *supersalt*. It does not precipitate solution of silver, but its salts do.

Prussic acid has a strong odour of bitter almonds, and is contained in that fruit, and in the leaves of the peach and the laurel; it is soluble in alcohol, but hardly in water, and is precipitated in its solution by nitrate of silver.

ALKALIES. (*Potash, Soda, Ammonia.*)

Symptoms.—The symptoms of having swallowed an alkali in excess are, an acid, urinous and acrid taste in the mouth; great heat in the throat, nausea and vomiting of bloody matter, which changes syrup of violets to green, and effervesces with acids, if the carbonated form of the acid has been taken; copious stools; acute pain of the stomach, colic, convulsions, death.

Treatment.—Give vinegar and other vegetable acids largely, to neutralize the alkali; and treat the concomitant symptoms upon general principles.

Tests.—Alkalies have many properties in common; their solutions feel soapy; they change vegetable blues to green, and yellow to brown; remain transparent when carbonic acid is added to them, which serves to distinguish them from the alkaline earths, barytes, strontium, and lime. Nitrate of silver is precipitated by them in form of a dark coloured oxide, soluble in nitric acid.

* * Potash and soda may be distinguished from each other by evaporating their solutions to dryness; potash will become moist by absorbing water from the atmosphere, while soda will remain dry. Ammonia is known by its pungent smell.

ALKALINE EARTHS. (*Lime, Barytes, Pure Barytes, Carbonate and Muriate of.*)

Symptoms. Violent vomitings, convulsions, palsy of the limbs, distressing pains in the abdomen, hiccup, alteration of the countenance, and very early death.

Treatment.—If lime has been taken, vinegar and other vegetable acids are the best antidotes.

If barytes, in any of its forms, has been swallowed, a weak solution of Epsom or Glauber's salt should be copiously drank, to

produce vomiting; and, at the same time, to decompose the poison, which it renders inert, by forming an insoluble sulphate. Till either of the above salts can be obtained, large draughts of water alone, or made slightly sour by sulphuric acid, may be freely drank.

Tests.—Solution of lime changes vegetable blues to green, and is precipitated white by carbonic and oxalic acid, while no change is produced on it by sulphuric acid; its salts are decomposed by the fixed alkalies, which precipitate the lime, but not the ammonia.

Pure barytes undergoes similar changes to lime when water is added to it, and acts like it on vegetable colours. It does not effervesce with acids. Sulphuric acids, and all the sulphates added to a solution of it, produce a white precipitate, insoluble in water and nitric acid. Carbonate of barytes is insoluble in water, but dissolves in nitric and muriatic acid in a state of effervescence. Muriate of barytes dissolved in water, is not changed by pure ammonia, but its carbonates, as well as all other alkaline carbonates, throw down a white precipitate, which is carbonate of barytes.

NITRE. (*Salt-petre; Nitras Potassæ.*)

Symptoms.—Cardialgia, nausea, painful vomiting, purging, convulsions, syncope, with feeble pulse, cold extremities, teasing pains of the stomach and bowels; difficulty of breathing, a species of intoxication, and often death.

Treatment.—Similar to that of arsenic, only that lime is not to be used.

HYDROPHOBIA.

THE disease is most frequent after long, dry, hot seasons; and such dogs as live upon putrid stinking carrion, without having enough of fresh water, are most liable to it.

When any person has been bit by a dog, the strictest enquiry ought to be made whether the animal was really mad. Many disagreeable consequences arise from neglecting to ascertain this point. Some people have lived in continual anxiety for many years, because they had been bit by a dog which they believed to be mad; but, as he had been killed on the spot, it was impossible to ascertain the fact. This should induce us, instead of killing a dog the moment he has bit any person, to do all in our power to keep him alive, at least till we can ascertain whether he be mad or not.

The poison of hydrophobia is generally communicated by a wound, which nevertheless heals as soon as a common wound.

SYMPTOMS.—At an uncertain interval after the bite, generally, however, between the twentieth day and three or four months, pain or uneasiness occurs in the bitten part, though the wound may have been long healed.

Anxiety, languor, spasms, horror, disturbed sleep, difficult respiration, succeed, and are soon very much increased; violent convulsions affect the whole body, hideously distorting the muscles of the face; the eyes are red and protruded; the tongue swells, and

often hangs out, and viscid saliva flows from the mouth; there is pain in the stomach, with bilious vomitings, a horror of fluids, and impossibility of drinking them. All these symptoms are aggravated till the sufferer is relieved by death.

TREATMENT.—The common notion, that this poison may lie in the body for many years, and afterwards prove fatal, is both hurtful and ridiculous. It must render such persons as have had the misfortune to be bit very unhappy, and can have no good effects. If the person takes proper medicines for forty days after the time of his being bit, and feels no symptoms of the disease, there is reason to believe him out of danger. Some have indeed gone mad twelve months after being bit, but seldom later.

