

CHAP. XXIII.

OF ANTHELMINTICS.

ANTHELMINTICS are remedies which expel worms from the intestinal canal. They have been supposed to produce this effect by various modes of operation, principally mechanical.

Some, which are in coarse rough particles, as iron or tin filings, or consist of sharp spiculæ, as the down of the *dolichos pruriens*, are supposed, by mechanical action, to dislodge from the mucus of the intestines the worms which are evacuated.

Other substances ranked as anthelmintics seem to have no other property than bitterness. By this quality they have been supposed to prove noxious to these animals: it has also been imagined, that so far as they prove useful, they do so by restoring the tone of the digestive organs; the production of worms being supposed to proceed from debility of these organs, in consequence of which, either the food is not properly assimilated, or the secreted fluids poured into the intestines are not properly prepared.

Lastly, other remedies of this class apparently operate by their cathartic power. Those cathartics which discharge the mucus of the intestines, as gamboge, scammony, or calomel, are supposed more peculiarly to have this effect: and perhaps it is this sub-division of anthelmintics that have most efficacy. Some anthelmintics, it is observed by Dr Hamilton, "have been considered as specific poison to the insect,

and others are conceived to destroy it by mechanical triture. Most of them have had their partisans for the day, and have passed in succession through the ordeal of experience into oblivion. The utility of such anthelmintics as have been found to be most beneficial, has, in my opinion, been in proportion to the purgative powers which they possessed."

After a course of those anthelmintics, which are not directly cathartic, it is usual to give a full dose of a purgative, which is even repeated two or three times, and to this a considerable share of the effect, when worms are evacuated, is probably to be ascribed. Calomel, with jalap, gamboge, or scammony, is the cathartic usually employed.

ANTHELMINTICS.

HYDRARGYRUM.

FERRUM.

STANNUM.

OLEUM OLEÆ EUROPEÆ.

OLEUM TEREBINTHINÆ.

DOLICHOS PRURIENS.

ARTEMISIA SANTONICA.

SPIGELIA MARILANDICA.

POLYPODIUM FILIX MAS.

TANACETUM VULGARE.

GEOFFRÆA INERMIS.

CAMBOGIA GUTTA.

HYDRARGYRUM. Quicksilver. (Page 194.)

SEVERAL mercurial preparations have been employed on account of their anthelmintic power. The black sulphuret, ethiops mineral, as it was named, prepared by triturating sulphur and quicksilver in equal parts, has been given in the dose of a few grains to children, and of a scruple or half a drachm to adults. Mercury has been supposed to prove noxious to the class of vermes, and from this any efficacy belonging to this preparation has been inferred to arise. There is another mode in which it may operate. Sulphuretted hydrogen is deleterious to animals of this class, and the natural sulphurous waters impregnated with it, hence sometimes prove powerfully anthelmintic. The sulphuretted mercury may, by its chemical action on the fluids of the intestines, cause a production of sulphuretted hydrogen, whence may arise its anthelmintic power. Of the other mercurials, calomel has the advantage, besides any direct anthelmintic power it may exert, of exciting the action of the intestines, and evacuating the intestinal mucus. It is given alone in a dose of one or two grains to children, and of from 5 to 10 grains to an adult; or in smaller doses combined with jalap, scammony, or gamboge. It is also generally the basis of the cathartic which is usually administered after a course of any other anthelmintic remedy.

FERRUM. Iron. (Page 209.)

THE filings of this metal have been given as an anthelmintic, in a dose of one or two drachms; and the sub-carbonate or rust of iron, was highly recommended by Rush as a remedy against the tape-worm, when taken to the extent of three or four drachms.

STANNUM. Tin.

TIN is reduced to a powder, consisting of small rounded particles, by heating it nearly to its melting point, and agitating it briskly. Either this powder, or what has been recommended in preference, the metal, in filings, is used as an anthelmintic, in a dose of one or two drachms, or even in a much larger quantity. It is taken repeatedly in the morning, and a cathartic is afterwards administered. Its effect, so far as it operates, has been supposed to be mechanical, dislodging the worm from the mucus of the intestines by the grittiness of its particles. It is not improbable, too, that it may act by generating hydrogen gas in the intestinal canal, which proves noxious to the animal; and its efficacy has been said to be increased by combination with sulphur, by which sulphuretted hydrogen gas will be evolved. The sulphuretted oxide of tin, *aurum musivum*, was once in use as an anthelmintic, and there is an empirical preparation, Blane's powder, celebrated as an anthelmintic, of which it is said to be the basis.

OLEUM OLEÆ EUROPÆÆ. Olive Oil. Oleum Olivarum.
Diand. Monogyn. Sepiariæ. South of Europe.

OLIVE Oil, or any other expressed oil, taken in the morning to the extent of half a pound, or as much as the stomach can bear, has been said to prove anthelmintic, but in the state of diffusion and mixture in which it must act on worms in the intestines, it can scarcely be expected to have any certain power.

OLEUM PINI LARICIS. Oleum Terebinthinæ. Oil of Turpentine. (Page 387.)

