
CHAP. VIII.**OF CATHARTICS.**

CATHARTICS are those medicines which quicken or increase the evacuation from the intestines; or which, when given in a certain dose, produce purging. They are medicines of considerable importance, and differ from each other very considerably in their powers.

Cathartics evidently act, by stimulating the intestines so as to increase the natural peristaltic motion. Their contents are thus more quickly propelled and evacuated. The greater number, or perhaps all of them, have however a farther effect. They stimulate the extremities of the exhalant vessels, terminating on the inner surface of the intestines: they thus cause a larger portion of fluid to be poured out, and hence the evacuations are more copious, and of a thinner consistence. Some cathartics have this power of increasing the effusion of fluids from the exhalants much more than others, such for instance are the Saline Purgatives. Dr Cullen has even supposed that some may act solely in this way, and without increasing directly the peristaltic motion. There is, however, no proof of this; and it seems scarcely pro-

bable that any substance should act as a stimulant on these vessels, without at the same time stimulating the moving fibres of the intestines.

The action of cathartics is not confined to the parts to which they are directly applied. Their stimulus is extended to the neighbouring organs, and hence they promote the secretion, and increase the discharge of the bile and other fluids usually poured into the intestinal canal. These effects are produced in very different degrees, by different cathartics, and there seems some reason for admitting an opinion adopted by the ancients, that certain cathartics have peculiar powers, in this respect; some for instance, having the power more particularly of promoting the discharge of bile, others that of the mucus of the intestines, or of the serum; and it is not improbable, adds Dr Darwin, that the pancreas and spleen may be peculiarly stimulated into action, by some others of this class of medicines.

There is likewise a difference in cathartics with respect to the parts of the intestinal canal on which they act. Some increase its peristaltic motion through its whole length; others, as aloes, have their action more confined to the lower part, and principally to the rectum.

Lastly, it is to be observed, that the action of many cathartics is extended even to the stomach; its peristaltic motion is increased, either from association with the motion of the intestinal canal, or from the action of the stimulus of the cathartic applied, and its contents are therefore more quickly discharged by the pylorus. From this

cause, a full dose of a saline purgative will sometimes operate in half an hour after it is given.

There are several other differences between the medicines belonging to this class: some act slowly; others more quickly: some are liable to occasion nausea and griping, and in a large dose tenesmus; others, even when they operate effectually, are free from these disagreeable effects: some produce only one evacuation, others continue to act for a considerable time.

Besides the differences between particular cathartics, a general difference in their mode of operation has been supposed to exist, from which they have been classed under two divisions. Some operate mildly, without exciting any general affection of the system, without even stimulating perceptibly the vessels of the intestines, and hence they merely evacuate the contents of the canal. Others are more powerfully stimulant: they occasion an influx of fluids from the exhalant vessels, and from the neighbouring secreting organs: they even extend their stimulant effect to the system in general, and if taken in too large a dose are liable to excite much irritation, and even inflammation on the surface of the intestines. The former are distinguished by the title of Laxatives, the latter are named Purgatives, and the stronger of them, Drastic Purgatives. The distinction is not altogether correct, since it refers merely to a difference in power; yet neither is it one to be altogether neglected.

From the indications which cathartics are capable of

fulfilling, their utility in many cases of morbid affection must be obvious. In some general affections of the system, they procure a prompt, copious, and therefore useful depletion. And wherever there exists retention of the contents of the intestinal canal, where these contents are acrid, or where extraneous bodies are present, their evacuation by the operation of a cathartic is the obvious method of treatment.

The valuable observations of Dr Hamilton have established, however, still more clearly the importance of this class of remedies, have shewn that they admit of more extensive application, and have pointed out with more precision than has hitherto been done, the principles which regulate their administration.

In many diseases, there exists a state of the intestinal canal giving rise to retention of its contents, which is not to be obviated by the occasional administration of a cathartic, but which requires a continuation of the operation short of that of purging, until the healthy state of the bowels be restored. By this practice the cure of diseases has been accomplished, which, previously to Dr Hamilton's publication, were treated by very different methods, and were not supposed to be so peculiarly connected with any state of the alvine evacuation.

Thus in fever, the peristaltic motion of the intestines is diminished, the fœculent matter is retained, and becomes a source of irritation; its evacuation, therefore, by the exhibition of purgatives is clearly indicated, nor has this been altogether neglected. Physicians, however, were

scarcely aware of the necessity of producing it to a sufficient extent; and in fevers of the typhoid type in particular, were frequently deterred from doing so by the fear of reducing the strength of the system by an evacuation considered as debilitating. Dr Hamilton's observations establish the propriety of the freer use of purgatives in fever, so as to produce complete and regular evacuation of the bowels, through the whole progress of the disease; and the cases he has published afford striking proofs of the advantages derived from the practice. It is attended with equal advantage in scarlatina.

