Essay on poisons; embracing their symptoms, treatment, tests, and morbid appearances. To which are added the means for treating cases of suspended animation / [Thomas Castle].

ESSAY
ON
POISONS.

SEVENTH EDITION,

ILLUSTRATED BY 21 COLOURED PLATES.

BY

THOMAS CASTLE, M.D. F.L.S.

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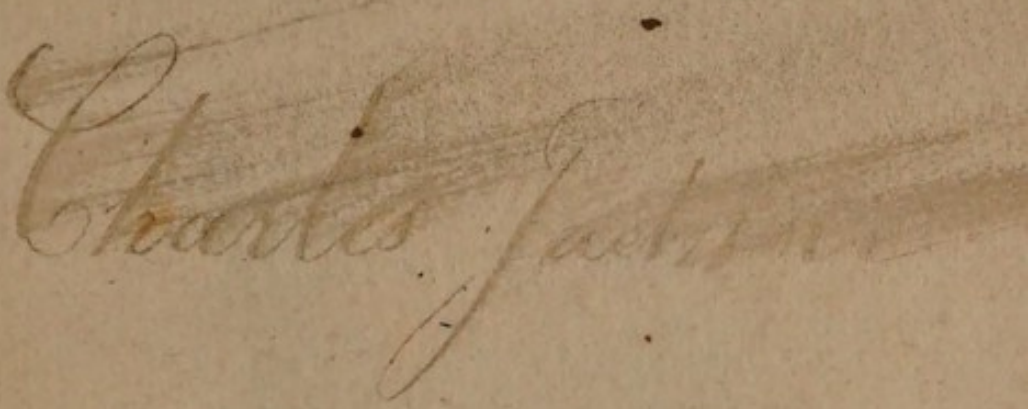

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ESSAY

ON

POISONS;

EMBRACING THEIR

SYMPTOMS, TREATMENT, TESTS,

AND

MORBID APPEARANCES.

TO WHICH ARE ADDED,

THE MEANS FOR TREATING CASES OF SUSPENDED ANIMATION.

SEVENTH EDITION,

ILLUSTRATED BY TWENTY-ONE COLOURED PLATES.

By THOMAS CASTLE, M.D. F.L.S.

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PREFACE.

THE very favourable reception which this small work has met with, induces the Author to commit it again to the press. It cannot but produce a sense of satisfaction to have heard, that an attentive perusal of this simple production has been of essential service to gentlemen who have passed their medical examinations. Several alterations were made in the last edition, thereby rendering it as complete as possible, consistent with the original design of the work. Conciseness, as far as the nature of the subject would allow, without perplexity, has been par-

ticularly studied. In addition to the remarks on poisons, a few observations are added on the means to be had recourse to in cases of suspended animation, an accident of not unfrequent occurrence, and one requiring immediate assistance.

T. C.

March 10, 1837.

ON

POISONS.

DIFFERENT plans have been adopted by authors in the arrangement of Poisons, but that which Foderé framed, and which has since been slightly modified by Orfila and Christison, is the most simple we can adopt. It is based upon the effects which the respective poisons produce, and hence there are three classes: the first of which includes the *irritants*, the second the *narcotics*, and the third the *narcotico-acids*.

Irritants.

This class of poisons is generally subdivided into the *mineral*, *vegetable*, and *animal irritants*.

Mineral Irritants.

Acids.	Mercury.
Ammonia.	Oxalic Acid.
Antimony.	Phosphorus.
Arsenic.	Potash.
Baryta.	Silver.
Bismuth.	Soda.
Copper.	Sulphur.
Iodine.	Tin.
Lead.	Zinc.
Lime.	

Symptoms. The symptoms caused by these irritating poisons are those of violent irritation and inflammation, succeeded by the usual consequences—increased vascularity, effusion of coagulable lymph, and occasionally of blood, ulceration and softening, and sometimes preternatural thickness of the villous coat, and lastly gangrene or slough. The *mouth* is frequently affected, at-

tended with pricking or burning of the tongue, redness, swelling, and sometimes ulceration of the lining membrane of the cheeks;—the *throat* is red and for the most part affected with burning pain, and in some instances accompanied with constriction and difficulty in swallowing;—the *stomach* suffers acute and generally burning pain, sometimes lancinating or pricking pain, sickness, vomiting, tenderness on pressure, and abdominal tension;—the *intestines* suffer also a burning pain; but it is also frequently a pricking or tearing pain, and still more frequently a twisting and intermitting pain, like that of colic; there is purging, rarely constipation, tenesmus, tenderness of the abdomen. The matter discharged after the alimentary and fæculent contents have passed is chiefly a mucous fluid

sometimes accompanied by blood. These symptoms are accompanied in almost every instance with great disturbance in the circulation, quick and full pulse, excessive prostration of strength, coldness and clammy moisture of the skin.

Diagnosis. The diseases which may be mistaken for the effects of these poisons are bilious cholera, gastritis, enteritis, peritonitis, perforation of the stomach and intestines, melæna and hematemesis, colic, iliac passion, and obstructed intestine, whether produced by entanglement, intus-susceptio, or the strangulation of hernia.

Morbid appearances. The powerful irritants, which are not corrosive, produce simply appearances characteristic of inflammation of the alimentary canal in its various stages,—in the mouth, throat, and gullet vascularity, and also, if

the case have lasted long enough, ulceration;—in the stomach, vascularity, extravasation of blood, secretion of tough mucus, deposition of coagulable lymph, ulceration, sometimes softening of the whole or part of the villous coat, sometimes hardness and shrivelling of that coat;—in the intestines, vascularity, extravasation, and ulceration. When the poison is corrosive, much more extensive ravages are sometimes caused, particularly in the stomach.

MINERAL ACIDS.

Acidum Sulphuricum or Oil of Vitriol.
Acidum Nitricum or Aqua Fortis.
Acidum Muriaticum or Spirits of Salts.

Symptoms. Violent burning pain about the throat, fauces, œsophagus, and whole alimentary canal; fetid eructations; vomiting of blood; pulse very

small and irregular; abdomen tense; great thirst, cold and clammy perspirations; convulsions, and death, sometimes in a few hours, but more generally, not for two or three days.

Treatment. In all cases where either of the acids abovementioned have been swallowed, our antidotes must be immediately administered, or they will be useless. If the antidote is not already at hand, first dilute the acid, by giving copiously water, milk, soap and water, or oily matter; afterwards give either powdered chalk, limestone, or old mortar: if carbonate of magnesia can be had, it is to be preferred. The after-treatment to be antiphlogistic.

Tests. The mineral acids turn vegetable blues, red; form characteristic neutral salts with the alkalies; and effervesce when added to a carbonated al-

kali or salt: 1. *Sulphuric acid* forms a white precipitate, both with the muriate of baryta and the acetate of lead. 2. *Muriatic acid* in the pure state, or when merely combined with water, is detected by the addition of nitrate, or what is better, sulphate of silver, which affords a white precipitate, called the chloride of silver. 3. *Nitric acid* is known by its red fuming nature; by its forming nitre, when saturated with potash; and if paper be dipped into the saturated solution, it is converted into touch paper: it forms no precipitate with the salts used to test the other acids.

Morbid appearances. If the acids be concentrated, they occasion complete disorganization and destruction of the parts with which they come in contact: spots or stains are observed on the lips,

and occasionally upon the adjacent parts of the face, of a dark brown colour, when produced by sulphuric acid, and of a yellowish tinge, when by aqua fortis; the mucous membrane of the mouth presents a hardened and glazed appearance; white or brownish from oil of vitriol, and yellowish or orange from aqua fortis; the lining membrane of the œsophagus, stomach, and intestines, is in a high state of inflammation, and often detached; holes are generally formed in the stomach, with gangrenous appearances surrounding them. The *nitric acid* proves most destructive; the stomach is converted into a pulpy, soft, blackish, ragged substance, and completely altered in its character; and from the escape of the acid, the peritoneum becomes inflamed.

AMMONIA.

Ammoniæ Subcarbonas or Smelling Salts.
Ammoniæ Murias or Sal Ammoniac.

Symptoms. Effects indicative of disturbance in the spinal system, such as tetanic spasms and convulsions, and unless death very speedily follows, the stomach is extensively inflamed. If taken imprudently in too great quantity, there is inflammation in the lining membrane of the nostril and air passages.

Treatment. Should consist of a copious administration of mucilaginous drinks, containing a dilute acid, as vinegar, lemon juice, &c.

Tests. 1. A very pungent smell. 2. The solutions produce an azure blue, with a small quantity of a dilute solution of copper. 3. They also give yel-

low precipitates, with muriate of platina.

Morbid appearances. The nostrils blocked up with an albuminous membrane; mucous lining of the larynx, trachea, bronchi, mottled with patches of lymph; gullet and stomach streaked with red here and there.

ANTIMONY.

Antimonium Tartarizatum or Tartar Emetic.

Symptoms. The vomiting, which is the first symptom, is very distressing and urgent; it is soon followed by pain in the stomach; spasm of the œsophagus; great prostration of strength; a quick small pulse; colicky pains soon attack the bowels, and violent purging succeeds; breathing anxious and hur-

ried; cold perspirations and other symptoms.

Treatment. If vomiting has not taken place, let the patient swallow large draughts of warm water, and tickle the throat: while that is doing, prepare without loss of time, some vegetable decoction, such as decoction of bark, infusion of galls and common tea. Tincture of bark, bark in powder, mucilaginous drinks, and milk, are also proper. If the stomach should continue very irritable, give opiates. Treat other symptoms according to their nature.

Tests. 1. With muriatic and sulphuric acids, lime water, and the alkalies, it forms a white precipitate. 2. A decoction of oak bark or galls, throws down a yellowish precipitate.

Morbid appearances. Have not been often witnessed, but signs of local in-

flammation appear to attend an overdose of this poison.

Antimonii Murias or Butter of Antimony.

Symptoms. This acts as a powerful escharotic, and when swallowed causes great destruction, giving rise to symptoms of a very distressing nature, as violent as are observed after corrosive sublimate has been taken.

Treatment. Same as for tartar emetic.

Tests. 1. The revival of the metal by flux. 2. It forms a white flaky precipitate with water.

Vinum Antimoniale or Antimonial Wine.

Often administered by nurses to children, has not unfrequently proved a destructive poison, killing them insidiously. The sulphurets, and all antimonial preparations, act in a similar man-

ner, and the symptoms they occasion must be treated as for the tartar emetic.

ARSENIC.

Arsenici Oxydum or Oxyde of Arsenic.

White arsenic, which is the oxyde of a peculiar metal, is the most active, the cheapest, and the most easily obtained, and hence, most generally employed. Of the mineral poisons, arsenic, and all the preparations obtained from it, are highly poisonous, even in very small quantities; from which circumstance, it is of the greatest consequence its effects should be watched, when administered for the cure of any disease; and whenever any distressing symptoms make their appearance, it should be immediately discontinued. The same observation will apply to all poisons, particularly the more active minerals; i. e. when any un-

pleasant symptoms, peculiar to the poison at that time employed, show themselves, it should be suspended for a time, and renewed with great caution.

The *oxydes* and *sulphurets* of *arsenic*, and *arsenites*, possess poisonous qualities in different degrees, and will all destroy life if the dose be at all considerable. *Fly water* is commonly a solution of this mineral.

