

ticularly that variety of it named sciatica, they have been found very useful. On the same principle caries in the bones and joints, or a disposition to it, is often cured by the repeated application of blisters. "Under their application the enlargements obviously subside; the crepitation between the bones, the consequence of the abrasion of the cartilages, ceases to be felt when the blister begins to operate, the use of the joint is effectually recovered, and ankylosis prevented."¹ A succession of blisters, also, to the vicinity of an inflamed organ is more beneficial than a protracted discharge from one; and a second blister often relieves after the first has failed. Blisters are contra-indicated in diseases of great debility, where there is a tendency to mortification; as in the low stages of petechial fevers, cynanche maligna, confluent small-pox, and malignant measles; and in dropsy, in which they are apt to occasion a very painful, dangerous erysipelas, and gangrene. Peculiar idiosyncrasies forbid their use in some persons; as they irritate, heat, produce thirst, pain, tremors, and sometimes convulsions. In those of irritable temperaments their application is often attended with strangury and bloody urine; and this effect is much increased if the blister be applied over an abraded surface, as a newly shaved head, or if the blister plaster be allowed to remain too long on after the blister has risen. To prevent strangury from the application of blisters, camphor has been erroneously regarded as a specific. It is more effectually prevented and relieved by copious dilution with milk, and mucilaginous fluids; and by fomentations of warm milk and water to the blistered part after the removal of the plaster: and much inconvenience of this nature may be prevented by interposing between the vesicatory and the skin, a piece of gauze, wetted with vinegar, and applied smooth, and close over the plaster.

The dose of the flies, when given internally is gr. j to grs. iij.

Officinal preparations. *Tinctura Lyttæ*. L. *Emplastrum Lyttæ*. L. *Emplastrum Cantharidis vesicatoriæ*. E. *Ceratum Lyttæ*. L. *Unguentum infusi Cantharidis vesicatoriæ*. E. *Unguentum Cantharidis*. D. *Unguentum Pulveris Cantharidis vesicatoria*. E.

MAGNESIÆ SULPHAS. Lond. **SULPHAS MAGNESIÆ.** Edin. **SULPHAS MAGNESIÆ**; olim *Sal catharticum amarum*. Dub. **Sulphate of Magnesia.** Bitter purging Salt.

Syn. Sulphate de Magnesie (F.) Schwefelsaure Magnesia (G.) Sale amaro; Ossisolfato di Magnesia (I.)

This salt is found native in a pure state²; but it is more

¹ Ford on Diseases of the Hip-joint, 53.

² In the mercury mines of Idria it is found crystallized, and named by the Germans *Haarsalz*. According to Klaproth, it contains 1 per cent. of oxide of iron. *Analyt. Ess.* 80.

commonly combined with gypsum¹; and in solution in sea-water, and several mineral springs. It was first artificially obtained in England in 1675, from the evaporation of the water of the Epsom spring: whence it was named Epsom salt: and in 1700 it was made in considerable quantity from two springs at Shooter's-hill, in Kent²; but the discovery of it in bittern, or the residual brine after the crystallization of sea-salt, soon opened a more copious source from which it might be obtained at all times; and for many years past, all the sulphate of magnesia used in this country has been manufactured from bittern. This substance consists chiefly of muriate of magnesia, muriate of lime, some common salt, and a small portion of sulphate of lime; and therefore it is probable, that the sulphate of magnesia is obtained by decomposing the muriate by means of sulphate of iron, or sulphuric acid in some form, although some affirm that the bittern is only boiled down to a high point of concentration; when the sulphate of magnesia forms, and is purified by a second solution and crystallization. The sulphate found in the shops generally contains some muriate of magnesia, which renders it deliquescent; and consequently it requires to be preserved in close covered jars. It is often adulterated with Glauber salt, which is made to resemble Epsom salt, by stirring it briskly, when it is about to crystalise. It may be detected, by precipitating the magnesia by pure ammonia, aiding by heat; filtering, and evaporating the filtered fluid to dryness, by a heat sufficient to volatilize the sulphate of ammonia. If it contained glauber salt, the soda will remain fixed. Muriate of lime is detected by the oxalic acid.

