

CHAP. XXI.

OF DEMULCENTS.

DEMULCENTS are defined, "Medicines suited to obviate and prevent the action of acrid and stimulant matters; and that, not by correcting or changing their acrimony, but by involving it in a mild and viscid matter, which prevents it from acting upon the sensible parts of the body," or by covering the surface to which they may be applied. Their action has been supposed to be exemplified in catarrh, where the irritation at the top of the trachea, occasioning coughing, is removed by mucilaginous substances; or in gonorrhœa, where the sense of heat and pain from the application of the stimulus of urine to the inflamed surface of the urethra is prevented by similar means.

Where these substances are directly applied to the part, it may be understood how this operation is obtained from them. But where they are received by the medium of the stomach into the circulating system, it has been supposed that they can have no such effect. They must be changed by the process of digestion, and lose that viscosity by which only they operate, so that they cannot afterwards be separated by any secretion in their original form. Hence their utility in gonorrhœa and similar affections has been altogether denied.

It is not clear, however, that such a conclusion is just. It is sufficiently certain, that many substances, which undergo the process of digestion, are afterwards separated in their

entire state from the blood, by particular secreting organs. There is no gland which has this power more particularly than the kidneys; substances received into the stomach and digested, afterwards passing off in the urine with all their peculiar properties. Saccharine matter for example, there is reason to believe, can be separated in this manner; and it is equally probable, that mucilaginous or oily substances, which form the principal demulcents, are capable of such a separation. There can be no doubt, however, but that a great share of the relief demulcents afford in irritation, or inflammation of the urinary passages, is owing to the large quantity of water in which they are diffused, by which the urine is diluted, and rendered less stimulating. Perhaps the relief is to be ascribed solely to this dilution; since no alteration is perceived in the quality of the urine, from the use of these substances. And, in general, demulcents may be considered as substances less stimulating than the fluids usually applied to the parts that are in a state of irritation.

The diseases in which demulcents are used, are principally catarrh, diarrhoea, dysentery, calculus, and gonorrhoea. They are evidently not medicines of any great power; they are only calculated to alleviate symptoms, and may be freely used in as large quantities as the stomach will receive them.

Demulcents may be arranged under the two divisions of Mucilages, and Expressed Oils; to which may be added some substances of a similar nature.

 DEMULCENTS.

MIMOSA NILOTICA.

ASTRAGALUS TRAGACANTHA.

LINUM USITATISSIMUM.

ALTHÆA OFFICINALIS.

MALVA SYLVESTRIS.

GLYCYRRHIZA GLABRA.

SMILAX SARSAPARILLA.

CYCAS CIRCINALIS.

ORCHIS MASCULA.

MARANTA ARUNDINACEA.

TRITICUM HYBERNUM.

LICHEN ISLANDICUS.

CORNU CERVI.

ICHTHYOCOLLA.

AMYGDALUS COMMUNIS.

OLEA EUROPÆA.

SEVUM CETI.

CERA.

ARABICUM GUMMI. Gum Arabic. *Mimosa Nilotica*. *Polygam.* *Monœc.* *Lomentaceæ.* (*Acacia Vera*, *Ph. Lond.*) *Africa.*

GUM is a proximate vegetable principle, which is obtained by exudation, more or less pure, from a number of plants. The Gum Arabic of commerce is not exclusively the produce of one vegetable: that which is most pure, and used to be imported from Egypt, is from a species of mimosa. The London College admit, on the authority of Wildenow, a different genus, *Acacia*, as substituted for that of *Mimosa*; they refer, therefore, to the species producing this gum by the name of *Acacia Vera*, and name the gum itself *Gummi Acaciæ*, while the Edinburgh College name it *Gummi Mimosæ Niloticæ*. The trivial name, *Gummi Arabicum*, is retained perhaps with propriety by the Dublin College. The greater part of the gum arabic of commerce, it appears, is imported from Barbary, being the produce of Morocco, and principally of the mountains of Atlas. It is an exudation in the form of a viscid pellucid juice, from the bark of the trunk and branches of the tree, which hardens by exposure to the air and sun. The purest gum of the shops is in small irregular pieces, white or yellowish, semi-pellucid, without taste or smell: there are other varieties coarser, of a yellow or red colour; these are sometimes named *Gum Senegal*, and appear to be of different origin. All of them have the properties of gum; are insoluble in alcohol or oils, and soluble in water, forming a viscid solution named *Mucilage*.

Gum Arabic is in common use as a demulcent. In catarrh it is allowed to dissolve slowly in the mouth, and its

mucilage is the basis of the mixtures usually employed to allay coughing. Sometimes, too, it is employed in tenesmus, strangury, and *ardor urinæ*. In Pharmacy, mucilage of gum arabic is employed for a variety of purposes. It serves to suspend heavy powders in waters; to diffuse oils, balsams, and resins in water, and give tenacity to substances made into pills.