THIS essential oil has lately been introduced as an anthelmintic of great power, in expelling the tape-worm when

iven in large doses,—doses indeed so large, compared with those in which it has usually been given, that the practice would appear hazardous, though it is affirmed to be perfectly safe. The practice was first mentioned by Dr Fenwick. From half an ounce to an ounce, an ounce and an half, or even two ounces, have been taken at once, and in some cases this has been repeated in six or eight hours; these quantities generally produce purging, and frequently sickness. The worm is evacuated, and is usually lifeless on its expulsion; while, when evacuated by other methods, it generally retains signs of life. The turpentine therefore evidently operates by its deleterious power. Though these large doses have been taken without any injurious consequence, in some cases they have occasioned severe nausea, tenesmus, and strangury, while similar quantities, as that of a tea-spoonful repeated every three hours for three or four times, have proved successful. In other cases again, these have been unsuccessful, and it has been necessary to employ the larger doses frequently repeated. Its operation on the bowels as a cathartic in the larger quantity, seems to prevent its absorption; and therefore obviates its action on the urinary organs; and it has been stated in conformity to this, that this action giving rise to strangury, is more liable to happen from small than from large doses. Analogy leads to the employment of the remedy for the expulsion of the other worms which lodge in the intestinal canal, and in one or two cases the lumbrici have been expelled by it. It has also been employed under the form of enema, half an ounce being diffused in starch, mucilage, or in water by the medium of the yolk of an egg. The nauseating effect on the stomach is thus avoided, but this mode of application is frequently productive of considerable pain.

DOLICHOS FRURIENS. Cowhage. *Diadelph. Decand. Papilionacea.* *Pubes leguminis rigida.* *East and West Indies.*

THE down which covers the outer surface of the pods of this plant, consists of spiculæ, so sharp, that if incautiously handled, they penetrate the cuticle, and occasion very severe itching and inflammation. It is this down which is used as an anthelmintic. It is made into an electuary, with syrup or molasses, of which two tea-spoonfuls are given to an adult, and repeated two or three times, a strong cathartic being afterwards exhibited. Its action is entirely mechanical, the spiculæ producing irritation in the body of the animal, causing its motion, and perhaps also exciting the action of the intestines. In the West India islands it is the common anthelmintic, and is described as being given with much advantage, more so than when used in this country, a difference which has been explained from the state of the mucous secretion in the intestinal canal, which appears to be more abundant in warm climates; and hence more powerful remedies are required to produce an anthelmintic effect. The electuary ought to be prepared only when it is to be used.

ARTEMISIA SANTONICA. Wormseed. *Syngen. Polygam. superfl. Compositæ. Semen. Persia.*

THE seeds of this plant have a faint disagreeable smell, and a very bitter taste. They are in common use as an anthelmintic, and probably operate merely as a bitter; the dose is half a drachm, or a drachm of the powder to an adult. This, after being continued for some time, is followed by a dose of a strong cathartic.

SPIGELIA MARILANDICA. Indian Pink. *Pentand. Monogyn. Stellatæ. Radix. North America.*

THIS plant is a native of Virginia and Maryland. The slender stalks of its root have a bitter taste and are used in medicine, on the supposition of their anthelmintic power; in a large dose they prove purgative, and also sometimes narcotic. They are usually administered in the form of the watery infusion; in the quantity of half a drachm, or even to the extent of two or three drachms to an adult. Its operation as a narcotic has been said to occur from its administration; and to prevent this, it has been recommended to be given rather in large doses, so as to obtain its cathartic operation, by which its narcotic power is obviated. In its dried state, however, in which it is employed in this country, no alarming symptom appears to follow from its administration.

POLYPODIUM FILIX MAS. Aspidium Filix Mas. Male Fern. *Cryptogamia. Filices. Radix. Indigenus.*

The root of this plant was once highly celebrated as a remedy against the tape worm; two or three drachms of the powder of it being taken in the morning, and a strong cathartic of jalap or gamboge given soon after it. The efficacy of the prescription probably depended entirely on the cathartic.

TANACETUM VULGARE. Tansy. *Syngen. Polyg. superf. Compositæ. Folia et flores. Indigenus.*

THE leaves and flowers of this plant have a strong bitter taste. They have been recommended as anthelmintic, and especially as capable of expelling the lumbrici, and are sometimes used as a popular remedy. The dose, in powder, is from one scruple to one drachm.

GEOFFRÆA INERMIS. Cabbage Tree. *Diadelph. Decand.*
Papilionac. Cortex. Jamaica.

THE bark of this tree is flat and thin, of a brownish colour; it has an unpleasant smell, with a sweetish taste. It is used as an anthelmintic, and has been considered as one of considerable power, especially in expelling the lumbrici. It is usually given under the form of decoction, an ounce being boiled in two pounds of water, to one pound, and from one to two ounces of this being given as a dose to an adult. It usually operates as a cathartic, and in an over-dose is liable to occasion sickness and vomiting. The same symptoms are said to be induced by the incautious drinking of cold water during its operation. When they occur from either cause, they are relieved by a dose of castor oil. Others, however, have not observed these effects from it, even when it has operated powerfully as an anthelmintic, and have hence concluded, that it acts as a specific poison to worms.

Offic. Prep.—Decoct. Geoffr. Inerm. *Ed.*

CAMBOGIA. Gamboge. (Page 350.)

GAMBOGE has been celebrated as a remedy against the tape-worm, and by its powerful cathartic operation is sometimes successful in expelling it. It is given in a dose from 5 to 20 grains alone, or combined with two parts of super-tartrate of potash. It is frequently also given as a cathartic after other anthelmintics.