Qualities.—Sulphate of magnesia is inodorous, and has a very bitter nauseous saline taste. It is usually in small needle-like crystals, but the form of its regular crystal is a quadrangular prism, acuminated by four planes. When pure it effloresces; and is soluble in its own weight of water at 60°, increasing the volume of the fluid rather more than 4-tenths, or a solution of 3j of sulphate of magnesia in f3j of water, measures eleven fluid drachms and a quarter. Heat expels its water of crystallization; and the mass is melted, but not decomposed; it loses merely its water of crystallization, and a minute portion of its acid. According to Bergman, 100 parts consist of 29.35 of sulphuric acid, 17 of magnesia, and 53.65 of water of crystallization.³ Its specific gravity is 1.66. It is de-

¹ In the gypsum quarries of Piedmont; and, as Proust relates, it abounds so much in Spain, that in Andalusia large tracts are covered with an efflorescence of it after floods. *Journ. de Physique*, xxxiii. 312.

² It is also made in Bohemia from the mineral water of Sedlitz.

³ According to Dr. Henry, the composition is, acid 38, magnesia 18, and water 44 parts, in 100 of the salt.

composed by the alkalies, and their carbonates, lime-water, the muriates of barytes and lime, nitrate of silver, and acetate and superacetate of lead, which are therefore incompatible with it in prescriptions.

Medical properties and uses.—This salt is purgative and diuretic. It operates readily without griping; and notwithstanding its nauseous taste, is generally retained by the stomach when it rejects almost all other things, especially when administered in small repeated doses largely diluted, or united with acidulated infusion of roses. In these forms it is a useful purgative in hypochondriasis, colica pictonum, ileus, puerperal fever, and in all acute diseases. It is also used as an adjunct to stimulating clysters. By moderate exercise in the open air, while taking this salt, the purgative effect is diminished, and its diuretic property increased. The dose is from ʒfs to ʒij dissolved in water, gruel, or any other vehicle; and taken either at once, or in divided doses frequently repeated.

Off. preparations. *Enema Catharticum.* D. *Enema fœtidum.* D.

MALVA. *Spec. Plant. Willd.* iii. 774.

Cl. 16. *Ord.* 6. *Monadelphja Polyandria.* *Nat. ord.* *Columniferæ* *Linn.* *Malvaceæ* *Juss.*

G. 1290. *Calyx* double, the exterior three-leaved. *Capsules* numerous, one-seeded.

*** with angular leaves.*

Species 43. *Malva sylvestris.*¹ *Common Mallow.* *Med. Bot.* 2d edit. 554. *t.* 199. *Smith Flora Brit.* 740. *Engl. Bot.* 671.

Officinal. **MALVA.** *Lond.* **MALVÆ SYLVESTRIS HERBA, FLORES.** *Edin.* *Mallow.*

Syn. *Mauve* (F.) *Käsepappel* (G.) *Malva* (I.) *Malvas* (S.)

This is a perennial, indigenous plant, common over all Europe, flowering from May till August. The root is fusiform, branching, and of a whitish colour. The stem frequently erect, branched, round, hairy, and many-flowered. The leaves are alternate, petiolate, cordate, divided into seven lobes, plaited, somewhat rough, and crenate; the upper ones are almost palmate. At the base of each footstalk are two stipules. The flowers, which stand on slender hairy peduncles, are large; composed of five inversely cordate purple petals, three times longer than the calyx, which is hispid. The capsules are from ten to fifteen in number, of a rounded kidney form, crustaceous, brittle, close all round, of a dark straw colour, excavated, and wrinkled on the back. The seeds are kidney-shaped, ash-coloured, and furnished with an arillus which opens inwardly.

Qualities.—Common mallow is inodorous, and has a weak, herbaceous, mucilaginous taste. The decoction is precipitated

¹ *Μάλαχ'ν* *Græcorum.*

by acetate and superacetate of lead; and is nearly a simple solution of vegetable mucus.

Medical properties and uses.—This herb is demulcent. Its decoction is employed in dysentery, ischuria, strangury, and nephritic complaints, but is in every respect inferior to that of althea root. It is chiefly used in the form of enema in tenesmus, and nephritic colic: and as cataplasms and fomentations in phlegmonous inflammation.

MANGANESIUM. Manganese.

This is a brittle gray coloured metal, somewhat resembling iron in its external aspect, of a granular texture, and not possessing ductility or malleability. It has not been discovered native in its metallic state, but its ores are found in most of the countries of Europe both in primitive and transition mountains. Manganese in the ore is found

A. United with oxygen:

i. oxidized

Sp. 1. *Gray manganese ore.*

Var. a. Radiated. b. Foliated.

c. Compact. d. Earthy.