Several of the diseases comprehended under the class Neuroses appear to depend on, or to be very intimately connected with a torpid state of the intestines, from which an accumulation of their contents takes place, proving a source of irritation that often affects the general system. Chorea is proved by Dr Hamilton's observations to arise from this cause; and he has introduced with great success the mode of treatment, by the free use of purgatives, continued until the healthy state of the alvine evacuation has been established. The same practice, and with similar success, applies to hysteria, and, in Dr Hamilton's opinion, to that species of tetanus, which, prevailing in warm climates, and in warm seasons, appears to have its origin in disorder of the stomach and bowels. And ample evidence has established the success of the same treatment in the marasmus which attacks the young of both sexes, which is marked by loss of appetite, weakness, wasting of the body, and at length total prostra-

tion of strength; likewise in chlorosis, and in that hæmatemesis to which females are liable between eighteen and thirty years of age. In some of these diseases, the quantity of matter accumulated in the intestines is extremely great; the extent to which the exhibition of purgatives must be carried, and the length of time during which they must be continued, much exceed what would be calculated on from the usual administration of remedies of this class. The whole practice requires therefore both decision and perseverance.

Analogies from some of these diseases lead to a similar exhibition of cathartics in other fevers, particularly in the bilious remitting fever of warm climates, in measles, erysipelas, and small pox; likewise in scrofula, in dyspepsia, whether simple, or complicated with hysterical or hypochondriacal mania; in cramp of the stomach, or of the extremities; in palpitation of the heart, and in those cases of hydrophobia which are not the effect of specific contagion. With regard to several of these, experience has established the soundness of the analogy.

In choleric, and in ileus, the exhibition of cathartics is required, though there is considerable caution necessary in their application to avoid such irritation as would excite or increase inflammation. In dysentery, similar advantages are derived from them, and the same caution is requisite in their use.

Cathartics are farther employed with other intentions than merely to evacuate the intestinal canal. From the effusion of serous fluid which they occasion, by their sti-

mulant action on the exhalant vessels, they are supposed to produce a diminution of fluids with regard to the whole body. This is in some measure an abstraction of the usual exciting powers acting on the system, and hence purging constitutes a part of what is named the Antiphlogistic Regimen, and is employed in inflammatory affections. By a similar operation, it increases absorption. There exists a certain relation between the exhaling and absorbing powers, so that when the action of the one is increased, that of the other is augmented: the increased exhalation of serous fluid, therefore, into the intestines, which cathartics occasion, causes an increased absorption; and thus the different species of dropsy are often cured by purging. It is evident that those cathartics which stimulate the exhalant vessels are best calculated to fulfil this indication; hence saline purgatives are in general most serviceable in dropsy.

Partly, it is supposed, from the serous evacuation which cathartics occasion, and partly on the derivation which they make from the head, and partly, no doubt, by removing a source of irritation, cathartics are of utility in preventing and removing apoplexy; in all comatose affections, in mania, phrenitis, and the different species of headach.

Cathartics, especially the more powerful ones, require to be administered with caution even in diseases where they are indicated, by peculiar circumstances, particularly any tendency to inflammation or to extreme debility; also during pregnancy, immediately after delivery, during

the flow of the menses, and in those liable to hæmorrhoidal affections. The too frequent use of them induces wasting of the body, and sometimes renders the intestines morbidly irritable, so that purging is easily excited, while in other habits it renders them more torpid, and induces costiveness.

Some cautions are requisite with respect to the mode of administering cathartics. Many of them are apt to excite nausea or vomiting,—effects which are prevented by giving them at intervals in divided doses, or often by combining them with some aromatic. Such a combination also obviates the griping which they often occasion. The more acrid cathartics ought always to be given in divided doses; as in certain habits, even a small dose is liable to occasion unpleasant symptoms. In general also, these acrid cathartics ought to be given rather in combination, as the effect is obtained with more certainty. Colocynth, or scammony, or any other drastic purgative, may fail if given alone in such a dose as it is proper to venture on; but if smaller doses of two or three of them be mixed, their operation is more certain and easy. They irritate less when given in a liquid form: in that form too they act more speedily than when given in a solid state: hence, when we wish a cathartic to operate slowly, it is best given in the form of pill, and at bed time, as the state of diminished susceptibility in sleep retards the operation. In general, however, it is preferable to give the dose of a cathartic in the morning, as the operation of it is less troublesome to the patient. Dr Hamilton has

pointed out the common error in the exhibition of cathartics, that of their not being given to the requisite extent; and given the general rule in all morbid affections, of repeating, and, if necessary, enlarging the dose while the evacuations remain offensive, or of an unnatural appearance, without however carrying their administration so far as to produce purging, unless this be the indication which is designed to be fulfilled.

Cathartics may be arranged in some measure according to their power, placing those first which operate mildly, and which have usually been denominated Laxatives, and proceeding to those which are more powerful, and have other effects than merely evacuating the contents of the canal. The Saline Cathartics may be placed under the latter division, though their operation, as has been already explained, is somewhat peculiar. To the class may also be added those substances which act as cathartics under the form of Enema.

CATHARTICS.

A.—LAXATIVES.

MANNA.