Offic. Prep.—Emuls. Gummi Mimosæ Nil: *Ed. Dub.*—Muc. Gum. Mim. Nil. *Ed. Lond. Dub.*—Troch. Gum. *Ed.*

ASTRAGALUS TRAGACANTHA. (*Astragalus Verus*, *Ph. Lond.*) *Tragacanth. Diadelph. Decand. Papilionaceæ. Gummi. South of Europe, Asia.*

TRAGACANTH is a gum obtained by exudation. The plant which was supposed to afford it, was described by Linnæus as a species under the name of *Astragalus Tragacantha*. According to Olivier, it is a different species, which he describes under the name of *Astragalus Verus*; and this is admitted by the London College. *Tragacanth* is the produce of Persia and of Asia Minor; it is in small wrinkled pieces, semi-transparent and brittle, and has neither taste nor smell. It is regarded as a gum, yet it differs from the other pure gums in not being perfectly soluble in cold water: it is softened and diffused, but remains flocculent and turbid. When heat is applied, it communicates to the water a great degree of viscosity, but still the solution remains turbid; it appears, therefore, to be intermediate between gum and fecula. It is greatly superior to all the gums, in giving viscosity to water; its power in this respect being to that of gum Arabic as 1 to 24.

Tragacanth has virtues similar to gum Arabic. It is less

employed, except in some pharmaceutical processes, in which, from its greater viscidty, it is preferred, as in making of troches.

Offic. Prep.—Mucil. Astrag. Trag. *Ed. Dub.*—Pulv. Trag. *C. Lond.*

LINUM USITATISSIMUM. Flax. *Pentand. Pentagyn.*
Gruinales. Semen. Indigenous.

THE seeds of this plant afford a strong mucilage by infusion or decoction in water; by expression they afford a quantity of oil. This being inferior in purity to the olive or almond oil, is little used in medicine. But the mucilage having no unpleasant taste or smell, the infusion is frequently used as a demulcent in catarrh and gonorrhœa, being rendered more grateful by the addition of a little sugar and lemon juice. The decoction, containing a portion of the oil diffused in the mucilage, is less grateful.

Offic. Prep.—Infus. Lini. *Lond.*

ALTHÆA OFFICINALIS. Althæa. Marsh-mallow. *Monadelph. Polyand. Columniferæ. Radix. Indigenous.*

THIS indigenous plant grows, as the name implies, in marshy situations. All the parts of it yield a mucilage by infusion or decoction in water: the root does so most abundantly, and freed from the outer bark, is kept in the shops. It is white, inodorous, and insipid. Its mucilage is similar to that from lintseed, and is used for the same purposes. It is even preferable, as being more pure.

Offic. Prep.—Decoct. Alth. *Ed.*—Syr. Alth. *Ed. Lond.*

MALVA SYLVESTRIS. Common Mallow. *Monadelph. Polyand. Columniferæ. Folia. Indigenous.*

THE leaves of this plant afford a mucilage by infusion in water, which is weaker, however, than that from lintseed or althæa, and is therefore little used. The leaves have also been used for the purpose of fomentation, and their decoction affords an emollient enema.

Offic. Prep.—Decoct. Malv. Comp. *Lond.*

GLYCYRRHIZA GLABRA. Liquorice. *Diadelph. Decand. Papilionac. Radix. South of Europe.*

THE root of this plant, which is long, slender, and flexible, covered with a thin epidermis, has a sweet agreeable taste, with no flavour. This sweetness is extracted by water by infusion or decoction; and by evaporation a dark-coloured extract of the same sweet taste is obtained, consisting principally of saccharine and mucilaginous matter. Alcohol likewise extracts the sweetness of liquorice, with less of the mucilage.

Liquorice-root is employed as a demulcent, and on account of its sweet taste is frequently added to infusions of lintseed or althæa. Its watery extract is also in common use as a demulcent in catarrh, being allowed to dissolve slowly in the mouth, to allay the irritation which produces coughing.

Offic. Prep.—Extr. Glycyrrh. Gl. *Ed. Dub.*—Troch. Glycyrrh. Troch. Glycyrrh. cum Opio, *Ed.*

SMILAX SARSAPARILLA. Sarsaparilla. *Diœcia Hexand. Sarmenlaceæ. Radix. South America.*

THIS root, which is imported from the Spanish West In-

dies, is in long slender twigs, which for pharmaceutic preparation are split and cut into small pieces. It is internally white, and covered with a brownish bark; has scarcely any smell; its taste is mucilaginous, and slightly bitter. Water extracts its bitterness; by beating it with water, a portion of fecula is separated, white and insipid, in which the virtues of the root appear to reside.