2. *Black manganese ore.*

3. *White manganese ore.*

4. *Red manganese ore.*

5. *Sulphuret of manganese.*

6. *Phosphate of manganese, and iron.*

—a. and combined with }
carbonic acid. }

—b. ————— with sulphur.

c. ————— with phos- }
phoric acid. }

Of these species the first only has been introduced into the list of materia medica.

Officinal. MANGANESE.¹ *Dub.* Manganese, or more properly Black Oxide of Manganese.

Syn. Manganese (F.) Braunstein (G.) Manganese (I. S.)

Under the name of black oxide of manganese are implied all the varieties of the first species. It was discovered in England by Boyle, in the beginning of the 17th century, but was regarded as a modification of iron ore, till the separate experiments of Scheele and Bergman, published in 1774, proved it to be an oxide of a peculiar metal; which Gahn afterwards succeeded in obtaining in its metallic state. It is found in Great Britain, Germany, Switzerland, the north of Italy, and France.

The greater part of the black oxide of manganese used in England is obtained near Exeter in Devonshire, in Cornwall, and at Howth, near Dublin. It occurs crystallized and amorphous; and is generally in combination with small portions of oxide of iron, carbonate of lime, silex, and barytes.

Qualities.—Black oxide of manganese differs in its exter-

¹ This term is improperly used by the Dublin College: for although the black oxide was originally named *manganese*, and is still so named in commerce; yet, in a professedly scientific work, more accuracy of nomenclature is required.

nal characters. Its usual colour varies from iron-gray to black; when crystallized it is shining, but when amorphous devoid of lustre. Its texture is radiated, foliated, compact or earthy. None of the varieties are very hard; all of them are brittle, and several of them soil the fingers. Their specific gravity varies from 3.5 to 4.7. One hundred parts of the black oxide consist of 71.23 of metallic manganese, and 28.67 of oxygen. Exposed to the heat of ignition, all the varieties afford oxygen gas; and when mixed in powder with sulphuric acid, they afford it at a low temperature. It also parts with its oxygen to muriatic acid, converting it into oxymuriatic acid¹; or, according to the theory of Sir H. Davy, the hydrogen of the muriatic acid is attracted by the oxygen of the oxide of manganese, and chlorine is evolved.

Medical properties and uses.—This metallic oxide is only used for procuring oxygen gas; and for fumigation in cases of infection. To procure oxygen gas, a portion of the oxide is put into an iron retort, fitted with a long curved tube, the extremity of which being placed under an inverted jar filled with water in a pneumatic trough, the retort is put into a common fire and exposed to a full red heat. The caloric at this high temperature weakens the affinity between the manganese and the oxygen with which it unites, and causing it to assume a gaseous state, the oxygen gas is transmitted through the water, and collected in the jar. From the necessity of oxygen for carrying on the process of animal respiration, much benefit was expected from the breathing oxygen gas in disease; but experience has not confirmed the high expectations which were formed of its powers. It certainly increases the force and velocity of the pulse; and has been exhibited with seeming advantage in asthma, chlorosis, scrofula, typhoid fevers, and other diseases of debility. Diluted with from ten to twenty parts of atmospheric air, one or two quarts of it may be breathed at intervals in the course of the day.

But a more certain benefit is obtained from the use of this oxide of manganese in fumigations. Medicine is indebted to Morveau for the discovery of this mode of destroying infection, and the numerous instances in which it has proved beneficial have fully established its use. For a fumigation the following ingredients are required: common salt ziv , oxide of manganese in powder zj , sulphuric acid f3j , and water f3ij ; the water and acid must be mixed together, and then poured over the other ingredients in a China basin, which should be placed in a pipkin of hot sand. The doors and windows of the room to be fumigated, must be closely shut for two hours after the charged

¹ The greatest consumption of black oxide of manganese is for the formation of the oxymuriatic acid, as employed in the art of bleaching.

basin has been placed in it; then thrown open, and a current of air allowed to pass through the room.

MANNA. Vide *Fraxinus Ornus*.

MARRUBIUM. *Spec. Plant. Willd.* iii. 109.

Cl. 14. Ord. 1. Didynamia Gymnospermia. Nat. ord. Verticillatæ Linn. Labiatæ Juss.