CASSIA FISTULA.

TAMARINDUS INDICA.

RICINUS COMMUNIS.

SULPHUR.

MAGNESIA.

B.—PURGATIVES.

CASSIA SENNA.

RHEUM PALMATUM.

CONVOLVULUS JALAPA.

HELLEBORUS NIGER.

BRYONIA ALBA.

CUCUMIS COLOCYNTHIS.

MOMORDICA ELATERIUM.

RHAMNUS CATHARTICUS.

ALOE PERFOLIATA.

CONVOLVULUS SCAMMONIA.

STALAGMITIS CAMBOGIOIDES.

SUB-MURIAS HYDRARGYRI.

SULPHAS MAGNESIÆ.

SULPHAS SODÆ.

SULPHAS POTASSÆ.

SUPER-TARTRAS POTASSÆ.

TARTRAS POTASSÆ.

TARTRAS POTASSÆ ET SODÆ.

PHOSPHAS SODÆ.

MURIAS SODÆ.

TEREBINTHINA VENETA.

NICOTIANA TABACUM.

LAXATIVES.

MANNA. Manna. Fraxinus Ornus. Fraxinus Rotundifolia. Polygam. Diac. Ascyroid. Succus concretus. South of Europe.

THIS substance, though afforded by several vegetables, is usually obtained from different species of the ash-tree, particularly those mentioned above, which are cultivated in Sicily and Calabria. It is procured by spontaneous exudation, but more copiously by incisions made in the bark of the trunk. The juice, which exudes, soon becomes concrete. When it exudes slowly, the manna is more dry and white, and of a texture somewhat granulated, forming what is named Flake Manna. When the exudation is more copious, the juice is of a darker colour, and concretes into a soft unctuous-like mass, less pure than the other.

Manna has a sweet, though somewhat unpleasant taste, and possesses the general chemical properties of saccharine matter; it is entirely soluble in water and alcohol. The chemical difference between it and pure sugar is not very well established. When dissolved in alcohol, with the aid of heat, the solution on cooling deposits crystals apparently purely saccharine; and by concentration of the residual liquor, a mucilaginous extractive matter remains not crystallizable, having the peculiar taste of the manna.

Although sugar in its unrefined state proves laxative, manna is so in a greater degree.

The dose of manna, as a laxative, is from one to two ounces to an adult, but it scarcely operates with sufficient effect to admit of being employed alone. Though mild in its operation, it is apt too to produce flatulence and griping, and hence it is principally used in combination with other cathartics, particularly with senna, the bitter taste of which it covers. This combination is in common use as a purgative to children.

Offic. Prep.—Syrup. Mannæ. *Pharm. Dub.*

CASSIA FISTULA. Purging Cassia, or Cassia in pods.
Decand. Monog. Lomentaceæ. Fructus; Pulpa Fructus. Egypt; East and West Indies.

THE fruit of this tree is in pods, nearly an inch in diameter, and ten or twelve in length. The external membranous part is firm and hard, the pulp within is of a black colour, and has a sweet taste, with a slight degree of acidity. It is extracted by boiling the bruised pods in water, and evaporating the decoction. It is soluble in water. According to Vauquelin's analysis of it, it contains, besides the fibrous part, gluten, jelly, mucilage, and saccharine matter.

This pulp proves gently laxative in a dose of four or six drachms; in the large dose necessary to occasion purging, it is apt to induce nausea or griping, and even as a laxative it has no particular advantage. The sole consumption of it is in the composition of the officinal pre-

paration known by the name of Electuarium Sennæ. There is another electuary in the Pharmacopœias, to which, as being the principal ingredient, it gives its name, and in which it is combined with manna and pulp of tamarinds, but this is never used.

Offic. Prep.—Elect. Cass. Fist. *Ed. Lond. Dub.*

TAMARINDUS INDICA. Tamarind. *Monadelph. Triand. Lomentacea. Fructus conditus. East and West Indies, America, Arabia.*

THE pod of this tree includes several large hard seeds, with a brown viscid pulp, very acid. This pulp, mixed with the seeds and small fibres, and with a quantity of unrefined sugar added to preserve it, forms the Tamarinds of the shops. Vauquelin found it to contain, besides the sugar mixed with it, citric and malic acids, super-tartrate of potash, tartaric acid, jelly, mucilage, and fibrous matter.

The pulp of tamarinds, besides its virtues as an acid, proves laxative, when taken to the extent of an ounce, or an ounce and a half, but it is too weak to be employed alone. It is generally added to other cathartics, which are given in the form of infusion, with the view of promoting their operation, or of covering their taste. It is an ingredient in the Electuarium Sennæ, and there is an officinal infusion of it with senna, which affords a very pleasant purgative.

Offic. Prep.—Inf. Tam. Ind. cum Cass. Sen. *Ed.*

THERE are some other sweet fruits which have a laxative quality, as the Fig (*Ficus Carica*), and the Prune (*Prunus Domestica*). These are sometimes used in domestic practice, and they are also ingredients in the Electuary of Senna.