Sarsaparilla produces no sensible effect on the system, and it can scarcely be regarded in any other light than as a demulcent. It has, however, been considered as a specific in the treatment of some venereal affections, particularly those of the bones or periosteum, and as a restorative in that state of debility which is the consequence of the disease protracted, or of the mercurial irritation. Without allowing to it any specific power, it appears in such cases to be sometimes productive of benefit, probably from its mild demulcent and nutritious quality, and partly perhaps from the suspension of the use of mercury during its administration. It has also been recommended in extensive ulceration, in cutaneous affections, and in chronic rheumatism. It is always given in the form of decoction, and is very frequently joined with guaiac and mezereon, the pungency of which it covers.

Offic. Prep.—Dec. Sarsap. *Ed. Lond. Dub.*—Dec. Sarsap. Comp. *Lond. Dub.*—Extr. Sarsaparill. *Lond.*

CYCAS CIRCINALIS. Sago. *Cryptogamia. Filices. East Indies.*

SAGO is a fecula obtained from the pith or medullary part of the branches of the plant, by maceration in water. It is in small grains of a brownish colour, without taste or smell. Boiled in milk or water, it dissolves entirely; and this with sugar, and the addition frequently of a little wine, forms a

nutritious jelly, prescribed in diarrhœa as a demulcent, and in convalescence as a nutritious article of diet, easy of digestion.

ORCHIS MASCULA. Salop. *Gynand.* *Diand.* *Orchideæ.*
Indigenous.

THE root of this plant, by maceration in water and beating, affords the fecula known by the name of Salop. Its qualities and virtues are similar to those of Sago.

MARANTA ARUNDINACEA. Indian Arrow. *Monand.* *Monogyn.* *Scitamineæ.* *South America.*

THIS plant is abundantly cultivated in several of the West India islands, for the preparation of the fecula which is extracted from its root. The root, freed from its cuticle, is grated down in water, which is poured off repeatedly, allowing the fecula to subside: when it appears to be perfectly purified, the remaining water is strained off on a linen cloth, and the fecula is dried. It forms a powder in fine grains, of a brilliant whiteness. It is used as a demulcent in diarrhœa and dysentery, and as a nutritious article of diet for convalescents. A jelly is prepared by boiling with water or milk, and it is under this form that it is taken.

TRITICUM HYBERNUM. Wheat. *Triand.* *Digyn.* *Gramina.* *Fecula seminum.* *Amylum.*

STARCH, the fecula of wheat, obtained by beating the grains previously soaked in water, forms a gelatinous solution when boiled with water, which is used as a demulcent. This, Starch Mucilage as it is named, is sometimes given as

an enema in tenesmus, and is the common vehicle for giving opium under that form. Starch powder is sometimes used to facilitate friction.

Offic. Prep.—Mucilag. Amyli, *Ed. Lond. Dub.*

LICHEN ISLANDICUS. Iceland Liverwort. *Cryptogamia*
Algæ. Iceland.

THE different lichens contain a fecula, which is extracted by boiling in water. The lichen islandicus, so named as being abundant in Iceland, though it is a native also of other countries of the North of Europe, consists principally of this, with a portion of extractive matter, having a degree of bitterness. This bitterness is removed by maceration in cold water, and then by decoction with water a gelatinous solution is obtained. This is used as an article of diet in the countries of which this lichen is a native; and it has been introduced into medical practice as a demulcent, and a nutritious substance easy of digestion: it has from these qualities been used with some advantage in hæmoptysis and phthisis; and from its supposed efficacy, the decoction has received a place in the London Pharmacopœia.

Offic. Prep.—Decoct. Lichenis, *Lond. Dub.*

CORNU CERVI RASURA. Hartshorn Shavings. *Cervus Elaphus. Cornu. Mammalia. Pecora.*

HORN consists chiefly of indurated albumen; the horns of the deer, however, it is singular, are similar to bone in composition, and contain a considerable quantity of gelatin, along with phosphate of lime; they have therefore been received into the *Materia Medica*. They are freed from their outer rough covering, and the internal white part is rasped down

for use. The shavings afford, by decoction in water, a transparent, colourless, and inodorous jelly, which, rendered grateful by sugar and a little wine, is used in diarrhœa and dysentery as a demulcent, and in convalescence as a light nutritious article of diet.

ICHTHYOCOLLA. Isinglass. *Acipenser Sturio. Pisces.*
Chondropterygii.

ISINGLASS is obtained from the sound and other parts of the sturgeon, as well as several other kinds of fish caught in the Volga, the Oby, and other rivers, which flow into the Caspian or the Northern Ocean. The sound being well cleansed, is freed from the thin membrane which covers it, is dried by exposure to the air, and is rolled up in a twisted form. It is of a fibrous texture, insipid and inodorous. It is nearly pure gelatin, is therefore almost entirely soluble in water by boiling, and forms a gelatinous solution, which has sometimes been employed as a demulcent; and when rendered grateful by a little sugar and lemon juice, as a nutritive jelly, easy of digestion.