G. 1111. Calyx salver-shaped, rigid, ten-streaked. Corolla, upper lip bifid, linear, and straight.

** with ten-teethed calyxes.

Species 8. *M. vulgare*.¹ White Horehound. *Med. Bot.* 2d edit. 332. t. 118. *Smith Flora Brit.* 636. *Engl. Bot.* 410.

Official. MARRUBIUM. *Lond.* MARRUBII VULGARIS HERBA. *Edin.* MARRUBIUM ALBUM; FOLIA. *Dub.* Horehound leaves. *Syn.* Marrube blanc (F.) Weisser andorn (G.) Marrubio (I.) Marubio (S.)

White horehound is an indigenous, perennial plant, growing in waste grounds, and flowering in July. The root is fibrous, sending up numerous stems about eighteen inches high, quadrangular, erect, and very downy. The leaves are in pairs upon broad footstalks, rounded, crenate, wrinkled, hoary, and woolly on the under surface. The flowers are white, in crowded axillary whorls, sessile, villous; and furnished with setaceous awned bractes. The calyx is tubular, furrowed, and divided at the margin into ten narrow segments, which are hooked at their points: the corolla is tubular, compressed, opening at the mouth into two lips, the upper of which is narrow and cloven; the under broader, reflected, and three-cleft, with the middle segment broad, and scalloped. The filaments are two long and two short, with simple anthers, within the tube; and the style is slender, with a cloven stigma. The seeds are four, at the bottom of the calyx.

Qualities.—Horehound dried has an aromatic odour, which however is soon lost by keeping; and a bitter taste. Both water and alcohol extract its virtues. The infusion reddens tincture of litmus, gives a deep olive green precipitate with sulphate of iron, a brown with nitrate of silver, and a pale yellow with muriate of mercury: acetate and superacetate of lead do not affect it. The active principles of horehound, therefore, appear to be a bitter extractive, volatile oil, and gallic acid.

Medical properties and uses.—Horehound is tonic, diuretic, and laxative. It was formerly much used in pulmonary affections, and is still a popular remedy for asthma and obstinate coughs. It loosens the belly when taken in large doses, and was consequently recommended in jaundice, cachexies, menstrual obstructions, and hysteria; but its powers are not found by modern practitioners equal to the account the ancients gave of them, and therefore it is very seldom prescribed.

¹ *Πικρὸν* Dioscoridis. Lemery says the name is derived from the Hebrew word *Mar-rob*, which means a bitter juice.

The dried herb may be given in powder, in doses of from ʒss to ʒj; or of the expressed juice of the fresh plant from fʒss to fʒjss may be taken twice or thrice a day. It is also used in the form of infusion.

MASTICHE. Mastich. See *Pistacia Lentiscus*.

MEL. Lond. Edin. Honey.

Syn. Miel (F.) Gemeiner Honig (G.) Mele (I.) Miel (S.) Ussub (Arab.) Medhú (H. and San.)

Honey is collected by bees from the nectaries of * flowers, in which it is abundantly secreted; but it probably undergoes some change within the insect before it is excreted by it, and deposited in the comb. That it does not however undergo the process of digestion as food is likely, for the honey or sugar on which bees are fed during winter is not again excreted as honey; and the flavour of honey varies according to the nature of the flowers from which it collected. Thus the honey of Minorca, Narbonne, and England are known by their flavours; and the honey prepared in different parts even of the same country differs.¹ It is separated from the comb by dripping, and by expression: the first method affords the purest sort; the second separates a less pure honey; and a still inferior kind is obtained by heating the comb before it is pressed. When obtained from young hives, which have never swarmed, it is denominated virgin honey. It is sometimes adulterated with flour, which is detected by mixing it with tepid water; the honey dissolves, while the flour remains nearly unaltered.