RICINUS COMMUNIS. Palma Christi. *Monac.* *Monadelph.* *Tricocea.* *Oleum*; *Semen.* *West Indies.*

THE seeds of the capsules of this plant are farinaceous, with a considerable quantity of unctuous matter intermixed. They afford, by expression or decoction, an oil which is used in medicine in this country under the name of Castor Oil. When obtained by decoction of the bruised seeds in water, it is purer and less acrimonious than when obtained by expression. It is of a yellowish colour, and has scarcely any peculiar taste or smell. It is the only example of an expressed oil having any medicinal activity.

As a laxative, castor oil acts mildly, and at the same time very effectually; it also operates in a shorter time than almost any other cathartic. Possessed of these advantages, it is a cathartic frequently employed; and is more peculiarly adapted for exhibition, where any degree of irritation is to be avoided. Its dose is one ounce. It is taken floating on peppermint-water, mixed with any spiritous liquor, or any purgative tincture, as that of senna; or diffused in water by the medium of gum, sugar, or the yolk of an egg.

FROM the Mineral Kingdom, two laxatives are derived, Sulphur and Magnesia.

SULPHUR is an inflammable substance, found in nature nearly pure, and likewise in combination with several of the metals. The greater part of the sulphur of commerce is the produce of volcanic countries. It is naturally mixed with earthy matter, from which it is freed by sublimation, forming the Sulphur Sublimatum, Flores Sulphuris, or Flowers of Sulphur. When melted and run into cylindrical molds, it forms Roll Sulphur, which is usually less pure.

Sulphur is of a light yellow colour; is insipid; has a faint smell, when rubbed or heated; is very fusible and volatile; and when heated in atmospheric air, burns with a blue flame, and the production of suffocating fumes. It is insoluble in water or alcohol, but is dissolved by oils, and combines with the alkalies, several of the earths, metals, and metallic oxides. It was, until lately, regarded as a simple substance; there is reason to believe, however, that it contains hydrogen, and that the pure inflammable base has not yet been obtained.

Sulphur, in a dose of 2 or 3 drachms, acts as a laxative, and so mildly, that it is often used in hæmorrhoidal affections, and in other cases where, though the operation of a purgative is indicated, any irritation would be injurious. It likewise passes off by the skin, and is administered internally, and is applied externally in psora.

In habitual dyspnœa and in chronic cætarh, advantage has been derived from it, probably partly from its action as a laxative, and partly as a diaphoretic. The solution of it in oil has been used in these cases, but this preparation is both acrid and extremely nauseous. Sulphur is always best given in the form of electuary. The purification of sulphur by washing is ordered in the Pharmacopœias, but is a process altogether unnecessary. Precipitated by an acid from its solution by an alkali or lime, it is obtained of a whiter colour than in its usual state, and this precipitated sulphur is used in preference to the sublimed sulphur in forming ointments. The combination of it with potash, Sulphurettum Potassæ, has also been introduced into the Pharmacopœias, principally with the view of affording a substance which has been supposed capable, by its chemical action, of counteracting the operation of metallic preparations where these have been taken in excess.

Offic. Prep.—Sulphur Lotum. Ol. Sulph. Ung. Sulph. Ph. Ed. Lond. Dub.—Sulph. Præcipit. Ph. Lond. Sulph. Potass. Ed. Dub.

MAGNESIA is a simple earth, not found pure in nature, but existing abundantly combined with certain acids, and from these saline combinations it is obtained by processes to be afterwards noticed. Either pure, or in the state of carbonate, it is used as an antacid and laxative, in a dose of a drachm or more. Its laxative effect is generally considered as owing to its forming with the acid in the stomach a saline combination, which, like its

other salts, is purgative, though, as it generally has this effect, it probably has itself a weak cathartic quality. From being insipid and mild, it is well adapted for exhibition to infants.

PURGATIVES.

CASSIA SENNA. Senna. *Decand. Monog. Lomentaceæ.*
Folia. Egypt, Arabia.

THE dried leaves of this plant are of a yellowish green colour; have a faint smell, and a bitter taste. Their active matter is extracted both by water and alcohol by infusion. By decoction with water, its activity is much impaired.

Senna is a purgative very frequently employed, having a considerable degree of activity, without being liable to be violent in its operation. It is usually given in the form of the watery infusion, 2 drachms being infused in 4 or 6 ounces of tepid water, generally with the addition of a few coriander seeds, to cover its flavour, and obviate griping. It is also frequently combined with manna, with tamarinds, or with super-tartrate of potash; and as its taste can be covered by sugar or manna, it is a purgative very generally given to children. There is an officinal tincture of it which operates as a purgative in the dose of an ounce; there are also officinal infusions of it; and it enters into the composition of several other preparations employed as cathartics.

Offic. Prep.—Elect. Cass. Senn. Extr. Cass. Senn. Inf. Tam. Ind. cum Cass. Sen. T. Cass. Senn. C. Ed.—Inf. Senn. Pulv. Senn. C. Lond.—Syrup. Senn. Lond. Dub.