Symptoms ; — Are commonly considered under three heads. 1. In one set of cases there are signs of violent irritation of the alimentary canal, and sometimes of the other mucous membranes also, accompanied with excessive general depression, but not with distinct disorder of the nervous system. These cases usually terminate in from twenty-four hours to three days. 2. In the next set there is very little sign of irri-

tation in any part of the alimentary canal; perhaps trivial vomiting or slight pain in the stomach, sometimes neither; excessive prostration and frequent fainting; and death before the sixth hour. 3. In a third set of cases life is commonly prolonged six days or more; the signs of intestinal inflammation are succeeded or accompanied about the second or fourth day, or later, by symptoms of irritation in other mucous passages, and by derangement of the nervous system, such as palsy or epilepsy. The operation of arsenic is very energetic in the majority of instances; cases have, however, occurred, where patients have been destroyed without the production of any distressing symptoms, where very large quantities have been taken. One symptom peculiar to the poison is a copious flow of saliva, not having the

mercurial fætor: the evacuations also are often green.

The *external application* of arsenic may give rise to all the above symptoms and destroy life.

Treatment. Unless our attention is directed to the patient early, there will be little chance of success. The stomach-pump should be used if it be at hand; if not, as we possess no antidote to the poison, expel it immediately from the stomach by emetics, should it not have excited vomiting, which it scarcely ever fails of doing. Milk, white of eggs, and mucilaginous drinks should be taken freely, to encourage the vomiting and cleanse out the stomach. Emollient clysters are also to be given, to remove any of the arsenic which may have escaped into the intestines. It is useless losing time in administering chemical

salts, under the idea of neutralizing the effects of the poisons; we have no substance possessed of that power. Sulphurets of potash and soda, lime water, and alkalies, have all been used without success. Magnesia and charcoal have also been strongly advised by some, but they are not to be relied on as antidotes. Inflammatory symptoms and nervous irritation must be combated by the usual means.

Tests. 1. A solution of arsenic is changed yellow by the addition of water saturated with sulphureted hydrogen. 2. With sulphate of copper and caustic potash or ammonia it forms a beautiful green precipitate of *arsenite of copper*. 3. By adding to it a small quantity of liquor ammoniæ and a solution of nitrate of silver, you will produce a beautiful yellow precipitate of *arsenite of silver*.

The above results will not, however, enable you to speak decisively as to the presence of this mineral. It is necessary to reduce some to its metallic state, before we have clear evidence of its existence in a fluid. If any should be rejected solid from the stomach, mix it with some potash and charcoal, then submit the mixture to the heat of a candle or spirit lamp, in a glass tube, and the metallic arsenic will be sublimed, which possesses a strong smell of garlic, and is very characteristic, this metal only having that odour: it condenses itself on the upper part of the tube, in cubic crystals, which is a property possessed by no other metal. If there should not be any powder in the matter vomited, or in the contents of the stomach, (supposing the patient dead,) the precipitate obtained in test 2, or 3, may

be submitted to the same process, and a similar result will follow.

Morbid appearances. The stomach commonly intensely inflamed, amounting to erosion or abrasion of the villous coat; duodenum, jejunum, and ilium inflamed; colour not very evident, although the mucous membrane of the rectum is often inflamed, and even ulcerated; the lungs are sometimes black and turgid with blood.

BARYTA.

Barytæ Carbonas or Carbonate of Baryta.
Barytæ Murias or Muriate of Baryta.

The other soluble salts of baryta produce the same effects as these, therefore require precisely the same treatment.

Symptoms. They act with considerable violence and activity, and seem to

possess a two-fold action,—one local and irritating, the other remote and indicated by narcotic symptoms, hence vomiting; purging; violent pain in the stomach and bowels; vertigo; insensibility, paralysis; convulsions; and death.

Treatment. Sulphate of soda, of magnesia, or of potash, dissolved in some mucilaginous fluid, to be drank freely: they form with baryta, an insoluble sulphate, which is inert.

Tests. 1. The salts of baryta form an insoluble compound with sulphuric acid and its salts, which will detect very minute quantities of this earth. 2. With nitrate of silver a white curdled or clotted precipitate is produced, insoluble in water and in nitric acid.

Morbid appearances. Signs of inflammation of the mucous membrane of

the stomach throughout its whole extent.

BISMUTH.

Bismuthi Subnitras or Magistery of Bismuth.

Symptoms. In a case quoted by Dr. Christison, there was burning sensation in the throat, brown vomiting, watery purging, cramps, coldness of the extremities, and intermitting pulse; then inflammation of the throat, difficult deglutition, dryness of the nose, and a constant nauseous metallic taste. On the third day, hiccup, laborious breathing, and swelling of the hands and face; on the fourth day, swelling and tension of the belly; on the fifth, salivation; on the sixth day, delirium; on the seventh day, swelling of the tongue

and enormous enlargement of the belly; and on the ninth, death.

Treatment. There is no chemical antidote, therefore the poison should be expelled as quickly as possible, and any subsequent symptoms treated on the usual plan.

Tests. The subnitrate may be distinguished from other white powders insoluble in water, by being taken up by nitric acid of a density not less than 1280, and by the solution thus obtained affording, when poured into water a white precipitate, (the original subnitrate,) which is blackened by sulphuretted hydrogen.

Morbid appearances. In the case above alluded to, from the fauces to the rectum, there were but few points healthy; the tonsils, uvula, pharynx, epiglottis, and larynx, were gangrenous;

the gullet livid, and the stomach very red, with numerous purple pimples; the whole intestinal canal red, and here and there gangrenous, especially at the rectum.

COPPER.

Cupri Subacetas or Verdigris.

The preparations of copper are seldom taken or given intentionally as poisons, but from neglect and want of cleanliness, in leaving acid and vegetable substances in copper vessels, these sometimes become corroded, and the copper is mixed with the food.

The sulphate, nitrate, muriate, carbonate and oxyds of copper, and wines, in which either of these preparations may be present, all act in a similar way and require the same treatment. Ver-

digris is the most frequent poison of copper.

Symptoms. The preparations of copper give rise to colicky pain in the stomach and bowels: nausea; coppery taste; vomiting of greenish matter, and violent head-ache; severe griping pain in the bowels, with purging often of blood; these symptoms are sometimes succeeded by cold perspirations, convulsions, and death. Spitting, colic and vomitings, are the more prominent and most frequent symptoms.

Treatment. Milk, white of eggs, sugared water, and mucilaginous fluids until the stomach is freely evacuated. Iron filings are also said to be deserving of considerable confidence. If the spasms of the alimentary canal be severe, opiates will be useful; and

emollient clysters to evacuate and lubricate the bowels.

Tests. 1. All the salts of copper are of a green or blue colour. 2. The liquor ammoniæ, when added to them, forms a greenish precipitate; but if added in excess, the precipitate becomes dissolved, and a beautiful blue solution of the *ammoniaret of copper* is the result. If the salt be so much diluted as not to colour the water, this test will detect it. 3. Prussiate of potash forms a brown precipitate.

Morbid appearances. Yellowness of the whole body; inflammation, and even ulceration and gangrene of the mucous lining of the stomach and intestines, at several points. This membrane also, along the entire tract of the alimentary canal, usually exhibits a decided greenish

colour, a circumstance which occurs in no other variety of poisoning.

IODINE.

Iodine, and Hydriodate of Potash.

Both these substances are irritating poisons, producing the same symptoms and morbid changes.

Symptoms. Constriction in the fauces, nausea, epigastric pain increased on pressure, vomiting and colic; but these signs do not invariably occur.

Treatment. Starch or any farinaceous matter would probably be an advisable antidote.

Tests. In the solid form heat converts iodine into a violent vapour: in the fluid form a cold aqueous solution of starch affords a beautiful blue precipitate. 2. The *hydriodate of potash* affords with the proto-salts of mercury, a yellowish

green; with the per-salts of mercury a scarlet precipitate, and with the soluble salts of lead, a yellow precipitate very similar to chromate of lead.

Morbid appearances. Redness of the mucous membrane of the stomach and intestines at several points, peritoneal and intestinal adhesions, effusion into the abdominal cavity, and distension of the intestinal tube with gases.

LEAD.

Acetas Plumbi or Sugar of Lead.
Carbonas Plumbi or White Lead.
Oxidum Plumbi Rubrum, Red Lead or Litharge.

Symptoms. The action of these preparations of lead are nearly the same, hence the same remarks are applicable to each. Pain at the stomach; an astringent metallic taste; sometimes vomit-

ing; obstinate constipation; colicky pains in the bowels; and contractions of the abdominal muscles: these are succeeded by a pallid countenance; tremors; sometimes delirium; and if the patient should survive the primary symptoms, paralytic affections seldom fail to make their appearance.

Treatment. Give an emetic of zinc; bleed if the pulse be hard; then freely exhibit cathartics, particularly castor oil and sulphate of magnesia combined with opium or hyoscyamus: use the warm bath, and throw up repeated injections of mutton broth and demulcents; drink freely mucilaginous fluids, and when convalescent the patient should live almost entirely on milk diet.

Tests. 1. Sulphuric acid, and the alkaline sulphates form a white insoluble precipitate. 2. Chromate of potash,

throws down a yellow precipitate. 3. Sulphuretted hydrogen, forms at first a brown precipitate, but it soon becomes black. 4. Carbonated alkalies, form a white precipitate.

Morbid appearances. There is merely a stricture about the colon, or rather a general contraction of that intestine; and no marks of inflammation are observed.

LIME.

Calx Viva or Quick Lime.

Symptoms. Great heat of the throat, nausea, vomiting, epigastric pain, and insupportable colic, with all the symptoms which characterise inflammation of the stomach and intestines.

Treatment. Vinegar, lemon-juice, or any vegetable acid freely administered, then demulcents: bleed if necessary and

attend to subsequent symptoms according to their nature.

Tests. 1. Sparingly soluble in water. 2. The solution turns the vegetable blues to green. 3. Restores the purple of reddened litmus, &c.

Morbid appearances. Intense inflammation of all the membranes with which the poison has come in contact.

MERCURY.

Oxymurias Hydrargyri or Corrosive Sublimate.

Symptoms. An acrid, styptic, metallic taste, with the sensation of fulness and burning in the throat; copious salivation, but not always; great anxiety, teasing pains of the stomach and intestines, nausea, frequent vomiting of a fluid occasionally mixed with blood, diarrhœa, tenesmus; pulse small, quick,

and hard; frequent faintings; excessive debility; difficult respiration; cold sweats, cramps, convulsions, and death.

Treatment. Give white of eggs or milk immediately; the former decomposes corrosive sublimate, and throws down an insoluble salt, comparatively mild in its operation. Barley water and linseed tea, or any other mucilaginous fluid, to be taken freely to wash out the stomach effectually. The bowels are next to be attended to; give saline purgatives by the mouth, with emollient clysters. The inflammation must not be overlooked, but treated by leeches, blisters, &c.; and, when the patient rallies somewhat, by venesection. General bleeding will not be proper on the appearance of the inflammation in all cases. Iron-filings and meconic acid are likewise employed as antidotes.

Tests. 1. With corrosive sublimate, albumen forms a white precipitate of *submuriate of mercury:* this test will detect very minute quantities of the salt. 2. Alkalies form with it a red or yellowish precipitate. 3. Liquor ammoniæ gives a white precipitate. 4. Reduction of the metal with flux, (potash and charcoal,) is the only decisive test.