Qualities.—Honey has a peculiar saccharine aromatic odour; and a sweet acidulous sharp taste. In colour it varies from white or yellowish white, to a pretty deep shade of amber or golden yellow: in consistence, from the fluidity of limpid oil to the stiffness of soft suet: and when the more limpid kind is kept, partly crystallizes into little irregular concretions. It evidently contains sugar, mucilage, wax, and an acid; and occasionally some essential oil, as in the perfumed honey of the Crimea. Honey is soluble in water, and partially in alcohol; and, like sugar, passes into the vinous and acetous fermentation. When heated over a slow fire it throws up a scum; and if the heat be continued so as to produce evaporation, the vapour is inflammable; and the honey becomes brown, and acquires an unpleasant flavour, which is strong in proportion to the degree of temperature employed. Lowitz found that the addition of charcoal to a solution of honey deprives it of odour,

¹ The nectary is a glandular organ of the corollas of flowers. In many flowers it forms part of the petals themselves; in others it is a distinct organ. It is not easy to assign the use of honey in the vegetable economy.

² In some parts of Asia and America a poisonous honey is met with, which probably owes its deleterious properties to the flowers on which the bees feed.

taste, and colour; but the colour again returns when the solution is evaporated. Cavezzali separated the sugar by first melting the honey, then adding carbonate of lime (egg-shells) in powder as long as any effervescence appeared; and, after separating a scum which forms by rest, filtering it, and setting it aside to crystallize. The crystals he purified by washing them with alcohol.¹ Proust separated it from a ready granulated honey by the action of alcohol.² Nitric acid converts honey into oxalic acid.

Medical properties and uses. — Honey is laxative, and externally detergent and stimulant. Simple honey is seldom ordered as an internal medicine; indeed, when freely eaten as food it passes off quickly by stool, and induces cholera in some habits; on which account, simple syrup should perhaps be preferred in all cases for forming medicinal preparations for internal use. As a local stimulant, it is employed in glysters; and forms an excellent adjunct to gargles in cynanche, and aphthous ulceration of the mouth and fauces. It is also a useful detergent to foul ulcers.

Official preparation. *Mel despumatum*. L. D.

MELALEUCA. *Spec. Plant. Willd.* iii. 1428.

Cl. 18. Ord. 3. Polyadelphia Icosandria *Nat. Ord.* Hesperideæ
Linn. Myrti Juss.

G. 1392. *Calyx* five-cleft, half superior. *Corolla*, *Petals* five. *Filaments* numerous, connate in five bodies. *Style* one. *Capsule* half-covered, three-celled.

Species Nova. M. *Cajuputi*.³ *Cajuputi Melaleuca*. *Rumphius* (*arbor alba minor*) *Herbar. Amboinense*, ii. lib. 2. cap. 26. t. 17.

Official. CAJUPUTI OLEUM *Lond.* MELALEUCE LEUCADENDRI OLEUM VOLATILE. *Edin.* OLEUM CAJUPUT. *Dub.* *Cajuputi oil*.
Syn. *Cajeput* (F.) *Kajeputohl* (G.) *Cajeput* (I.) *Cajuputa* (Malay) *Kyapootie tyllum* (Tam.)

The tree which yields this oil is a native of Amboyna, and the south part of Borneo, where it grows very abundantly in dry arid places. It is named *Cajuputa* in the Malay language; and also by the natives *Dau Kitsjil*, and *Cajukilan*. It is a small tree, in some situations rather a shrub than a tree with a running root, often arched and half above the ground. The stem is covered with a rough, pale, lamellated bark. The leaves are alternate on short petioles, not unlike those of the willow, about three inches long, and little more than half an inch broad, lanceolate, and somewhat falcated; entire, smooth, three-nerved, firm, dry, fragile, of a pale yellowish green colour, and having a very grateful odour. The

¹ *Annales de Chimie*, xxxix. 110. ² *Journal de Physique*, lix. 428.

³ As the specimens of the tree which yields the true *Cajuputi* oil, which were sent home by Mr. Christopher Smith, differ from the *M. Leucadendron*, which was formerly supposed to yield it, and agree with the *Arbor alba minor* of *Rumphius*; Drs. Maton and Smith have fixed this as a new species under the name of *M. Cajuputi*.

flowers are white, sessile, and accompanied with minute, ovate bractes. The calyx is tubular, five-toothed, and one half deciduous; the petals are roundish, and concave; and the bundles of the filaments, which are long, filiform, and bearing small ovate anthers, are fixed within the tube of the calyx. The germen is inferior, roundish, crowned with a simple slender style longer than the filaments; and becomes a three-celled capsule, containing many small, oblong, angular seeds.¹

To prepare the oil, the leaves are collected in a hot dry day, and put into thoroughly dry bags; in which nevertheless they soon spontaneously heat and become moist, as if macerated in water. They are then cut in pieces, infused in water, and left to ferment for a night; after which they are distilled. The quantity of oil they yield is very small, scarcely more than three fluid drachms being obtained from two bags of leaves.² When newly drawn it is very limpid, pellucid, and volatile; and, Rumphius says, smells strongly of cardamoms, but is more pleasant. It is generally imported in copper flasks or canisters; but lately some has been brought to us in quart glass bottles. On account of the high price of real Cajuputi oil, it is said to be often adulterated with oil of turpentine, and coloured with resin of milfoil.