RHEUM PALMATUM. Rhubarb. *Enneand. Trigyn. Ole-raceæ. Radix. Tartary.*

BESIDES the Rheum Palmatum, two other species, the Rheum Undulatum, and Rheum Compactum, are cultivated with the view of obtaining their roots, to be used in medicine; nor is any considerable difference, it is said, to be observed between the root obtained from any of them when it is properly dried and preserved. The best rhubarb is that named Russian or Turkey; it is in small pieces, with a large hole in the middle; of a lively yellow colour, with streaks of white; has a smell peculiar, and somewhat aromatic; and a bitter slightly styptic taste. Another kind is imported from the East Indies, or rather from China, in larger masses, more compact and hard, heavier, less friable than the other, and having less of an aromatic flavour. Rhubarb, cultivated in this country, has been prepared equal to either of the others, but in general it is inferior, probably from less care being bestowed on its cultivation and preparation.

The active principles of rhubarb are not very well ascertained. It is somewhat mucilaginous, and yields part of its powers to water by infusion. Alcohol likewise dissolves a considerable proportion of it; and diluted alcohol appears to be its most proper solvent, dissol-

ving all its active matter. It appears too to contain a portion of tannin, as it gives a deep colour with the salts of iron. It has the combination rather singular, of an astringent, with a cathartic power; and it does not appear, from any analysis of it, whether these reside in different proximate principles or not. The watery infusion is said to be more purgative than the spiritous, and by applying heat to the rhubarb in substance, its purgative quality is lessened, while its astringency remains. The Chinese rhubarb is supposed to be more astringent than the Turkey. Every kind of it contains a quantity of earthy matter, chiefly lime, combined with sulphuric and citric acids, forming the principal part of the white streaks. This is generally more abundant in the Turkey rhubarb than in the others.

The dose of rhubarb as a cathartic is one scruple or half a drachm. Along with its purgative operation, it exerts a moderately astringent power, and has hence been considered as peculiarly adapted for exhibition in diarrhœa, any acrid matter being evacuated before it acts as an astringent. From the conjunction of bitterness with these qualities, it is likewise often used in dyspepsia and hypochondriasis, to obviate costiveness. And it enters into a number of officinal preparations, in which it is either the principal medicine, or combined with aloes, bitters, or aromatics.

Offic. Prep.—Inf. Rhei P. T. Rhei P. *Ed. Lond. Dub.*
—Vin. Rhei. T. Rhei et Aloe. Tinct. Rhei et Gent. Pil.
Rhei. C. *Ed.*—Tinct. Rhei, C. Extr. Rhei, *Lond.*

CONVOLVULUS JALAPA. Jalap. *Pentand. Monogyn. Campanacea. Radix. Mexico.*

THE dried root of jalap is imported in thin transverse slices; it is solid, hard, and heavy; of a dark grey colour, and striated texture. It has little smell; its taste is bitter and subacid.

Jalap contains a resinous and a gummy matter, its purgative quality appearing to reside in the former, as it is extracted by alcohol, while its watery infusion is comparatively inert. Proof-spirit is its proper menstruum.

This root is an active purgative, producing full evacuation from the intestines; sometimes occasioning, however, nausea or griping. Its medium dose is half a drachm. Besides being given alone, it is very frequently used to quicken the action of other cathartics, of mild muriate of mercury for example; or it is combined with others, which are supposed to render it less stimulating, as with the super-tartrate of potash. It operates most mildly and effectually in substance, and is therefore seldom given under any form of preparation.

Offic. Prep.—T. Conv. Jal. *Ed. Lond. Dub.*—*Extr. Conv. Jalap. Ed. Dub.*—*Pulv. Jalap. C. Ed.*

HELLEBORUS NIGER. Melampodium. Black Hellebore. *Polyand. Polygn. Multisiliqua. Radix. Austria, Italy.*

THE root of this plant consists of short articulated fibres attached to one head, externally dark-coloured, internally white. Its taste is very acrid, but the acrimony

is much impaired by drying and by age. Its active power seems principally to reside in its resinous part. By decoction with water it yields half its weight of gummy matter, with some resin; and the extract obtained by inspissation of this, is milder than the root itself. Its distilled water, it is affirmed, is acrid, and even cathartic.

Black hellebore root is a very powerful cathartic, so violent, indeed, and at the same time uncertain in its operation, that it is scarcely ever used in substance: the watery extract of it, which is milder, has sometimes been employed. On its cathartic power probably depends any advantage that may be derived from its administration in mania and melancholia, in which diseases it was highly celebrated by the ancients. In dropsy it has been employed as a hydragogue cathartic, principally under the form of the spiritous extract. It was likewise strongly recommended by Mead as an emmenagogue, in the form of tincture, but with others has seldom been successful.