Some other preparations of mercury act in a similar manner, but with much less violence; such as the *red oxyde, nitrates, sulphurets,* &c. The plan of treatment would be similar, and the tests the reduction of the metal.

Morbid appearances. Inflammation about the first passages, constriction of the intestinal canal, with marks of gangrene, sometimes with the perforation of the viscus, and in general the mucous membrane of the stomach is detached.

OXALIC ACID.

Acidum Oxalicum or Acid of Sugar.

Oxalic acid is well known as a frequent cause of poisoning, sometimes taken with a view to destroy life, and not unfrequently in mistake for Epsom Salts.

Symptoms. When the solution is strong and much taken, a very severe pain is always immediately felt in the stomach, and sometimes in the fauces, which after a little time is usually followed by violent vomiting, cold clammy perspiration, and feeble or even imperceptible pulse; then drowsiness or coma with great languor and debility during which death takes place. When the poison is diluted it acts on the heart, brain and spinal cord, producing paralysis of the heart, and in small doses, a fatal coma.

Treatment. Immediately exhibit chalk or the carbonate of magnesia in water, and then excite vomiting to evacuate the stomach of its contents.

Tests. Its small needle-form, lamellar crystals have occasioned it to be mistaken for salts; but it may be known from these by its strong acid taste, by its volatilizing when heated in a phial and subliming in crystals, and by lime-water throwing down, in its solution, a copious precipitate of oxalate of lime.

Morbid appearances. Marks of inflammation in the œsophagus, stomach and sometimes the small intestines, such as unusual vascularity of those parts, softening and extreme pulpiness of the villous coat, portions of which are sometimes quite destroyed. The tongue and fauces are covered with a viscid white matter.

TARTARIC ACID, ETC.

Tartaric, citric and fluoric acids, when taken in sufficient quantity and undiluted, will give rise to very violent symptoms, and even destroy life. They produce effects similar to the Mineral Acids, and require a similar mode of treatment, viz. magnesia, chalk, soap, &c.

PHOSPHORUS.

Symptoms. Most distressing pain and heat in the stomach, which are more urgent if the poison be dissolved; besides this, it occasions other symptoms as observed in the corrosive metals.

Treatment. It is advisable to expel it from the stomach as speedily as possible. Therefore distend the stomach with liquids, and then excite vomiting

and give diluents freely. The operation is less violent, the more it is excluded from the air. Magnesia may be used with the fluid to neutralize the poison.

Tests. Its peculiar odour, and general properties, will commonly enable any person to detect it. If dissolved in oil, it is luminous in a dark room.

Morbid appearances. An inflammatory appearance of the stomach and intestines, with sphacelated spots in various parts.

CAUSTIC ALKALIES.

Potash, Soda, &c., and their Carbonates.

The modus operandi of the alkalies and their carbonates is the same, both acting in small doses as simple irritants, but in large quantities as escharotic poisons.

Symptoms. Distressing heat and pain

in the fauces, œsophagus, and stomach; nausea; urinous caustic taste; vomiting, often of blood; intestines soon become affected, and bloody evacuations are the result.

Treatment. Similar in all cases; neutralize the alkali by some mild acid, as vinegar; diluted lemon juice, &c., and give mucilaginous drinks.

Tests. 1. Alkalies have an urinous taste; they change violets green, and turmeric paper brown; precipitate metallic oxydes from their solutions; and form soapy compounds with oily substances. 2. Potash and soda may be distinguished by the former becoming precipitated in a state of cream of tartar, when tartaric acid is added in excess; whilst soda forms a very soluble compound with tartaric acid in any quantity. 3. A solution of platina

throws down a yellow precipitate with potash and not with soda.

Morbid appearances. Inflammation of the œsophagus, stomach, and bowels, which frequently present a gangrenous and sloughy appearance.

Nitras Potassæ, or Salt Petre.

Symptoms. Violent pain in the stomach, with spasm and a sense of cold; vomiting and purging of blood; very irregular pulse; great prostration of strength; syncope; coldness of the extremities; clammy perspiration; involuntary stools, and speedy dissolution. If the primary symptoms should not destroy, the nervous system becomes more particularly deranged, and paralysis is the consequence.

Treatment. Give freely milk and any bland fluid; exhibit emollient pur-

gatives and clysters; and after bleeding, when the pulse is hard and quick, administer opium and aromatics.

Tests. 1. Crystals six-sided prisms. 2. Detonates on burning coals. 3. When mixed with sulphuric acid, red nitrous fumes escape.

Morbid appearances. Same as are observed in cases of death from the corrosive metals.

SILVER.

Nitras Argenti, or Lunar Caustic.

The symptoms and morbid appearances produced by its action are similar to those produced by *corrosive sublimate.*

Treatment. Give immediately common salt dissolved in fluid, this will convert the poison into the chloride of silver, a substance which is perfectly

innoxious. In other respects treat as for *corrosive sublimate.*

Tests. 1. Caustic crystallizes in colourless tabular prisms, which deflagrate like nitre, when thrown upon a red coal, coating it with a perfectly white lamina of silver. 2. Dissolves readily in water, and the solution affords, with muriatic acid or any soluble muriate, a white curdy precipitate insoluble in water. 3. When treated with a solution of arsenic, and subsequently a drop of ammonia, the arsenite of silver, a beautiful yellow precipitate subsides.

TIN.

Murias Stanni, or Muriate of Tin.

Symptoms. Violent vomiting and purging, with spasmodic affections of the stomach and bowels; cramps; sharp

quick pulse; sometimes paralysis; with convulsions, and death. It has been mistaken for common salt.

Treatment. Emetics if necessary; afterwards milk and mucilaginous fluids; emollient and oily clysters. Opiates to allay spasm of the bowels, &c. The antiphlogistic treatment if required.

Tests. 1. With nitro-muriate of gold, it forms a brownish red, or purplish precipitate, the *Powder of Cassius.* 2. With prussiate of potash, a white precipitate.

All the preparations of Tin resemble this in their effects, &c.

ZINC.

Sulphas Zinci, or White Vitriol.

Symptoms. It is generally rejected, immediately that it reaches the stomach, hence it rarely destroys life. It produces a peculiar astringent metallic

taste, with a sense of suffocation: but vomiting soon relieves these symptoms; otherwise the countenance becomes pallid and sunk; pulse quick and irregular; bowels always more or less affected: sometimes symptoms occur resembling the Lead Cholic, which are succeeded by obstinate diarrhœa.

Treatment. Give freely milk, which, besides acting as an emollient, partially decomposes the poison. Exhibit emollient clysters, if the zinc be not ejected from the stomach. Treat the secondary symptoms according to the case.

Tests. 1. Forms with alkalies a white precipitate, which is readily dissolved by sulphuric acid. 2. With prussiate of potash, a blue precipitate. 3. With chromate of potash, an orange yellow precipitate.

Vegetable Irritants.

Anemone pulsatilla.
Bryonia alba.
Caltha palustris.
Convolvulus jalapa.
Cucumis colocynthis.
Daphne mezereon.
Delphinium staphisagria.
Euphorbia officinarum.
Gratiola officinalis.
Jatropha curcas.
Juniperus sabina.
Momordica elaterium.
Narcissus pseudo-narcissus.
Ranunculus acris, &c.
Stalagmatis cambogioides.

Symptoms. In large doses they commonly produce vomiting, but sometimes they are retained, and then they are

followed by diarrhœa, accompanied by abdominal pain, which is at first remittent, but becomes more constant as the inflammation of the intestines extends itself, the abdomen then is tense; the debility great, and giddiness and slight delirium are occasionally, though rarely, observed.

Treatment. We possess no direct antidote for any one of the vegetable irritants, you must therefore remove the poison as speedily as you can, and if inflammation supervene, let it be treated on the general plan.

Morbid appearances. Inflammation and occasionally ulceration in the stomach, duodenum, and large intestines.

ANEMONE PULSATILLA.

Common Pasque Flower.

Class, &c. Polyandria Monogynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. char. Calyx none; petals 5—9; seeds numerous.

Spec. char. Peduncle involucred, 1-flowered; petals straight; leaves doubly pinnate and cut.

A small herbaceous perennial, native of England, found growing in chalky pastures, about six inches high, blossoming in April and May. The stem is woolly, 1-flowered; petals of the corolla straight, purple, sometimes white, or double; and the leaflets are finely cut. The whole plant is poisonous: and the *dry powder* when applied externally as a counter-irritant has produced gangrene.

BRYONIA ALBA.

Black-berried Bryony.

Class, &c. Monœcia Pentandria of Linnæus. Cucurbitaceæ of Jussieu.

Gen. char. Male flower; calyx 5-toothed; corolla 5-cleft; filaments 3; anthers 3. Female flower; calyx 5-toothed; corolla 5-cleft; style 3-cleft; berry inferior, nearly globular, many seeded.

Spec. char. Leaves palmate, rough with dots on both sides; flowers monœcious; berries black.

The black-berried bryony, although a native of the south of Europe is now to be often met with in this country; it is an evergreen trailing plant, about eight feet in length, sending forth whitish green flowers about June and July. Its poisonous virtues reside in the root and depend on a principle lately discovered, and which is called *bryonine*.

CALTHA PALUSTRIS.

Common Marsh Mary-gold.

Class, &c. Polyandria Polygynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. char. Calyx none; petals 5; nectaries none; capsules numerous, many seeded.

Spec. char. Stem erect; leaves cordate, roundish, crenate with round auricles.

A common perennial indigenous plant, about six inches high, found in moist and watery situations. Sends forth flowers in April and May, which are large, golden coloured, axillary, solitary,

and on peduncles; corolla often double. When boiled, the infusion is highly poisonous. The young buds are pickled as a substitute for capers.

CONVOLVULUS JALAPA.

Jalap Convolvulus.

Class, &c. Pentandria Monogynia of Linnæus. Convolvulaceæ of Jussieu.

Gen. char. Calyx 5-cleft; corolla campanulate, plaited; stigmas 2; capsule of 2-3 cells; cells 1-2 seeded.

Spec. char. Leaves ovate, somewhat cordate, obscurely repand, downy beneath; peduncles 1-flowered.

A deciduous perennial trailing plant, a native of Mexico, producing its rose-coloured flowers in August. The *root*, which is extensively used in medicine, if much be taken, will produce the symptoms attending vegetable irritating poisons. *Scammony*, which is the inspissated juice of the root of the convolvulus scammonia, posesses analogous

properties to Jalap, but it is much less active.

CUCUMIS COLOCYNTHIS.

Bitter Cucumber.

Class, &c. Monœcia Monadelphia of Linnæus. Cucurbitaceæ of Jussieu.

Gen. char. Male flower; calyx 5-leaved; pistil 5-cleft; corolla 5-parted; filaments 3; anthers cohering. Female flower; calyx 5-toothed; corolla 5-parted; pistil 3-cleft; pome succulent; seeds ovate, acute, compressed.

Spec. char. Leaves in many divisions; fruit globular, smooth; stem rough.

A deciduous annual trailer, about six feet in length, introduced in 1551 from Barbary. It is cultivated in our botanic gardens, generally in a frame, and sends forth its yellow flowers from May to August. The poisonous property of this plant exists in a pith found within the capsule, and commonly used in medicine under the name of *colocynth.*

DAPHNE MEZEREON.