Qualities.—The odour of this oil, as it is brought to us, is at first powerful, and similar to that of a mixture of oil of turpentine and camphor, but it soon becomes extremely fragrant and agreeable: the taste is pungent, and resembles very much that of camphor. It is limpid, transparent, and generally of a blueish green colour, which is said to be partly derived from the copper of the flasks. When dropped on the surface of pure water, it diffuses itself over it, and very soon completely evaporates, which is a good test of its purity; and it burns rapidly, without leaving any residuum. Like other volatile oils, it is soluble in alcohol, and partially in water.

Medical properties and uses.—Cajuputi oil is a highly diffusible stimulant, antispasmodic, and diaphoretic.³ When taken into the stomach, it produces a sensation of heat, fills and quickens the pulse; and soon afterwards a copious sweat breaks out. It is efficaciously given in dropsy, chronic rheumatism, palsy, hysteria, flatulent colic, and other spasmodic and nervous affections. As a local and external stimulant, it is employed diluted with olive oil, as an embrocation to allay the pain

¹ The natives of the Moluccas macerate the leaves and flowers in fresh oil, and afterwards impregnate it with the smoke of benzoin. This preparation they call *Minyac Money*, or odorated oil, and use it as an unguent for the head. *Rumphius Herb. Amboin.* l. c.

² *Rumphius.*

³ "Hujus olei binæ guttæ cum cerevisia vel vino propinatæ sudores excitant vehementes, cui finis apta medicamenta India exhibet perpauca." *Rumphius.*

of gout and rheumatism, and to restore vigour to joints after sprains. When put into a carious tooth, it lulls the pain of tooth-ach; and we have seen much benefit derived from rubbing it on the temples, in defective vision from a weakened state of the eyes. The dose is three or four drops on a lump of sugar.

MELISSA. *Spec. Plant. Willd.* iii. 146.

Cl. 14. Ord. 1. Didynamia Gymnospermia. Nat. ord. Verticillatæ Linn. Labiatæ Juss.

G. 1118. Calyx dry, nearly flat above: with the upper lip subfastigiate. Corolla, upper lip somewhat arched, bifid; lower lip with the middle lobe cordate.

Species 1. *Melissa officinalis*.¹ Officinal or Common Balm. *Med. Bot.* 2d edit. 335. t. 119.

Officinal. MELISSÆ OFFICINALIS FOLIA. *Edin.* Balm leaves.

Syn. *Melisse* (F.) *Melisse* (G.) *Melissa* (L.) *Balsamina* (S.)

Balm is a perennial plant, a native of the south of Europe, growing in mountainous situations, and flowering from July to September. It is cultivated in our gardens.² The root is fibrous, and sends up annual stems, which rise about two feet high, and are branched, quadrangular and smooth. The leaves are opposite in pairs, of a bright green colour, ribbed, deeply serrated, and cordate; the lower ones on long foot-stalks, and the upper nearly sessile. The flowers, which are in small axillary bunches forming semi-whorls, stand on slender peduncles, at the base of which are small, oblong, notched, hairy bractes. The calyx is tubular and pentangular; the upper lip tridentate; the lower shorter, and cut into two acute teeth. The corolla, which is tubular, of a yellowish white colour, with the upper lip shorter, and notched, and the lower three-cleft, encloses the anthers; the seeds are four, ovate, and placed at the bottom of the calyx.

For medicinal use the herb should be cut before it flowers, as it is then more odorous.

Qualities.—The recent plant has the agreeable odour of lemons, which is lost in drying; and an austere, slightly aromatic taste. In distillation with water, it yields a small portion of a yellow essential oil, on which its odour depends. The watery infusion tastes rough; reddens slightly litmus paper; and affords with oxysulphate of iron a deep olive, with nitrate of silver a deep brown, and with superacetate of lead a copious greenish white precipitate.