It is now well known that hydrophobia is more easily prevented than cured; in fine, it is very doubtful if ever it has been cured. Mercury, arsenic, opium, musk, camphor, acids, wine, vegetable and mineral alkali, oil, various herbs, and many other articles, whose effects are diametrically opposite, have been employed without benefit. Large blood-lettings, injecting water into the veins, warm and cold bath, in short, every thing that could possibly be suggested as a remedial agent, have been adopted with no better success.

To ensure effectually the person bitten by a mad dog against the consequences, it is strongly recommended, immediately or as soon after the accident as possible, to have the bitten part completely cut out; after which bleeding should be promoted by warm fomentations, and a cupping-glass applied over the part, until it give evident marks of its exhausting power. On the removal of this glass the wound is to be washed frequently with a weak solution of muriatic acid (forty drops to a pint of water,) and a piece of lint or rag, moistened in the same, left on the part, and renewed as it becomes dry. Should some degree of inflammation ensue, as most likely will be the case, the solution may then be laid aside, the wound dressed with dry lint, and a copious suppuration promoted by means of warm poultices, healing afterwards the wound in the usual way.

During this treatment the patient must take two of the following pills at bed-time* every night, for three weeks or a month after the accident.

No other plan can ensure safety.

After all that has been said, and the little confidence assigned to any practice but that of early cutting out or cauterizing the part, it is nevertheless always necessary that something should be done after the actual commencement of the symptoms of hydrophobia, and every practitioner should be prepared for the adoption of some mode of treatment or other. A modern writer observes, "that experience authorizes the placing confidence in bleeding till the patient faints; on vomiting, and, perhaps, on the use of the deadly nightshade; and on tobacco exhibited as a clyster. That it is probable advantage would result from the combined employment of bleeding and vomiting, and purging in the early stage of the dis-

* Take Mercurial Pill, 1 drachm. Extract of Hemlock, 10 grains.
Powdered Rhubarb, 2 scruples. Make 20 pills, to be taken as above.

ease. That analogy recommends the trial of the oil of turpentine in the convulsive stage of the disease; but unfortunately, when once the hydrophobic symptoms have commenced, there is little or no hope of saving the patient, the disease having almost invariably baffled every plan of treatment which the united talents of numerous medical generations have suggested. All the most powerful means of every class have been tried over and over again; happily, however, surgery possesses tolerably certain means of preventing hydrophobia, which ought not to be delayed after the accident, and that has been already mentioned, viz. that of cutting out effectually the bitten parts. How late this operation may be performed with a prospect of utility, we are not at present prepared to say; but there are practitioners who deem the practice right, even when heat, irritation, or inflammation is observed in the bitten part.*

The next poisonous animal which we shall mention is the Viper. The grease of this animal rubbed into the wound, is said to cure the bite. Though that is all the viper-catchers generally do when bit, we should not think it sufficient for the bite of an enraged viper. It would surely be more safe to have the wound well sucked,† and afterwards rubbed with warm salad-oil. A poultice of bread and milk, softened with salad-oil, should likewise be applied to the wound; and the patient ought to drink freely of vinegar-whey, or water-gruel with vinegar in it, to make him sweat. Vinegar is one of the best medicines which can be used in any kind of poison, and ought to be taken very liberally. If the patient be sick, he may take a vomit. This course will be sufficient to cure the bite of any of the poisonous animals of this country.

With regard to poisonous insects, as the bee, the wasp, the hornet, &c.; their stings are seldom attended with danger, unless when a person happens to be stung by a great number of them at the same time; in which case something should be done to abate the inflammation and swelling. Some, for this purpose, apply honey; others lay pounded parsley to the part. A mixture of vinegar and Venice treacle is likewise recommended; but I have found rubbing the part with warm salad-oil, or frequently repeated applications of pledgets dipped in laudanum, succeed very well. Indeed, when the stings are so numerous as to endanger the patient's life, which is sometimes the case, he must not only have oily poultices, or pledgets moistened with laudanum applied to the part, but should likewise be bled, and take some cooling medicines, as nitre, or cream of tartar, and should drink plentifully of diluting liquors.

It is the happiness of this island to have very few poisonous animals, and those which we have are by no means of the most viru-

* See Medical Repository, vol. 3. p. 54.

† The practice of sucking out poisons is very ancient; and indeed nothing can be more rational. Where the bite cannot be cut out, this is the most likely way for extracting the poison. There can be no danger in performing this office, as the poison does no harm, unless it be taken into the body by a wound. The person who sucks the wound ought, however, to wash his mouth frequently with salad-oil, which will secure him from even the least inconveniency. The *Psylli* in Africa, and the *Marsi* in Italy, were famed for curing the bites of poisonous animals, by sucking the wound; and we are told, that the Indians in North America practice the same at this day.

lent kind. Nine-tenths of the effects attributed to poison or venom in this country, are really other diseases, and proceed from quite different causes.