Mezereon or Spurge Olive.

Class, &c. Octandria Monogynia of Linnæus. Thymelææ of Jussieu.

Gen. char. Calyx 4-cleft, resembling a corolla, withering but permanent, inclosing the stamens; corolla none; berry 1-seeded.

Spec. char. Flowers sessile in threes, on the stem: leaves lanceolate, deciduous.

A native shrub, about four feet high, sometimes to be met with in our woods; the stem puts forth many woody branches; the flowers come out before the leaves, early in the spring, (February to April,) usually crimson, sometimes white, odorous; berries red. The plant is more commonly an inhabitant of our gardens and shrubberies. The whole plant, especially the *berries*, are highly poisonous.

DELPHINIUM STAPHISAGRIA.

Stavesacre or Lousewort.

Class, &c. Polyandria Trigynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. char. Calyx none; petals 5; nectary cloven, elongated behind into a horn.

Spec. char. Nectary 4-leaved, shorter than the petals; leaves palmate with obtuse lobes.

A native annual of the south of Europe, introduced into our gardens about 1596. It is from 1 to 2 feet high; has a strong hairy stem; leaves also hairy; flowers forming a loose spike, appearing from April to August, of a pale blue or purple colour. The *seeds* contain a poisonous alkali (*delphinia*) six grains of which Orfila found fatal to a dog.

EUPHORBIA OFFICINARUM.

Officinal Spurge.

Class, &c. Dodecandria Trigynia of Linnæus. Euphorbiaceæ of Jussieu.

Gratiola Officinalis | Officinal Hedge Hyssop

Gen. char. Calyx 1-leafed, inflated, inferior; nectaries 4 or 5, standing on the calyx; capsule on a pedicel, 3-lobed.

Spec. char. Prickly, naked, stem many-angled; prickles in pairs.

An evergreen shrub, about six feet high, brought from Africa in 1597. It is cultivated in a dry stove; has fleshy stems, thick and numerous, angular when young, but roundish when old; the branches are distorted and irregular; and the flowers which are apetalous appear in June and July. The *euphorbium* in medicine is the inspissated juice of this plant, and is highly poisonous.

GRATIOLA OFFICINALIS.

Officinal Hedge-Hyssop.

Plate, No. 1.

Class, &c. Diandria Monogynia of Linnæus. Scrophularineæ of Jussieu.

Gen. char. Corolla irregular, reversed; calyx mostly 7-leaved, the two outer ones expanded; stamens 2, barren; capsule 2-celled.

Spec. char. Leaves lanceolate, serrate; flowers peduncled.

A deciduous perennial plant, native of the south of Europe, and introduced into this country in 1568. In height it is from twelve to eighteen inches; stem pale, leafy; leaves opposite, 5-ribbed, sessile, smooth, dotted; cultivated in common garden earth, and flowers from May to August—the corolla yellowish or pale purple, with red streaks, sometimes white. Serious accidents have resulted from the incautious use of this plant.

JATROPHA CURCAS.

Angular-leaved Physic Nut.

Class, &c. Monœcia Monadelphia of Linnæus. Euphorbiaceæ of Jussieu.

Gen. char. Male flower, calyx none; corolla, 1 petal, funnel-form; stamens 10, alternately shorter.

Spec. char. Leaves angular, heart-shaped.

An ornamental evergreen shrub,

brought from South America in 1731. It is cultivated in a bark or moist stove, and produces green flowers. The *seeds* are powerfully acrid. The juice of the *root* of the *J. manihot* is also poisonous, although the same root when deprived of the juice constitutes under the name of *tapioca*, a wholesome and nutritious food. The J. manihot, popularly called *Cassava Physic-nut* is also a native shrub from South America, distinguished from the former by its leaves being undivided, 3-5-lobed, and palmate.

JUNIPERUS SABINA.

Common Savine.

Class, &c. Diœcia Monadelphia of Linnæus. Coniferæ of Jussieu.

Gen. char. Male flower; calyx the scales of an amentum; corolla none; stamens 3. Female flower; scales of the amentum fewer than in the male, at length becoming fleshy, and uniting into a 3-sided berry.

Spec. char. Leaves opposite, erect, obtuse, glandular in the middle, tiled, in four rows.

An evergreen shrub first brought from the Levant in 1548. It is about four to six feet high; the stem shrubby and the branches erect; flowers, without petals, during May and June. The *leaves* and an *essential oil* obtained from them have caused death in consequence of their having been administered with the view of producing abortion.

MOMORDICA ELATERIUM.

Squirting Cucumber.

Class, &c. Monœcia Monadelphia of Linnæus. Cucurbitaceæ of Jussieu.

Gen. char. Male flower; calyx 5-cleft; corolla 5-parted; filaments 3; anthers cohering. Female flower; calyx 5-cleft; corolla 5-parted; styles 3-cleft; pome opening elastically, 3-celled.

Spec. char. Fruit oblong, bristly; leaves cordate, bristly, blunt, toothed; stem without tendrils.

A deciduous trailer, very common in our gardens, brought in 1548 from the

south of Europe. It has a large fleshy perennial root, somewhat like that of *bryony*. The stems are thick, rough, branching, with rough leaves on long foot-stalks. It blossoms with a yellow flower in June and July. The fruit is an inch and a half in length, swelling like a cucumber, of a grey colour like the leaves and covered with short prickles. The juice which runs from the fruit and that which is obtained by expression, when inspissated, constitute the *elaterium* so well known as a most powerful medicine.

NARCISSUS PSEUDO-NARCISSUS.

Common Daffodil.

Class, &c. Hexandria Monogynia of Linnæus. Amaryllideæ of Jussieu.

Gen. char. Corolla superior, 6-petalled, equal; nectary funnel-formed, 1-leafed; bearing the petals, stamens within the nectary; stigma 3-cleft.

Spec. char. Nectary curled and crenulate at the top.

A well known common denizen of our woods and meadows. It is a perennial bulbous rooted plant, about a foot high; the spathe or stalk is two-edged, one flowered; cup of the nectary bell-shaped, crisped, obscurely 6-cleft; leaves two or three, glaucous and bluntly keeled. Flowers are yellow, appearing as early as March and April. The garden varieties differ in the fulness of the colour as well as in the shape and position of their numerous petals and divided nectaries. Half an ounce of a watery extract of this plant has been known to prove fatal to a dog, hence it would also prove poisonous to man.

RANUNCULUS ACRIS.

Upright Crow-Foot.

Class, &c. Polyandria Polygynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. char. Calyx 5-leaved; petals 5-8, with a melliferous pore on the inside of the claw of each; seeds naked.

Spec. char. Calyx spreading; peduncles *round;* leaves 3-parted, in many segments; the upper ones linear.

This is a very common perennial of our meadows, flowering in June and July. The stem is erect, many flowered, scored, hairy; the leaves hairy, in three deep, wedge-shaped, many-cleft lobes, the lateral lobes deeply divided; upper leaves linear; flower yellow. It is often confounded with the *Ranunculus repens* and *Ranunculus bulbosus* under the name *butter-flower* or *butter-cup;* the former known by its calyx being reflected, the peduncles grooved; the latter by its calyx being spreading, and the peduncles grooved. In the garden it becomes a double flower well known as the *yellow bachelor's button.* Several of the species of this family afford by expression or decoction with

water a highly poisonous fluid—in all cases calling for the same treatment.

STALAGMATIS CAMBOGIOIDES.

Gamboge-Tree.

Class, &c. Polygamia Monœcia of Linnæus. Guttiferæ of Jussieu.

Gen. char. Hermaphrodite flowers; calyx 4-leaved; corolla 4-petalled, stamens about 30, inserted in a fleshy 4-angled receptacle; style thick; stigma 4-lobed; berry 1-celled, crowned by the style, 3-seeded.

This is a middling sized tree, a native of Siam and Ceylon. The leaves are on short petioles, ovate, entire, opposite and of a dull green colour. The flowers are axillary or lateral, whorled; the male flowers either in clusters by themselves or intermixed with the hermaphrodite. The gum resin, called *gamboge,* is obtained from incisions made in the leaves and young shoots, and is one of the most violent of the vegetable

Fig. 1.

Fig. 2.

Fig. 3.

acrids. Its external application will produce extensive cellular inflammation.

Animal Irritants.

POISONOUS INSECTS.

CANTHARIS VESICATORIA.

Blistering or Spanish Fly.

Plate 2. Fig. 1.

Symptoms. They very soon cause great pain and irritation about the urinary organs, accompanied with the most painful priapism; difficulty and pain in making water, which is often reduced in quantity, though sometimes increased; breath has a very peculiar, faint, sickly smell, and there is often a great aversion to liquids; stomach and bowels are tense and tender; frequently bloody evacuations; blood is also fre-

quently ejected by vomiting, and passed with the urine; sometimes convulsions and tetanus, and at times abortion.

Treatment. Free dilution with milk and demulcent fluids, bleeding, the warm bath, opiate frictions, and clysters of mutton broth and oil.

Morbid appearances. Inflammation of the stomach and bowels; also of the kidneys, ureters, and bladder; sometimes the penis is in a gangrenous state.

SEGESTRIA CELLARIA.

Spider of the cellar.

Plate 2. Fig. 2.

This species of spider is found in France and Italy. The body is about half an inch in length, hairy, of a dark colour approaching to mouse grey, with the mandibles green or bluish and a row of triangular dark spots, along the

middle of the back and the abdomen.

Symptoms. Around the part which has been bitten by this spider and by the Tarantula there is found a swelling of a livid colour, sometimes with phlyctænæ; in certain circumstances are also observed symptoms analogous to those which are produced by the scorpion.

BOMBUS TERRESTRIS.

Common Humble Bee.

Plate 2. Fig. 3.

Mouth with a very long straight setaceous sucker, formed of two unequal horizontal valves, and containing setaceous strings. Black, with thick yellowish down; and a yellowish bar at the base of the thorax and abdomen; wings with a broad sinuate outer margin. This species is common in Europe.

Symptoms, &c. See Apis or Vespa.

LYCOSA TARANTULA.

Common Tarantula.

Plate 3. Fig. 1.

This insect is about three quarters of an inch in length, the body covered all over with down and chiefly of an olive dusky brown colour; the upper border of the trunk and the outline of the eyes of a saffron colour. The back of the abdomen is marked with a row of trigonal dark spots with whitish edges. The legs barred with black and white and tinged with red. It is found in the south of Italy, especially near Calabria.

Symptoms. The bite of the Tarantula has been said to be fatal, but without foundation. The fabulous stories once circulated concerning it have been traced to the impostures of the peasants of Apulia, who allowed themselves to be bitten, and then counterfeited mad-

Fig. 1.

Fig. 2.

ness in order to excite the compassion of travellers. The usual effects are slight tumefaction and itching, and the treatment, such local means as tend to allay the inflammation and tumefaction.

SCORPIO EUROPÆUS.

European Scorpion.

Plate 3. Fig. 2.

The insects of the genus Scorpio, have eight legs and two chelæ or hands situated on the fore part of the head; eyes eight, three on each side the thorax and two on the back; feelers two, projecting, cheliform; no antennæ; tail long-jointed and terminated by a sharp crooked sting: on the underside are two instruments resembling a comb.