Medical properties and uses.—Officinal balm is stomachic and diuretic. It was formerly prized as a corroborant in hy-

¹ *Μελισσοφυλλον* Dioscoridis, bees being very fond of it.

² It was cultivated by Gerarde in 1596.

pochondriacal and nervous affections; but it is now used only in the form of tea, as a grateful diluent in fevers.

MENTHA.¹ *Spec. Plant Willd.* iii. 74.

Cl. 14. Ord. 1. Didynamia Gymnospermia. Nat. ord. Verticillatæ Linn. Labiatæ Juss.

G. 1102. Corolla not quite equal, four-cleft; the broader segment emarginate. Stamens upright, distant.

* Spiked.

Sp. 7. *M. viridis*. Spearmint. *Smith (spec. 3.) Flora Brit.* 612. *Med. Bot.* 2d edit. 338. t. 121.

** Capitate.

Sp. 13. *M. piperita*. Peppermint. *Smith (spec. 4.) Flora Brit.* 613. *Med. Bot.* 2d edit. 336. t. 120. *Eng. Bot.* 461.

*** Verticillate.

Sp. 20. *M. Pulegium*. Pennyroyal. *Smith (spec. 12.) Flora Brit.* 624. *Med. Bot.* 2d edit. 342. t. 122.

1. MENTHA VIRIDIS.²

Official. MENTHA VIRIDIS. *Lond.* MENTHA SATIVA; FOLIA. *Dub.* Spearmint.

Syn. Baume verte (F.) Frauenmurze (G.) Menta Romana (I.) Menta (S.)

This is an indigenous perennial plant, growing in marshy places, and flowering in August. For medicinal purposes, it is cultivated to a considerable extent. Dr. Smith enumerates four varieties of the species, the first of which is our plant. The root is creeping; the stem quadrangular, and foliaceous, rising about two feet in height, erect, smooth, and branching. The leaves are opposite, nearly sessile, lanceolate, about two inches and a half long, and an inch broad; of a deep green colour above, paler beneath, pointed, serrated, smooth, and sometimes a little hairy underneath: the flowers are supported on smooth partial flower-stalks, verticillated, in long pointed paniced spikes; furnished with setaceous, ciliated, lanceolate bractes, longer than the flowers: the calyx is cylindrical and furrowed, with five nearly regular teeth: the corolla funnel-shaped, tender, smooth, and of a purple colour: the stamens are varying in length, with roundish anthers; and the style, which is filiform, with a bifid divaricated stigma, rises from a four-cleft germen: the seeds are four, small, and generally abortive, owing to the viviparous nature of the roots.

For medicinal use, spearmint is generally cut just as the flowers appear; but for obtaining the essential oil, the flowering plant is preferred. It should be cut in very dry weather.

Qualities. — Spearmint has a strong aromatic odour, and a warm slightly bitter taste; neither of which qualities is impaired by drying. Both alcohol and water extract its virtues; and in distillation with water an essential volatile oil is obtained.

¹ *Mint* Dioscoridis.

² Hæc species dignoscitur pedicellis semper glaberrimis. *Smith Flor. Brit.* 613.

Medical properties and uses.—Spearmint is stomachic and carminative. The infusion is serviceable in allaying sickness and vomiting in a weakened state of the stomach; and is a common diluent in febrile diseases.

Official preparations. *Aqua Menthæ viridis.* L. D. *Infusum Menthæ comp.* D. *Oleum Menthæ viridis.* L. D. *Spir. Menthæ viridis.* L.

2. MENTHA PIPERITA.

Official. MENTHA PIPERITA. *Lond.* MENTHÆ PIPERATÆ HERBA. *Edin.* MENTHA PIPERITIS; HERBA. *Dub.* Peppermint.

Syn. Menthe poivrée (F.) Ofeffermünze (G.) Menta piperita (L.)