Offic. Prep.—T. Helleb. N. *Ed. Lond. Dub.*—*Extr. Helleb. Ed. Dub.*

BRYONIA ALBA. Bryony. *Monac. Syngenes. Cucurbitaceæ. Radix. Indigenous.*

THE root of this plant, when recent, is highly acrid; by drying it becomes milder. In a dose of 20 grains of the dried root, it acts as a strong cathartic, and generally also as a diuretic. It is, however, somewhat uncertain,

and liable to be violent in its operation, and is therefore little used.

CUCUMIS COLOCYNTHIS. Colocynth. *Monac. Syngenes. Cucurbitaceæ. Fructus pulpa. Syria.*

THE part of this plant used in medicine, is the dried spongy or medullary part of the fruit. It is white, soft and porous, and has the seeds, which are comparatively inert, mixed with it. Its taste is intensely bitter. Boiled in water, it gives out a large portion of mucilage, less active than the colocynth itself. Alcohol also dissolves only part of its active matter.

Colocynth is one of the most drastic purgatives, so much so that its operation is not easily regulated. Its dose is from 3 to 6 grains, but it is seldom that it is given by itself, being rather used to promote the operation of other cathartics. Combinations of it with jalap, aloes, or mild muriate of mercury, are thus given in obstinate constipation, in mania, and coma, and in these combinations it operates more mildly and more effectually than if given alone. Its infusion has been recommended as an anthelmintic.

Offic. Prep.—Pil. Aloes cum Colocynth. *Ed.*—Extr. Colocynth. *Lond.*—Extr. Colocynth. *Comp. Lond. Dub.*

MOMORDICA ELATERIUM. Wild Cucumber. *Monac. Syngenes. Cucurbitaceæ. Fecula Fructus. South of Europe.*

THE expressed juice of the fruit of this plant depo-

sites a fecula, which, when dried, has been known by the name of Elaterium. It is a very powerful cathartic, and from the violence of its operation has been ventured to be exhibited only in the most obstinate cases. Its dose is half a grain, repeated every hour, or every second hour, till it operate. As a hydragogue cathartic, it has sometimes been given in dropsy.

RHAMNUS CATHARTICUS. Buckthorn. *Pentand. Monogyn. Dumosa. Baccarum succus. Indigenous.*

THE berries of this vegetable are very succulent, and the juice they afford by expression has a cathartic power. Made into a syrup by boiling with sugar, it operates in a dose of an ounce. It is disagreeable, however, in its operation, being liable to occasion thirst and griping, and is seldom used.

Offic. Prep.—Syr. Rhamn. C. *Ed. Lond.*

ALOE. Aloe Socotorina. Aloe Barbadosis. Aloes Socotorine, and Barbadoes. Aloe Perfoliata, et Spicata. *Hexand. Monogyn. Liliaceæ. Succus spissatus. Africa, Asia, America.*

ALOES is a concrete resinous juice. Several varieties of it are met with in the shops, which differ in their purity, and likewise in their sensible qualities. The Socotorine, brought from the African island of Socotora, is considered as the purest. It is in small pieces of a reddish-brown colour. The Barbadoes aloes is in large masses, of a lighter colour, and having an odour much

stronger, and more unpleasant than the former. It is also named Hepatic Aloes. The Cabbaline is still more impure, more foetid, and is weaker in its power. There is still some uncertainty with regard to the species producing these varieties. The Aloe Perfoliata is that referred to by the Edinburgh College, as affording the varieties both of hepatic and socotorine aloes. The Dublin College refer to the Aloe Spicata, and it is said to be this species which is a native of the Cape of Good Hope, whence much of the aloes of the shops is imported. The London College give the same species as that which affords the Socotorine Aloes; while the Barbadoes Aloes, on the authority of Sibthorp, they consider as the produce of a species named Aloe Vulgaris. The Socotorine aloes is the inspissated expressed juice of the leaves of the plant. The Barbadoes Aloes is prepared by cutting the plant, and boiling it in water. The liquor is evaporated to the consistence of honey, and is run into large gourd shells, in which it becomes concrete.

The taste of all the kinds of aloes is intensely bitter; their odour disagreeable. They consist of extract and resinous matter, the former being in larger quantity; the latter, obtained by the action of alkohol, has little smell or taste. Diluted alkohol dissolves all the active matter of this concrete juice.

Aloes, as a cathartic, has some peculiarities. It is more slow in its operation than any other purgative; it merely evacuates the contents of the intestines, and no greater effect is obtained from a large dose than from

one comparatively moderate. These have been regarded as proofs, and perhaps justly, that its operation is principally on the larger intestines. Its medium dose is 10 grains. As a purgative, it is often employed to obviate habitual costiveness, and it is often combined with other cathartics to produce more complete evacuation. From the supposition of its stimulant operation being more particularly exerted on the rectum, it has been supposed to have a tendency to occasion hæmorrhoids,—an opinion for which there does not appear much foundation. On the supposition too of its stimulating effect being extended to the uterus, it has been regarded as a purgative to be avoided during pregnancy, and on the same hypothesis it has been supposed to exert an emmenagogue power.