The Italian scorpion has a dark brown body; combs with eighteen teeth; hands angular, long, with cheli-

form claws. From the head to the tip of the tail about three inches in length.

Symptoms. The sting of the scorpion leaves a red mark, which enlarges a little, grows rather black towards the middle, and is commonly followed by pain, inflammation and swelling; to these succeed fever, shivering, vomiting, hiccough, &c. The symptoms vary considerably, according to the vigour of the animal and the nature of the climate. They are most venomous in very hot countries.

Treatment. The remedies to be employed against the sting of the Scorpion are volatile alkali, internally and externally, and emollient and oily topical applications, which diminish the inflammation.

VESPA VULGARIS.

Common Wasp.

Plate 4. Fig. 1.

The wasp is so well known, that a description of it here is needless.

For Symptoms, Treatment, &c., see Hornet or Bee.

VESPA CRABRO.

Hornet.

Plate 4. Fig. 2.

The antennæ, head and legs are of a brown or chesnut colour: the abdomen is of a fine orange brown, but on the extension of the annuli, it discovers on each side a line of black; the wings are of the colour of amber. It is nearly double the size of the common wasp. The female only is furnished with a sting, which is capable of inflicting severe pain.

Symptoms. The symptoms attendant on the sting of the wasp and hornet do not differ essentially from those produced by the bee, except that they are more aggravated. Fatal consequences have ensued from a sting in the œsophagus by a wasp incautiously swallowed in beer or other liquids.

Treatment. If the palate or œsophagus be stung, common salt diluted with a small quantity of water should be frequently swallowed:—this simple remedy is reported to have saved life. The same means may be adopted in case of a sting externally, or an anodyne may be applied, as the milky juice of the white poppy; or the juice of onions.

APIS MELLIFICA.

Common Bee.

Plate 4 Fig. 3.

Pubescent, with a greyish thorax; abdomen brown; hind-shanks ciliate and transversely striate within. The antennæ of the female have each ten articulations, of the male, eleven.

Symptoms. The sting of the Bee occasions acute pain and an erysipelatous tumefaction, very hard in the middle, which looks white and continues as long as the sting remains in the wound.

Treatment. Our first object should be to extract the sting with a small needle, cutting off the surrounding part with scizzars, and taking care not to press hard upon the wound, which would only aggravate the symptoms. The part punctured should then be

washed with salt and water or sea water. The preferable plan, perhaps, is to endeavour to neutralize the venom by some anodyne. Oily embrocations, goulard water, spirit of ammonia and Eau de Luce have been severally recommended.

POISONOUS FISH.

Mussels, Lobsters, Conger Eel, and other Fish.

Symptoms. Uneasiness and pain about the stomach, with sickness and headache; vertigo; redness and swelling of the face; generally a species of nettle-rash all over the body; shortness of breath; rarely, cold extremities, delirium and convulsions. The symptoms usually begin in a couple of hours, and quickly reach their maximum degree of intensity. The duration of the attack,

whether fatal or not is very variable, death sometimes occurring in a few hours, and sometimes not for three or four days.

Treatment. Give immediately a powerful emetic, and assist the vomiting by irritating the fauces until the stomach is completely evacuated; purge with castor oil, and at the same time dilute freely with acidulous liquids, giving at short intervals from 20 to 40 drops of æther in a little syrup or sugar and water.

Morbid appearances. Slight inflammation of the stomach and bowels, though cases have occurred in which no evidence of inflammation has been present.

POISONOUS SERPENTS.

COLUBER BERUS.

Common Viper.

Plate 5.

The most poisonous serpents are the *cobra de capello* and the *rattle-snake* abroad, and the *coluber berus* or *viper* in this country. The bite of the viper is always productive of distressing symptoms, and sometimes has even destroyed life. The poison is secreted by a pair of glands situated near the eye on either side, and is deposited in a sac connected with the cavity of a hollow tooth. When the animal inflicts a bite, the poison is forced from the bag into the wound through a perforation in the crown of the tooth.

Symptoms. In about twenty minutes

Coluber Berus | *Common Viper*

after the infliction of the bite, there is acute pain and swelling of the part bitten, which soon extends over the limb; nausea and intoxicating symptoms soon come on, succeeded by delirium; the part bitten becomes livid, and often gangrenous; pulse quick and irregular; breathing difficult and anxious; often bilious vomiting; sometimes impossibility of swallowing, with convulsions.

Treatment. If possible apply a cupping glass over the bite and draw as much blood as may wash away the virus; but if this cannot be done within the first few minutes, either remove the bitten part by incision, or carefully cauterize the spot, either with the potassa fusa or strong nitric acid. Oil and ammonia are generally preferred; in the West Indies they employ *Eau de*

Luce, the action of which depends on the ammonia it contains. Give brandy, ammonia, and other stimulants, with opiates. Arsenic has been recommended in doses of gr. ss. or gr. j., and it is said that this practice has been successful.

Morbid appearances. Inflammation, swelling, and lividity of the wound and adjacent parts.

Class II.

Narcotic Poisons.

Acidum prussicum.
Hyoscyamus niger.
Lactuca virosa et sativa.
Papaver somniferum.
Solanum dulcamara.

Symptoms. The symptoms produced by the narcotic poisons are pain in the

head, vertigo, partial or complete blindness, stupor, sometimes amounting to insensibility, paralysis, or convulsive action of the muscles under the control of the will, and prior to death profound coma.

Diagnosis. Unfortunately the narcotic poisons do not produce symptoms which enable the practitioner readily to know the nature of the case. The diseases for which they are more likely to be taken are apoplexy, epilepsy, inflammation of the brain, hypertrophy of the brain, and disease of the spinal chord; but by a careful examination of the symptoms before death, and often appearances after, less difficulty will attend the diagnosis.

Treatment. For poisoning by prussic acid, see below, and for counteracting the effects of the other narcotics the

same measures may be taken as advised for opium.

Morbid appearances. No morbid lesions whatever. In some cases, there is congestion of the veins in the head, and also an effusion of serum into the ventricles and between the pia mater and arachnoid membrane, but not by any means constant.

ACIDUM PRUSSICUM.

Prussic Acid.

Symptoms. When the dose is large, immediate death; but when the quantity does not exceed ten or twenty drops, it is succeeded by stupor and weight in the head; nausea, faintness, and vertigo, with loss of sight; these symptoms are followed by difficult respiration, dilated pupils, a small vibratory pulse, syncope, which terminate in-

sensibly in death, unless counteracted by proper means.

Treatment. Give immediately hot brandy and water, or camphor mixture, combined with liquid ammonia or the aromatic spirit of ammonia. If the patient be asphyxiated, we have been recommended to apply assiduously water of ammonia, by means of a feather, to the nostrils; or the head of the person should be held over a vessel containing the water of ammonia, diluted with twelve times of water, in order that some of the gas which it evolves may during inspiration be drawn into the lungs. The *aqua chlorinii* with four times of water, used in the same manner is also a valuable remedy. Cold affusion is inferior to these.

Tests. 1. A few drops of a solution of the persulphate of copper, added to

the prussic solution previously rendered alkaline with caustic potash, afford a dirty green precipitate, which, upon the addition of a little diluted sulphuric acid, becomes perfectly white. 2. To the prussic solution, rendered alkaline as before, add a few drops of a mixed solution of a proto- and a per-salt of iron, and a dirty brown precipitate is formed, which, upon being made acid with sulphuric or muriatic acid, is converted into prussian blue. 3. The prussic solution treated with nitrate of silver affords a white precipitate, or if proto-nitrate of mercury be used, an ash-grey precipitate.

Morbid appearances. Extreme prominence and unusually glistening appearance of the eyes; venous system congested, particularly that part of it which supplies the brain; prussic acid

Hyoscyamus Niger | *Black Henbane*

odour emitted by the blood and especially by that which is contained in the heart and larger vessels. These appearances, however, are by no means constant.

Laurel and *cherry water*, from the quantity of prussic acid which they contain, are highly poisonous, producing the same symptoms and requiring the same treatment as just described. The *essential oil of bitter almonds* contains a considerable proportion of prussic acid; but the almonds themselves may be eaten (in moderation) with impunity.

HYOSCYAMUS NIGER.

Common Henbane.

Plate 6.

Class, &c. Pentandria Monogynia, Linnæus. Solaneæ, Jussieu.

Gen. char. Corolla funnel-shaped, obtuse. *Stamina* inclined. *Capsule* covered with a lid, two celled.

Spec. char. Leaves embracing the stem, sinuate; flowers sessile.

This annual plant is a native of England, and grows by the road-sides and in waste uncultivated places, thriving best in rich soils. It flowers in June and July.

The root is long, compact, tapering, and fibrous. The stalk is about two feet in height, erect, cylindrical, woody and branched, beset with white hairs. The leaves are large, alternate, embracing the stem, downy, deeply sinuated, undulated, and of a sea-green colour. The flowers are simple, placed on terminal leafy spikes; they consist of a short tube with an expanded limb, which is divided into five obtuse segments, of a straw colour, and reticulated with purple veins: the calyx is tubular, permanent, and divided into five seg-

ments; the filaments are tapering and downy at the base, supporting purple anthers, and are inserted into the tube of the corolla: the style is longer than the corolla, and ends in a blunt stigma: the capsule is globular, invested with the body of the calyx, and contains numerous irregular brown seeds.

The general appearance of this plant would almost lead us to suspect its deadly nature, and this is confirmed by its strong, disagreeable, and narcotic odour; but it has scarcely any taste, and possesses but a slight degree of acrimony.

Both the herb itself and the seed are poisonous.

Symptoms. Giddiness and loss of speech, great dilatation of the pupil, delirium sometimes most violent, and

afterwards a lethargic or comatose state, &c.

Treatment. The same as for poisoning by opium *.

Morbid appearances. Not any recorded.

LACTUCA VIROSA.

Strong-scented Lettuce.

Plate 7.

Class, &c. Syngenesia, Polygamia Æqualis, Linnæus. Compositæ Cichoraceæ, Jussieu.

Gen. char. *Receptacle* naked. *Calyx* imbricate, cylindrical, with a membranous margin. *Pappus* simple, stipitate. *Seed* even.

Spec. char. Leaves horizontal; carina pointed and toothed.

This plant grows on the banks of ditches, flowering in July and August.

The stalk is about three feet in height, erect, slender, round, prickly below, and smooth above. The leaves are smoothish and toothed, the lower

* Page 84.

ones obovate and undivided; those of the stalk smaller, often lobed, embracing the stem; middle rib having prickles on its under side. Bractes cordate and pointed. Flowers numerous, compound, of a yellow colour, furnished with small scaly leaves; calyx oblong, and composed of small lanceolate scales: the corolla consists of florets scarcely longer than the calyx. Seeds elliptical, compressed, black and striated.

The *symptoms*, *treatment*, &c. of poisoning by this plant resemble, more or less, those which attend opium *.

PAPAVER SOMNIFERUM.

Common White Poppy.

Plate 8.

Class, &c. Polyandria Monogynia, Linnæus. Papaveraceæ, Jussieu.

Gen. char. Corolla four-petalled. *Calyx* two-leaved

* Page 84.

Capsule one-celled, opening by pores under the persistent stigma.

Spec. char. Calyx and capsule smooth; leaves incised and embracing the stem.