AMYGDALUS COMMUNIS. *Icosandria. Monog. Pomacea.*
Fructus; Nucleus; Ol. Express. Syria, Barbary.

THE kernel of the fruit of the almond is farinaceous, with a portion of expressed oil. There are two varieties of it, the one sweet, the other bitter, and these are the produce of mere varieties of the same species, their production being dependent, it is said, on culture. The expressed oil afforded by both is the same; the principal part of each, too, appears to be fecula; but with this, in the sweet almond, there is a portion of saccharine matter; the nature of the principle

in which the bitterness of the other resides, is not well ascertained: it contains, however, a portion of prussic acid, on which its odour depends, and which appears to communicate to it some degree of narcotic power. The oil is obtained by expression from the seeds, or by decoction of them in water. It is very similar to the olive oil, but purer, and more free from any rancidity. In common with expressed oils, it has the properties of a demulcent; and diffused in water by the medium of mucilage, or a few drops of an alkaline solution, it is given in catarrh.

There is another mode in which this oil is given as a demulcent, more grateful, that of emulsion. The sweet almonds, the external rind being removed by immersion in warm water, are triturated with water; the oil is diffused in the water by the medium of the mucilage and fecula of the almond, and a milky-like liquor is formed, which is used as a pleasant demulcent and diluent, particularly to obviate strangury from the application of a blister.

Offic. Prep.—Emuls. Amygd. *Ed. Lond. Dub.*—Confect, Amygd. *Lond.*

OLEA EUROPÆA. Olive Oil. Oleum Olivarum. *Diand. Monogyn. Sepiariz. Oleum Expressum. South of Europe.*

THE oil obtained from the fruit of the olive by expression, is of a light yellowish or greenish colour, without either taste or smell, and is possessed of all the general properties of expressed oil. It is the oil of this class which is most commonly used in medicine. It is employed as a demulcent in catarrh, and some other affections, diffused in water by the medium of mucilage, or by a very small quantity of one of the alkalis, and is thus taken in as large quantities as the

stomach can bear; it may be doubted, however, whether with any advantage. It is employed to involve acrid substances which may have been introduced into the stomach. It is also given as an anthelmintic. Externally it is used as an emollient, applied by friction, or forming the basis of liniments and ointments.

SEVUM CETI. *Spermaceti.* *Physeter Macrocephalus.*
Mammalia. Cetacea.

THIS fatty matter is obtained from the head of the particular species of whale above stated. The cavity of the head contains a large quantity of an oily fluid, from which, on standing, a concrete substance separates. This, freed from the oil by expression, and purified by melting and boiling with a weak alkaline solution, is the common spermaceti. It is in masses of a flaky texture, unctuous and friable; white, with some degree of lustre; and has neither taste nor smell. It is fusible and inflammable, and its chemical properties and relations are the same as those of the expressed oils and fats, except that it does not easily unite with the alkalis, and that it is soluble to a certain extent in alcohol and ether. Its medicinal virtues are those of a mild demulcent, and as such it is given in catarrh and gonorrhœa, mixed with sugar, or sometimes diffused in water by the medium of the yolk of an egg. It enters as an unctuous substance into the composition of ointments.

Offic. Prep.—Cerat. Cetacei, Unguent. Cetacea, *Lond.*

CERA. Wax.—THIS is a concrete substance of a particular nature, which, applied by the bee to the construction of the cells in which the honey is deposited, was supposed to be collected by that insect from the antheræ of vegetables.

The experiments of Huber appear, however, to have proved, that it can be formed by the bee, from changes produced on its saccharine food. Still it is to be regarded as a vegetable product. It forms a covering on the leaves, fruit, and flowers of many plants, and some, as the *Myrica Cerifera*, afford a substance perfectly analogous in large quantity. Wax, in its chemical properties, resembles most nearly the expressed oils, differing from them principally in solidity, and in combining less readily with the alkalis. When merely melted from the comb, it retains a portion of colouring matter, and forms yellow wax; it has also an agreeable odour. It may be deprived of both by bleaching,—the wax being melted and cast into thin cakes, which are exposed to the action of light, air, and humidity. It then forms white wax, which is harder and more brittle than the yellow, and rather less fusible.

Wax has been used as a demulcent in dysentery, being diffused in water by means of mucilage of gum Arabic, the wax being first melted with a little oil, to facilitate its trituration; but it has no particular quality to recommend it. It is used in the composition of ointments and plasters, communicating to them consistence and tenacity.

Offic. Prep.—*Emp. Cerae, Ed. Lond.*