Offic. Prep.—Pil. Aloes. Pil. Al. cum Assafœct. Pil. Aloes cum Colocynth. P. Aloes cum Myrrh. T. Aloes Æth. T. Aloes cum Myrrh. Vin. Aloes Succ. *Ed.*—Pil. Aloes cum Zingib. Pulv. Al. cum Canella. Pulv. Al. cum Guaiac. *Ph. Dub.*—Pulv. Aloes Comp. T. Aloes C. Decoct. Aloes. Extract Aloes. *Lond.*

CONVOLVULUS SCAMMONIA. Scammony. *Pentand. Monogyn. Campanaceæ. Gummi-resina. Syria.*

SCAMMONY is obtained by cutting the root of the plant, and inspissating the juice which exudes, by exposure to the sun and air. It is in small fragments, of a blackish grey colour, having little smell, and a bitter subacid taste. It is however variable in its qualities, and is often

adulterated by the intermixture of earthy matter. It is one of what are named Gum-resins, and consists of resin and gum in general nearly in equal proportions.

Scammony is one of the most drastic purgatives, and is employed chiefly where the less powerful substances of this class would fail. Its dose is from 5 to 10 grains, but it is generally combined in a smaller dose with other cathartics. It is also used as a hydragogue purgative in dropsy, combined usually with super-tartrate of potash.

Offic. Prep.—Pulv. Scamm. C. *Ed.*—Pulv. Scamm. C. Confect. Scamm. *Lond.*

GAMBOGIA. Gamboge. Stalagmitis Cambogioides. *Polyand. Monoec. Tricocca. Gummi-resina. India.*

This gum-resin is obtained by exudation, from incisions made in the branches and trunk of the tree. It is brittle, of a lively yellow colour, and resinous fracture, has a taste bitter and acrid. Water and alcohol partially dissolve it, and its solution in alcohol becomes turbid on the addition of water.

Gamboge is a very powerful cathartic, liable in large doses to excite vomiting, or to act with violence, and occasion profuse evacuations, with griping and tenesmus. Its medium dose is from 2 to 6 grains. It is seldom employed but in combination with some of the other powerful cathartics, in obstinate constipation. It is also used to expel the tape-worm, and as a powerful hydragogue cathartic in dropsy. In the latter application of it, it is frequently combined with super-tartrate of potash.

Offic. Prep.—Pil. Gambog. Comp. *Ph. Lond.*

MURIAS HYDRARGYRI. MITIS. CALOMELAS, Mild Muriate of Mercury. Calomel. Sub-muriate of Mercury of the London and Edinburgh Pharmacopœias.

THOUGH several of the preparations of mercury have a degree of cathartic power, this is most evident in the mild muriate; and this preparation is even in common use as a cathartic. It operates as such, when given alone in a dose of from 5 to 10 grains, but with more certainty and power when its operation is promoted by the addition of a little jalap or rhubarb. One valuable quality which it has, is that of promoting the operation of other cathartics, without exciting any additional irritation, or rendering them liable to act with violence: it is therefore, in more obstinate cases, combined with colocynth, scammony, or gamboge; and such a combination affords the safest of the powerful cathartics.

A DIVISION of Cathartics remains, intermediate in their operation between the Laxatives and Purgatives, more powerful than the one, less acrid and stimulating than the other. These are the Neutral Salts. They appear to act principally by stimulating the exhalant vessels on the inner surface of the intestines, so as to cause a larger portion of serous fluid to be poured out, which at once dilutes the contents of the canal, and by its operation, aided by the stimulus of the saline matter, accelerates the pe-

ristaltic motion. By the watery evacuation which they thus occasion from the general system, they are particularly adapted to those cases where inflammatory action or tendency to it exists.

SULPHAS MAGNESIÆ. Sulphate of Magnesia.

THIS salt, formerly known by the names of Bitter Purgine Salt, and Epsom Salt, is found in mineral waters, whence it has been extracted, but at present is principally obtained from the liquor remaining after the crystallization of muriate of soda from sea-water, which holds a quantity of it, and of muriate of magnesia dissolved. This is boiled down, and when exposed to sufficient cold affords a mass of slender needle like crystals. These are deliquescent from the presence of a little muriate of magnesia; the sulphate, when pure, forms large regular crystals, which are rather efflorescent. They are soluble in nearly an equal weight of water. Their taste is extremely bitter.

This salt is used as a purgative, in a dose of from one to two ounces, dissolved in water. Though its taste be bitter, it has been remarked that it remains better on the stomach than many other cathartics, especially when given in small repeated doses, and in a solution largely diluted. Exhibited in this manner, it has been particularly recommended in ileus and colica pictonum.

SULPHAS SODÆ, Sulphate of Soda, long known by the name of Glauber's Salt, is prepared by various processes on a large scale; but in that given in the pharmacopœias, it is obtained from the residuum of the decomposition of

muriate of soda, by sulphuric acid, in the preparation of muriatic acid. The saline mass is dissolved in water; any excess of acid is neutralized by the addition of lime, and the pure sulphate of soda is obtained by evaporation. Its crystals are six-sided prisms; they are efflorescent, soluble in three parts of cold, and in an equal part of boiling water. The taste of this salt is very bitter and nauseous. It is one of the saline purgatives in most common use. Its medium dose is an ounce and a half, dissolved in six or eight ounces of water.