This species of poppy is a native of Asia, and is found wild in the south of Europe, where the seeds had probably been accidentally scattered; it is also cultivated in this country, flowering in July.

The root is annual, tapering, and branched. The stalk is erect, three or four feet in height, branched, of a glaucous green colour, round and cylindrical. The leaves are large, alternate, lobed, deeply cut into various segments, and embracing the stem. The flowers are large, terminal, and solitary; the calyx consists of two very smooth, ovate, concave segments, which fall when the flower expands; the petals are large, roundish, entire, somewhat undulated,

and commonly of a white or purple colour: the filaments are numerous, slender, shorter than the corolla, supporting erect, compressed anthers: the germen is roundish, with a many-rayed stigma: the capsule is smooth, large, and filled with a great many small seeds.

From cultivation and difference in soil, several varieties of the *Papaver somniferum* are met with; the double varieties are not at all inferior to the uncultivated plant.

Every part of the plant has the peculiar odour and taste of opium: but the milky juice, which is the active ingredient, resides chiefly in the capsules. The seeds however, when perfectly ripe, contain scarcely any of the narcotic principle, but are chiefly composed of mucilage, and in their native country are

often used as an article of food; they have a sweetish bland taste, somewhat like almonds.

Children are often very much injured, and sometimes destroyed, by the too free use of *Syrup of Poppies:* it gives rise to drowsiness, insensibility, and convulsions. Treatment here will be ammonia, brandy diluted, wine, and the warm bath.

OPIUM.

From the green capsules of the *Papaver somniferum* is obtained the common and destructive poison, called *opium*, every preparation of which produces violent effects. *Laudanum* or the tincture of opium is the general form in which it is taken with a view to destroy life.

Symptoms. A full dose occasions

immediate insensibility; with slow pulse; stertorous breathing; dilated pupil; greatest difficulty in being roused; the countenance is at first flushed, but soon becomes pallid; the pulse then becomes quick and irregular; sometimes convulsions and paralysis precede dissolution. Vomiting is not an unusual symptom when the dose is large.

Treatment. Give twenty or thirty grains of the sulphate of zinc, or one to three grains of the sulphate of copper until vomiting is excited; tickle the throat with a feather, and use every possible means to evacuate the stomach. The stomach-pump, if at hand, ought to be immediately employed. The person must be kept in constant motion and exercise by able assistants. In some cases it will be proper to open the jugular vein, to relieve the vessels of

the brain from a state of congestion. If scarcely any pulse, wine, brandy, and ammonia, should be introduced into the stomach. Acids should never be given till we are thoroughly convinced no opium remains in the stomach. Active purgatives both by the mouth and per anum. Coffee may be drank freely. Saline purgatives and effervescing draughts are useful when the patient is recovering. Artificial respiration if required.

Tests. The peculiar taste and smell of the contents of the stomach.

Morbid appearances. Inflammation of the stomach and intestines; but no evidences of an inflammatory state of the brain or its membranes.

SOLANUM DULCAMARA.

Woody Nightshade or Bitter-sweet.

Class, &c. Pentandria Monogynia of Linnæus. Solaneæ of Jussieu.

Gen. char. *Corolla* wheel-shaped; anthers slightly coalescing, opening by two pores at the apex; berry 2-celled.

Spec. char. Stem smooth, branched, climbing; leaves ovate-cordate, upper lanceolate, corymbs opposite the leaves.

This is one of our native plants growing plentifully in hedges which are in moist situations. It attaches itself to the bushes in the neighbourhood, sometimes climbing six or seven feet, and about June and July sends forth its flowers. The leaves are somewhat pubescent, and of a dull green colour; the flowers are purplish, disposed in drooping clusters opposite the leaves; the corolla is monopetalous and equally divided into five pointed reflected seg-

ments of a bright violet colour, with two green dots at the base of each.

This species of solanum is to a certain extent a narcotic poison, but the *solanum nigrum* and the berries of the *solanum tuberosum* or potatoe-plant, are reputed more powerfully poisonous.

CLASS III.

Narcotico-acrid Poisons.

Aconitum napellus.
Æthusa cynapium.
Atropa belladonna.
Brucea ferruginea.
Cicuta virosa.
Cocculus indicus.
Colchicum autumnale.
Conium maculatum.
Datura stramonium.

Digitalis purpurea.
Dryobalanops camphora.
Helleborus fœtidus.
Helleborus niger.
Nicotiana tabacum.
Œnanthe crocata.
Strychnos nux vomica.
Veratrum album.
Poisonous fungi.

Symptoms. In some measure resemble those occasioned by the simple narcotics; they are, however, more acrid, and excite considerable disturbance in the alimentary canal; some exhilirating effects precede their sedative operation, unless the dose be very large; and they more commonly occasion convulsions and spasmodic affections.

Treatment. This must depend on the effect produced by the respective poisons. If narcotic symptoms predo-

minate, then adopt measures accordingly; if irritating, the treatment proposed for irritating poisons.

Morbid appearances. Sometimes those which follow the action of the narcotics, and sometimes those which are the result of irritation, or the two, more or less combined.

ACONITUM NAPELLUS.

Wolf's Bane, Monkshood, or Aconite.

Plate, No. 9.

Class, &c. Polyandria Trigynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. char. Calyx wanting. Petals five, the uppermost arched. Nectaries two, peduncled, recurved. Pods three or five.

Spec. char. Laciniæ of the leaves linear, broadest above, and gashed.

This perennial plant is a native of France, Germany, and Switzerland, growing in elevated situations: it is

Aconitum Napellus | *Common Wolfs Bane*

also frequently cultivated as an ornament to our gardens.

The root is fusiform. The stem several feet in height, erect and leafy. The lower leaves are lobed, and deeply cleft, placed on long petioles; the upper ones are nearly sessile, of a dark green colour above, and pale beneath. The flowers are placed on unifloral, axillary peduncles, and terminate the stem in a long spike; the petals are of a deep violet colour, the uppermost hooded, covering two curious nectaries; the lateral ones roundish, and the lower elliptical: the filaments are spreading, supporting whitish anthers; the germens are from three to five, with simple reflected stigmas.

The whole plant is very deleterious in its recent state; it has a narcotic odour, and a pungent acrid taste: the

heat which it occasions in the mouth will continue for some minutes. The activity of the plant is much diminished by drying. The root is the most active part, but the leaves alone are used medicinally.

In large doses monk's hood destroys life quickly, whether internally or externally applied. Burning heat in the throat, vomiting, purging, abdominal tension, delirium, and convulsions, are the symptoms.

ÆTHUSA CYNAPIUM.

Common Fool's-Parsley.

Plate, No. 10.

Class, &c. Pentandria Digynia of Linnæus. Umbelliferæ of Jussieu.

Gen. char. Fruit striate; involucels halved, 3-leaved, pendulous.

Spec. char. Leaves all alike.

A little annual plant, about two feet high, found commonly in gardens and

Æthusa Cynapium | Common Fools Parsley

fields. It is often mistaken for garden parsley, from which, however, it may be thus distinguished :—in the *true parsley* the leaves are twice pinnated, or divided, and the leaflets are broad, and cut into three wedge-shaped toothed scales ;—in the *fool's parsley*, the leaves are thrice pinnated, and the leaflets are narrow, sharper, and jagged, and have a disagreeable nauseous smell. It flowers from July to September, in chalky fields ; petals whitish. When in flower, the principal umbels are destitute of involucra, while the partial umbels are furnished with an involucrum, consisting of four or five narrow sharp leaves, hanging down from one side *only* of the common stalk ; this alone will distinguish it not only from parsley, but from all other native umbelliferous plants.

Fool's parsley produces nausea, vomiting, headache, giddiness, and a partial paralysis or numbness of the limbs; pains in the stomach, abdominal tension, and difficulty of breathing in some cases.

ATROPA BELLADONNA.

Deadly Nightshade.

Plate 11.

Class, &c. Pentandria Monogynia of Linnæus. Solaneæ of Jussieu.

Gen. char. Corolla bell-shaped. Stamina distant. Berry globular, two-celled.

Spec. char. Stalk herbaceous; leaves ovate and entire.

This perennial plant is common in hot and temperate countries, especially in stony and shady situations. It grows in many parts of England, but is seldom to be met with in the neighbourhood of London. It flowers towards the latter end of June; and its fruit ripens

Atropa Belladonna | *Deadly Nightshade*

in September. It is frequently cultivated in our gardens.

The root of the Belladonna is thick, long and branched; from which proceed several herbaceous, cylindrical, branched stalks, from three to five feet in height, of a purplish colour. The leaves are in pairs, ovate, entire, soft, pointed, and of different sizes. The flowers are pendent, supported on solitary and axillary peduncles: the calyx is monosepalous, deeply divided into five segments: corolla monopetalous, bell-shaped, partially divided into five lobes; it is of a dusky purplish colour, and contains five stamens, whose filaments are inserted into the base of the corolla, supporting roundish anthers; the germen is spheroidal supporting a style with a divided stigma. The fruit is a roundish berry, contained within the

calyx, of a blackish colour and pulpy, having several kidney-shaped seeds.

Dryness of the throat, difficult deglutition, aphthæ of the mouth and fauces, abdominal tension, and stranguary, but rarely occur; but the narcotic symptoms are delirium, dilatation and insensibility of the pupils to light, partial blindness, and after a considerable time, lethargy or coma.

BRUCEA FERRUGINEA.

Ash-leaved Brucea.

Class, &c. Diœcia Tetrandria of Linnæus. Terebinthaceæ of Jussieu.

Gen. char. Male flower; calyx 4-parted; petals 4; disk 4-lobed. Female flower; pericarps 4, 1-seeded.

Spec. char. Leaves opposite, stalked, pinnated with an odd one of 5 or 6 pairs.

This is a native tree or shrub of Abyssinia, from whence it was introduced into Britain in 1775. It is cultivated in a frame, and varies in height

from four to six, or eight feet, and sends forth greenish flowers during April and May. The bark of this tree is poisonous, possessing an active principle, called *brucia*, similar in its action to *strychnine*. It was formerly imported into Europe for the *true angustura bark;* they may, however, be known by infusing each separately in muriatic acid, and then adding a drop of ferro-prussiate of potash; the bark of the brucia antidysenteriaca vel ferruginea will afford a greenish-blue precipitate, whereas the true angustura bark will yield none.

CICUTA VIROSA.

Long leaved Cowbane, or Water Hemlock.

Plate 12.

Class, &c. Pentandria Digynia of Linnæus. Umbelliferæ of Jussieu.

Gen. char. Fruit subovate, sulcated.

Spec. char. Umbel opposite; petioles marginate, obtuse.

An extremely poisonous plant, found wild in the ditches of our country, and at times eaten by mistake for wild smallage. Root perennial, thick, hollow, and beset with numerous fibres. Stalk thick, round, striated, smooth, and about four feet high. Leaves pinnated: leaflets usually in ternaries, spear-shaped and serrated. Flowers in large expanding umbels. Partial involucrum composed of several short, bristle-shaped leaves. Calyx scarcely to be seen; florets uniform, fertile; each consisting of five ovate, greenish-white petals; filaments five, longer than the petals; anthers simple and purplish; stigmas simple; fruit egg-shaped.

Gastric irritation, vomiting, giddiness, profound coma, insensibility, and finally

very violent tetanic convulsions are the symptoms produced.

COCCULUS.

Moon-seed.