We cannot, however, make the same observation with regard to poisonous vegetables. These abound everywhere, and prove often fatal to the ignorant and unwary. This indeed is chiefly owing to carelessness. Children ought early to be cautioned against eating any kind of fruit, roots, or berries, which they do not know; and all poisonous plants to which they can have access, ought, as far as possible, to be destroyed. This would not be so difficult a task as some people imagine.

Poisonous plants have no doubt their use, and they ought to be propagated in proper places; but, as they often prove destructive to cattle, they should be rooted out of all pasture grounds. They ought likewise, for the safety of the human species, to be destroyed in the neighbourhood of all towns and villages; which, by the bye, are the places where they most commonly abound. I have seen the poisonous hemlock, henbane, wolfsbane, and deadly-nightshade, all growing within the *environs* of a small town, where, though several persons, within the memory of those living in it, had lost their lives by one or other of these plants, yet no method, that I could hear of, had ever been taken to root them out; though this might be done at a very trifling expence.

Seldom a year passes, but we have accounts of several persons poisoned by eating hemlock-roots instead of parsnips, or some kinds of fungus which they had gathered for mushrooms. These examples ought to put people upon their guard with respect to the former, and to put the latter out of use. Mushrooms may be a delicate dish; but they are a dangerous one, as they are generally gathered by persons who do not know one kind of fungus from another, and take every thing for a mushroom which has that appearance.

We might here mention many other plants and animals of a poisonous nature, which are found in foreign countries; but, as our observations are chiefly intended for this island, we shall pass them over. It may not, however, be amiss to observe, for the benefit of such of our countrymen as go to America, that an effectual remedy is now said to be found for the bite of the rattlesnake. The prescription is as follows:—Take of the herbs plantain and horehound, in summer, roots and branches together, a sufficient quantity: bruise them in a mortar, and squeeze out the juice; of which give, as soon as possible, one large spoonful: if the patient be swelled, you must force it down his throat. This generally will cure; but, if he finds no relief in an hour after, you may give another spoonful, which never fails.—If the roots are dried, they must be moistened with a little water. To the wound may be applied a leaf of good tobacco moistened with rum.

We give this upon the faith of Dr. Brookes, who says it was the invention of a negro; for the discovery of which he had his freedom purchased, and a hundred pounds *per annum* settled upon him during life, by the General Assembly of Carolina.

It is possible there may be in nature specific remedies for every kind of poison; but as we have very little faith in any of those

which have yet been pretended to be discovered, we shall beg leave again to recommend the most strict attention to the following rules, *viz.* That when any poisonous substance has been taken into the stomach, it ought, as soon as possible, to be discharged by vomits, clysters, and purges; and, when poison has been received into the body by a wound, that it be expelled by medicines which promote the different secretions, especially those of perspiration and urine; to which may be added antispasmodics, or such medicines as take off tension and irritation; the chief of which are opium, musk, camphor, and asafœtida.

PART III.

CHAP. I.

OF SURGERY.

To describe all the operations of surgery, and to point out the different diseases in which these operations are necessary, would extend this article far beyond the limits allotted to it; we must therefore confine our observations to such cases as most generally occur, and in which proper assistance is either not asked, or not always to be obtained.

Though an acquaintance with the structure of the human body is indispensably necessary to qualify a man for being an expert surgeon; yet many things may be done to save the lives of their fellow-men in emergencies by those who are not adepts in anatomy. It is amazing with what facility the peasants daily perform operations upon brute animals, which are not of a less difficult nature than those performed on the human species; yet they seldom fail of success.

Indeed every man is in some measure a surgeon, whether he will or not. He feels an inclination to assist his fellow-men in distress, accidents happen every hour, which give occasion to exercise this feeling. The feelings of the heart, however, when not directed by the judgment, are apt to mislead. Thus one, by a rash attempt to save his friend, may sometimes destroy him; while another, for fear of doing amiss, stands still and sees his bosom-friend expire, without so much as attempting to relieve him, even when the means are in his power. As every good man would wish to steer a course different from either of these, it will no doubt be agreeable to him to know what ought to be done upon such emergencies.

BLEEDING.

No operation of surgery is so frequently necessary as bleeding; it ought therefore to be very generally understood. But though practised by midwives, gardeners, blacksmiths, barbers, and tooth-drawers, we have reason to believe that very few know when it is proper. Even physicians themselves have been so much the dupes of theory in this article, as to render it the subject of ridicule. It is, however, an operation of great importance, and must, when