SULPHAS POTASSÆ. Sulphate of Potash, formerly named Vitriolated Tartar, is prepared by the direct combination of its principles, or by neutralizing the excess of acid, in the residuum of the distillation of nitric acid from sulphuric acid and nitre. It forms in small irregular crystals, which require 17 parts of cold water for their solution. In a dose of 4 or 6 drachms, this salt acts as a purgative, but its comparatively sparing solubility prevents it from being much employed; in one of 2 or 3 drachms, it is given as an aperient, frequently in combination with rhubarb or other vegetable cathartics.

SUPER-TARTRAS POTASSÆ. Super-Tartrate of Potash, formerly Crystals or Cream of Tartar, (*Crystalli vel Cremor Tartari*).

THIS salt is gradually deposited from wine, in the progress of the slow fermentation which it suffers when kept, and is purified by repeated solutions and crystallizations. It consists of potash, with an excess of tartaric acid. Its taste is sour. It is in irregular crystals, which

are sparingly soluble in water, requiring about 60 parts of cold, or 30 of boiling water. This salt operates as a purgative in a dose of 4 or 6 drachms, and being free from any unpleasant taste, it is not unfrequently used, given generally under the form of electuary; the only inconvenience attending its operation, is its being liable to occasion flatulence; and if habitually used, it is liable from its acidity to injure the tone of the stomach. It appears, at the same time, to increase the action of the absorbent system; hence as a hydragogue and diuretic it is employed in dropsy, and is also the cathartic most effectual in removing obesity.

TARTRAS POTASSÆ. Tartrate of Potash. Tartarum Solubile. Soluble Tartar.

THIS salt, the neutral tartrate of potash, formerly named Soluble Tartar from its greater solubility, is prepared by saturating the excess of acid in the super-tartrate by the addition of potash. From its affinity to water, it is not easily crystallized with regularity; when obtained by evaporation, it is even somewhat deliquescent: its taste is bitter. It is a mild purgative, and at the same time operates effectually, given in a dose of six drachms or an ounce.

TARTRAS SODÆ ET POTASSÆ. Tartrate of Soda and Potash.

THIS salt, formerly known by the name of Rochelle Salt, is a triple one, being prepared by saturating the excess of acid in the super-tartrate of potash by soda. It

crystallizes in large and regular transparent rhomboidal prisms, which are permanent in the air, and soluble in about six parts of cold water. Its taste is less unpleasant than that of the greater number of the saline purgatives, and it operates in a similar manner. Its medium dose is an ounce, given usually dissolved in tepid water.

PHOSPHAS SODÆ. Phosphate of Soda.

To prepare this salt, bones are calcined to whiteness, so as to obtain the phosphate of lime which is their base. This is submitted to the action of sulphuric acid, which combines with part of the lime, and leaves a super-phosphate of lime, which is dissolved by water. To this solution, a solution of carbonate of soda is added, till there be a slight excess of alkali; the soda combines with the excess of phosphoric acid, and by evaporation the phosphate of soda is crystallized. Its crystals are rhomboidal prisms. Its taste is the least nauseous of all the saline purgatives, and its operation is equally mild and effectual. Hence it has been established in practice, and is useful as a cathartic where there is any tendency to nausea. One ounce of it is given, dissolved generally in tepid water, or soup made without salt.

BESIDES the preceding Cathartics, there are some which are employed only under the form of Enema.

MURIAS SODÆ. Muriate of Soda, Common Sea Salt.

THIS salt probably has some cathartic power, but its

strongly saline taste prevents it from being employed. It forms the active ingredient, however, of the common domestic enema; from half an ounce to an ounce of it being dissolved in a pound of tepid water, and a small quantity of expressed oil added.

TEREBINTHINA VENETA. Venice Turpentine. *Pinus Larix. Moncec. Monadelph. Conifera.*

THE resinous juice of this tree, the Larch, exudes from incisions made in its trunk. It is of the consistence of honey, has the peculiar smell of the turpentine, and a bitter acrid taste. It consists of resin and essential oil; sometimes it is employed as a cathartic under the form of enema, half an ounce of it being triturated with the yolk of an egg, and suspended in a sufficient quantity of water. As it has a considerable share of acrimony, it is employed only where those of milder operation fail.

NICOTIANA TABACUM. Tobacco. (p. 183.)

THE smoke of tobacco, introduced into the intestines, has sometimes succeeded in producing evacuation in colic and ileus, after other purgatives have failed, not improbably from its narcotic operation inducing relaxation of the muscular fibre. An infusion of 1 or 2 drachms of it in a pint of warm water is more convenient; but much caution is requisite in the use of either, as tobacco, from its narcotic power, is apt to induce extreme sickness and debility. It is only where other methods have been unsuccessful, that its administration can be proper.