Class, &c. Diœcia Hexandria of Linnæus. Menispermaceæ of Jussieu.

A large genus of climbing plants, with peltate, cordate, ovate, or oblong, entire, rather lobed leaves. The berries of many of the species, known under the name of *cocculus indicus*, are said to be frequently used by brewers, to give to their ale and porter an intoxicating quality. In large doses these berries will produce, in addition to tetanic paroxysms, sickness, vomiting, and other indications of intestinal irritation.

COLCHICUM AUTUMNALE.

Common Meadow Saffron.

Plate 13.

Class, &c. Hexandria Trigynia of Linnæus. Melanthaceæ of Jussieu.

Gen. char. Corolla, 6-parted, with a rooted tube. Capsules, connected, inflated.

Spec. char. Leaves flat, lanceolate, erect.

This perennial plant grows in moist meadow-grounds in the more temperate countries of Europe, flowering at the beginning of autumn without leaves, and bearing the fruit subsequent to the leaves.

The bulb is double, solid, succulent, and covered with a brown membranous coat. The leaves make their appearance in spring, and are radical, spear-shaped, and somewhat waved. The flowers appear in autumn, immediately succeeding the decay of the leaves: it is large, of a purplish colour, and spring-

Colchicum Autumnale | *Meadow Saffron*

ing from the root by a long naked tube; the calyx wanting: corolla, monopetalous and divided into six lance-shaped, keeled segments, of a pale lilac or purple colour: the filaments are tapering, shorter than the corolla, terminating in yellow erect anthers: styles slender and reflexed at the top, supporting simple pointed stigmas: the capsule is three-lobed, three-celled, placed upon a strong peduncle, and containing numerous seeds.

The old bulb begins to decay at the time of flowering, (in autumn,) at which time the new one is forming, and in the following May is perfected; the old one being entirely wasted, the new bulbs should be dug up at this time, for they possess more activity than those procured in autumn: some, however, recommend that they should be dug up

in autumn, but they are certainly much inferior at that time of year; and it is no doubt owing to the bulb being sometimes gathered at different seasons that we have such various accounts of the efficacy of the Colchicum: in autumn it has a sweetish taste, but in summer is highly acrimonious;—the nature of the soil is said to have some influence on its activity.

The symptoms produced by poisoning from meadow saffron and white hellebore are the same, for they both owe their activity to the same alkali, viz. *veratrine*. See *Veratrum album*.

CONIUM MACULATUM.

Common or spotted Hemlock.

Plate 14.

Class, &c. Pentandria Digynia of Linnæus. Umbelliferæ of Jussieu.

Gen. Char. Partial involucrum placed only on one

Conium Maculatum | *Common Hemlock*

side, three-leaved. Fruit nearly globular, five-streaked, notched on both sides.

Spec. Char. Seeds striated.

Hemlock is a large biennial umbelliferous plant, growing in the neighbourhood of dunghills, ditches, and in moist shady places, flowering in June and July.

The root is fusiform, about as thick as the finger, yellowish externally and whitish within, exuding, when cut, a milky juice. The stalk is cylindrical, from three to five feet high, thick, hollow, branched, leafy, smooth, shining, and beset with purple spots. The lower leaves are large, tripinnated, of a bright green colour, standing upon long foot-stalks, which proceed from the joints of the stem; the smaller or upper leaves are bipinnate. The flowers are arranged in numerous loose umbels, which are both partial and universal.

The involucrum consists of from three to seven short, reflected, lance-shaped leaflets, white at the margin: the partial involucrum is composed of three or four leaflets, which are disposed on the external side of the umbel. The flowers are small, composed of five petals, unequal, heart shaped, and inclining inwards; with an entire calyx; stamens the length of the petals, supporting whitish anthers; the styles are filiform, larger than the petals, diverging and terminating in round stigmas. The fruit is oval, striated, containing two brownish seeds.

The effects of hemlock are, giddiness, delirium, coma, convulsions, and sometimes death.

Datura Strammonium | *Common Thorn Apple*

DATURA STRAMONIUM.

Thorn Apple, or James'-town Weed.

Plate. No 15.

Class, &c. Pentandria Monogynia of Linnæus. Solaneæ of Jussieu.

Gen. Char. Corolla funnel-shaped, plaited. Calyx tubular, angular, deciduous. Capsule four-valved.

Spec. Char. Pericarps spinous, erect, oval; leaves ovate, glabrous.

The Thorn Apple is an annual plant, and a native of America, but is now found growing in many places in the vicinity of London, and elsewhere upon dunghills, and amongst the rubbish thrown from gardens, which generally contains some of its seeds; for it is frequently cultivated, and when it once takes possession of a soil, it is with difficulty extirpated: it flowers in July.

The stalk is thick, round, smooth, spreading, dichotomous above, and

rising from two to three feet in height. The leaves are of a dark green colour, large, irregularly ovate, pointed at the extremity, angular, deeply indented, and supported on round foot-stalks. The flowers are large, white, axillary, solitary, placed on short erect peduncles: the calyx is one-leafed, tubular, pentangular, and four-toothed: the corolla is funnel-shaped, plaited, furnished with a long cylindrical tube, longer than the calyx. The filaments are slender, adherent to the tube, and support oblong flat anthers; the style is filiform, terminating in a short club-shaped stigma; the germen is oblong, and placed above the insertion of the corolla: the fruit is large, fleshy, ovate, beset with sharp spines, four-celled below, and two-celled above, containing numerous kidney-shaped seeds.

The effects produced by an over dose of stramonium are nearly the same as from poisoning by belladonna.

DIGITALIS PURPUREA.

Purple Foxglove.

Plate 16.

Class, &c. Didynamia Angiospermia of Linnæus. Scrophularineæ of Jussieu.

Gen. Char. Calyx five-petalled. Corolla bell-shaped, five-cleft, bellying. Capsule ovate, two-celled.

Spec. Char. Segments of the calyx ovate, acute; Corolla obtuse, upper lip undivided; leaves downy.

The purple foxglove grows about hedges and thickets, more particularly in gravelly soils and high, dry situations, flowering from June to July; it is also cultivated as an ornament to our gardens.

The root is biennial, knotty, and fibrous. The stem upright, tapering,

roundish, leafy, and about four feet high. Leaves slightly serrated and wrinkled, generally on winged footstalks, alternate, having a dark green upper surface, and the lower one downy: the radical ones are egg-shaped; the upper ones spear-shaped. Flowers numerous, and generally grow from one side of the stem; they are pendulous, and supported on round footstalks, accompanied by bractes: calyx downy: corolla tubular, somewhat bell-shaped, of a purple colour, and assuming a mottled appearance within, slightly lobed at the margin: the filaments spring from the tube and support large, two-lobed anthers: germen ovate, supporting a simple style, with its summit cloven.

From inattention to the proper time of gathering the leaves, those of other

plants have been mistaken for Foxglove; but such errors may easily be avoided by not collecting the plant till it is in flower, in which state it is most active in its operation. Immediately the leaves are gathered, they must be dried as speedily as possible, and if practicable, this should be effected with the exclusion of light. When perfectly dry they must be preserved in dark situations, free from air and moisture, otherwise they will lose their beautiful green appearance, and become much less active. It is proper to have a fresh supply annually, and we would recommend practitioners, if possible, to superintend the gathering and drying of the leaves themselves.

Intermittent pulse, vertigo, imperfect vision, nausea, hiccough, cold sweats, delirium, syncope, convulsions, and

death are the consequences. The usual treatment and morbid appearances.

DRYOBALANOPS CAMPHORA.

Camphor Tree.

Class, &c. Polyandria Monogynia of Linnæus. Guttiferæ of Jussieu.

Gen. Char. Calyx one-leafed, permanent; enlarged into a gibbous cup, with five ligulate, long, scariose wings. Corolla five-petalled. Capsule superior, one-celled, three-valved, seed solitary. Embryon inverse, without perisperm.

Spec. Char. Leaves opposite below and alternate above; perianth is a one-leafed, five-parted, persistent capsule.

This tree is a native of the forests on the western coast of Sumatra. It grows to a great height, and often measures six or seven feet in diameter. *Camphor*, so well known as a drug, is afforded by several plants, but the largest quantities are produced by the dryobalanops camphora. In the heart of this tree the camphor forms, occupying por-

Helleborus Fœtidus | *Stinking Hellebore*

tions of a foot and a foot and a half long, at certain distances.

Camphor to the quantity of two scruples has been followed by languor, succeeded by giddiness, insensibility and convulsions, and delirium and somnolency. The treatment necessary and morbid changes have not been recorded.

HELLEBORUS FŒTIDUS.

Fœtid Hellebore, or Bear's Foot.

Plate 17.

Class, &c. Polyandria Polygynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. Char. Calyx none. Petals five or more. Nectaries bilabiate, tubular. Capsules many-seeded, nearly erect.

Spec. Char. Stalk many-flowered, leafy; leaves pedate.

This plant grows under hedges and in shady situations, flowering in March and April.

The root is small and bent, with nu-

merous dark coloured fibres. The stem is nearly two feet in height, round, strong, naked, and towards the top divided and subdivided into branches. The leaves are on long, channelled foot-stalks, surrounding the middle of the stem, and of a deep lurid green colour, and pedate; the leaflets are long, narrow, lanceolate, serrate. At each ramification of the flower stem, are scaly, smooth, alternate, trifid leaves; those near the flowers are ovate, entire, and pointed. The flowers are numerous, terminal, peduncled, and pendent: the petals are five ovate, concave, and persistent, of a pale green colour, the margins usually tinged with purple: stamina the length of the petals: anthers white: germens three, and resemble those of the Helleborus Niger.

Helleborus Niger | *Black Hellebore*

HELLEBORUS NIGER.

Black Hellebore, or Christmas Rose.

Plate 18.

Class, &c. Polyandria Polygynia of Linnæus. Ranunculaceæ of Jussieu.

Gen. char. Calyx wanting. Petals five, or more. Nectaries bilabiate, tubular. Capsules many seeded, nearly erect.

Spec. char. Scape one or two-flowered, nearly naked; leaves pedate.

This plant is a native of Austria, the Appennines and Pyrenees, flowering from December to March. It is now cultivated in our gardens.

The root is perennial, transverse, rough, knotted, externally black, and internally whitish, sending off many depending fibres. The scapes, or flower stalks, are erect, round, towards the bottom reddish, and surrounded by an involucre. The leaves are of a deep green colour, compound, of a peculiar shape, generally divided into five leaf-

lets, and spring directly from the root, by long foot-stalks; the leaflets are elliptical, smooth, coriaceous, and the upper, half serrated: the floral leaves, which are ovate and concave, supply the place of the calyx: the petals are large, roundish, concave and spreading, at first of a white colour, with a tint of red, but by age they turn green. The nectaries are eight, tubular, bilabiate, and of a greenish colour; filaments numerous, with yellow anthers; the germens vary from four to eight.

The roots of several plants have been occasionally mixed with those of the Black Hellebore, and sold as the genuine article; a fraud of the greatest importance to detect, as they possess properties widely different, and some of them are so very active that mischievous consequences have been the result of

exhibiting them; for they cannot very readily be distinguished.

The fibrous part of the root, which alone is employed medicinally, is about the thickness of a straw, and six inches in length, of a deep brown colour externally, and internally whitish; their taste is bitter and acrid, leaving a sensation of heat upon the tongue; their odour is nauseous and acrid, but much impaired by age.

The poisonous principle of this plant, resides principally in the root. Vomiting, delirium, convulsions, and death, have followed a decoction, before the third hour.

NICOTIANA TABACUM.

Virginian Tobacco.

Class, &c. Pentandria Monogynia of Linnæus. Solaneæ of Jussieu.

Gen. char. Corolla funnel-shaped, with the border

plaited; stamens inclined; capsules two-valved, two-celled.

Spec. char. Leaves sessile, oblong, lance-shaped, acuminate, the lower ones decurrent; mouth of the corolla inflated; segment short, acuminate.

A native annual of America; but now commonly cultivated in Europe. The root is large and fibrous, and sends up an erect, branching stem, about four feet in height, round, villous, and slightly viscid. The leaves are numerous, alternate, entire, and pointed; the lower leaves being about two feet long and two inches broad. The flowers, which appear in July and August, are pinkish, and in large terminal panicles.

In moderate quantities tobacco produces a slight degree of excitement, which is shortly followed by giddiness, syncope, nausea, vomiting, feeble pulse, stupor or lethargy, insensible pupil, laborious breathing, and convulsive

twitches of the muscles. Whether taken into the stomach, or administered per anum, the effects are the same. In the latter case, in addition to the exhibition of strong stimulants, an infusion of galls should be thrown up the rectum.

ŒNANTHE CROCATA.

Hemlock Dropwort.

Class, &c. Pentrandria Digynia of Linnæus. Umbelliferæ of Jussieu.

Gen. char. Calyx of 5 teeth; petals obcordate, with an inflexed point; fruit subterete, crowned with the straight styles; carpels, with five blunt convex ridges, of which the lateral ones are marginal; seed, tereti-convex; universal involucre various, partial of many leaves.

Spec. char. Leaves tri-quadripinnate, leaflets cuneato-ovate and serrated, those of the upper leaves narrower; general involucre of 5 leaves.

An indigenous perennial, about three or five feet high, common in watery places, by ditches and rivers. The root consists of large fusiform tubers,

and the plant is known by the great breadth of the leaflets, by a much-branched stem, and by abounding with a yellow poisonous juice. It is often confounded with the conium maculatum.

Burning heat in the throat and epigastrium, followed by stupor and finally by violent convulsions, death being seldom protracted beyond the fourth hour.

STRYCHNOS NUX VOMICA.

Vomic or Poison Nut.

Class, &c. Pentandria Monogynia of Linnæus. Apocyneæ of Jussieu.

Gen. char. Corolla tubular, 5-cleft; berry 1-celled, with a woody coat.

Spec. char. Leaves ovate, stalked; cymes subterminal; stem unarmed.

The strychnos is a middling size tree, a native of the East Indies, and especially abundant on the coast of Co-

Veratrum Album | *White Hellebore*

romandel. It is about fifteen feet in height; the leaves opposite, ovate, entire, petiolated, shining and smooth; the flowers are small, greenish-white, and disposed in subterminal cymes; the berry is globular, green when young, afterwards of a golden yellow colour, pulpy, and contains several seeds, which are flat, round, and greyish, well known in commerce under the name of *nux vomica*. The symptoms produced and the treatment required for poisoning by *nux vomica*, are the same as related under *veratrum album*.

VERATRUM ALBUM.

White Hellebore.

Plate 19.

Class, &c. Polygamia Monœcia of Linnæus. Colchicaceæ of Jussieu.

Gen. char. Hermaphrodite flower; calyx none; corolla, 6-petalled; stamens 6; pistils 3; capsules 3, many seeded. Male flower the same, with the rudiment of a pistil.

Spec. char. Stalk decomposed above; corollas erect.

The veratrum is a native of the mountainous parts of Greece, Italy, Switzerland, and Russia. Those specimens which are cultivated in our gardens, flower in July. The root is perennial, fleshy, and fusiform, having strong fibres collected into a head. The stem is thick, round, hairy, erect and branching. The leaves are oblong, ovate, plaited longitudinally, of a yellowish-green colour, and embracing the stem at the base. The flowers are in long terminal spikes, composed of small alternate spikelets, each accompanied by a lanceolate bracte: each flower consists of six persistent petals of a pale green colour: the filaments closely surround the germen, diverge and terminate in yellow quadrangular anthers: the germens are three in each hermaphrodite flower, oblong, with erect

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bifid styles, crowned with flat spreading anthers.

The effects of white hellebore are vomiting and hypercatharsis, with bloody stools; great anxiety, tremors, vertigo, syncope, sinking of the pulse, cold sweats, convulsions, and death. To obviate these effects, immediately evacuate the stomach by copious draughts of oily and mucilaginous liquids, and give emollient clysters to sheath and sooth the rectum; then administer acidulous fluids, coffee, and camphor, and bleed.

POISONOUS FUNGI.

AGARICUS MUSCARIUS*.

Poisonous Agaric.

Plate 20. Fig. 1.

Gen. Char. Hymenium in lamellæ; lamellæ simple, parallel.

* Linnæus.

* Stem central with a veil. Gills unchangeable. Sporidia white.

§ (Amanita. Fries). Veil double, universal separate, partial annular, somewhat persistent.

Spec. Char. Margin of the cap striated, orange-red, sprinkled with angular warts; volva vanishing, scaly; stipes bulbous.

This Agaric has a large pileus, varying, in colour, convex, but turning up with age and sprinkled with downy warts; gills (lamellæ) white, mostly uniform; stem solid, cylindrical, hollow with age, scaly, bulbous at the base, from 3 to 5 inches high, $\frac{3}{4}$ to $1\frac{1}{2}$ in diameter. It is found in pastures.

AGARICUS VERNUS.

Vernal Agaric.

Plate 20. Fig. 2.

Spec. Char. Cap somewhat scaly, edge smooth; stipes solid, nearly equal. Volva loosely sheathed.

The gills are white, numerous and irregular; the pileus which is at first convex becomes concave with age; the stem is cylindrical, thick, firm, and

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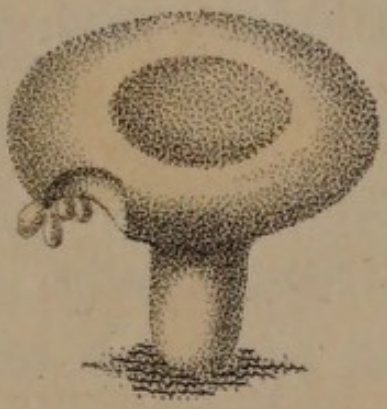

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white, about 4 inches high. This Fungus is found in woods and damp places in Spring and has often been gathered for the common mushroom.

AGARICUS CONTROVERSUS*.

Controverted Agaric.

Plate 21. Fig. 2.

§ Galachæus (Fries) Pileus fleshy, becoming depressed. Lamellæ unequal, milky.

* Edge of the cap rolled inwards, do wny.

Spec. Char. White; pileus villous, brownish red, variegated, downy at the edge. Stipes solid.

Found in beech woods in September and October.

AGARICUS NECATOR†.

Killing Agaric.

Plate 21. Fig. 1.

Spec. Char. Cap smooth zoned, olive-brown; margin villous, rolled in; stipes solid.

This is considered one of the most deleterious of the genus. It is of a red

* Persoon. † Bulliard.

colour bordering on yellow. The pileus is at first convex, afterwards flat, then concave in the centre; the surface is covered with hairy patches which disappear with age. It is common in woods at the beginning of Autumn.

AGARICUS VELLEREUS*.

Gregarious Agaric.

Plate 20. Fig. 3.

** Cap dry, naked at the edge. Gills not altering. Substance compact, tough.

Spec. Char. White; cap umbilicate, downy, rigid; lamellæ narrow, distant; milk white; stipes solid, thick.

This is the *A. lactifluus acris* of Bulliard, and is enumerated by Orfila among the poisonous Agarics, though by some it is considered merely acrid. The pileus as it grows older loses its whiteness and becomes somewhat funnel-shaped, with a ragged margin. It

* Fries.

is found in woods and thickets in autumn.

AGARICUS PYROGALUS.

Red milked Agaric.

Plate 21. Fig. 3.

Spec. Char. Cap dry, smooth, somewhat zoned, livid; lamellæ distant, yellow. Stipes hollow, cinereous.

It is nearly two inches high, of a livid colour, growing in woods from August to October.

There are many more poisonous Fungi than those enumerated here.—The following are the chief criteria of the deleterious properties of this numerous family—their being found in moist and shady situations—soft and porous substance—dingy and shining surface—changing colour when cut—bulbous and soft stems—virulent odour, &c.

Symptoms. The symptoms produced

by the poisonous fungi are sometimes of purely an irritating kind;—often exclusively narcotic; but generally a combination of both.

Urgent dyspnœa, scorching thirst, tormina of the bowels, abdominal tension and profuse diarrhœa are the common results. Dimness of vision, giddiness, delirium and coma, constitute the usual narcotic symptoms. Convulsions and faintings sometimes follow. It is worthy of observation, that these distressing effects are not perceived for some hours after the poison has been swallowed.

Treatment. As there is no antidote to this kind of poison, the only remedy is to expel the noxious contents of the stomach by emetics, &c.

Morbid appearances. Lividity of the body, distension of the abdomen, fluid-

ity of the blood, inflammation, gangrene of the stomach and intestines, and venous congestion of the lungs and brain.

Appendix.

MEANS TO BE RESORTED TO IN CASES WHERE ANIMATION IS SUSPENDED, FROM DROWNING, HANGING, OR BREATHING DELETERIOUS AIRS.

DROWNING.

First remove all clothes, and then convey the patient to a convenient and airy situation; artificial respiration is now to be commenced by inflating the lungs from the nose by a pair of bellows passed up one nostril; or with your own mouth, if no other convenience be at hand: when the proper apparatus can be readily procured, that is best for the purpose; after each inflation the

lungs must be again emptied, by pressure made on the chest. Wrap the body in warm blankets, and apply warmth to the body in any gradual manner. It is useless and improper to rub the body with any stimulating application. Apply hot water to the feet, or warm bricks. Introduce an elastic tube into the stomach, in order to convey stimulating fluids into that organ, as brandy, wine, &c.

The employment of tobacco clysters is decidedly bad practice.

When respiration becomes natural, we suspend our artificial operations; and as soon as the patient is able to swallow, give wine and water, and nourishing food. Never leave the person until he has perfectly recovered his senses. If oxygen gas be at hand, it may be employed. Electricity has

been considered by some as an useful adjunct; it may be tried.

HANGING.

A similar plan of treatment is necessary. Bleeding is often required here, from the jugular vein, to relieve the vessels of the brain and lungs; it should only be in a small quantity.

NOXIOUS VAPOURS.

Similar treatment necessary. Here the temperature of the body is generally above the natural standard, and cold water should be suddenly dashed over the body, in addition to the other means. It is likewise very desirable, if possible, to substitute oxygen gas for the atmospheric air, in these cases.

When suffocation is occasioned by substances lodging in the air passage,

and thus obstructing respiration, it is often necessary to perform the operation of Bronchotomy : here two methods have been recommended ; one dividing the rings of the trachea longitudinally ; the other making an opening between the thyroid and cricoid cartilages : each operation has its advocates, but we should prefer the former.

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