Peppermint is an indigenous perennial plant, growing in moist places, and flowering in August and September. It is generally cultivated for medicinal use; particularly about Mitcham in Surry¹, whence the London market is chiefly supplied. There are three varieties of peppermint, the first of which is the officinal plant. The root is creeping: the stem quadrangular and channelled, nearly upright, and about two feet high, branching, purplish, and rather hairy, with the hairs bent backwards: the leaves are of a dark green colour, opposite; petiolate, ovate, rather pointed, serrated, the upper side smoother and less pubescent than the under, which is paler, with white and purple veins: the flowers are in terminal spikes, solitary, almost capitate, interrupted beneath, with the lower whorl more remote, and on a footstalk: the bractes are lanceolate and ciliated: the calyx is furrowed, tender, studded, with glandular points, the base entirely naked, very smooth, and five-cleft, with the teeth of a blackish purple colour, and ciliated: the corolla is purple: and conceals within its tube the anthers, which are on short filaments: the germen is four-cleft, with a filiform style longer than the corolla, and furnished with a bifid stigma.

Dr. Smith supposes that this plant was discovered by Doctor Eales; and on examining the Linnean Herbarium, now in his possession, he found that the *Mentha piperita*, described by Linnæus, was not our officinal plant, but merely a variety of the *M. hirsuta*, with the odour of peppermint. "The cultivators of the plant observe, that to keep up its quality, the roots must be transplanted every three years; otherwise it degenerates into the flavour of spearmint."² If the plant be cut in wet weather it changes to black, and is little worth.

Qualities.—The odour of both the recent and dried plant is penetrating, grateful, in some degree resembling camphor; and the taste pungent, warm, glowing, and bitterish, followed by a sensation of coldness in the mouth. These qualities de-

¹ Considerably more than one hundred acres of this herb are grown in the parish of Mitcham; but the greater part of the peppermint is made into a *liqueur*, which is sold as a dram in London. *Stevenson's Survey*, 377, 378.

² *Linnean Transactions*, v. 176.

pend on an essential oil and camphor. The oil can be obtained separate by distillation in water, is of a yellowish colour, and holds the camphor in solution.

Medical properties and uses. Peppermint is tonic, antispasmodic, and carminative. It is chiefly used to allay nausea and griping, to relieve flatulent colic, and in hysteria: or as a vehicle to cover the nauseous taste of other medicines; but to many palates it is extremely disagreeable. It may be given under the form of watery infusion; but the distilled water and the essential oil are generally preferred.

Official preparations. *Aqua Menthae piperitæ.* L. E. D. *Oleum Menthae piperitæ.* L. E. D. *Spiritus Menthae piperitæ.* L. E.

3. MENTHA PULEGIUM.

Official. PULEGIUM. *Lond.* MENTHÆ PULEGII HERBA. *Edin.* PULEGIUM; HERBA. *Dub.* Pennyroyal.

Syn. Menthe peuliot (F.) Polei (G.) Puleggio (I.) Poleo (S.)

This is an indigenous perennial plant, growing on heaths and in moist meadows, and flowering in September. Like the other mints, it is cultivated for medicinal purposes; and becomes more luxuriant and erect. The stem is obtusely quadrangular, trailing, branching, and somewhat hairy: the leaves are petiolate, small, obtuse, bluntly serrated, and in a small degree hairy underneath: the flowers, which are supported on stalks covered with short thick hairs, are in sessile whorls, numerous, and many-flowered; and without bractes: the calyx is of a purplish green colour, tender, furrowed, and covered with thick short hairs: five-cleft, with the teeth pointed, unequal, and ciliated: the corolla is twice the length of the calyx, purple, four-cleft, with the base white and externally villous: the stamens are erect, and longer than the corolla; and the germen similar to that of the former species.

Qualities—The odour is similar to that of spearmint, but less fragrant; the taste aromatic and pungent, with a slight flavour of camphor. These qualities reside in a very volatile essential oil, which rises in distillation with water.

Medical properties and uses.—Pennyroyal was formerly regarded as emmenagogue, expectorant, and diaphoretic; and was in repute for promoting the uterine evacuation, and relieving hysteria, hooping-cough, and asthma; but it is now justly considered of no value, and seldom used in regular practice.

Official preparations. *Aqua Pulegii.* L. E. D. *Oleum Pulegii.* L. D. *Spiritus Pulegii.* L.

MENYANTHES. *Spec. Plant. Willd.* iii. 810.

Cl. 5. *Ord.* 1. Pentandria Monogynia. *Nat. ord.* Preciæ Linn. *Ly-symachia.* Juss.

G. 299. *Corolla* hirsute. *Stigma* cloven. *Capsule* one-celled.

Sp. 4. *M. trifoliata.* Buckbean. *Med. Bot.* 2d ed. t. 97. *Smith Flor. Brit.* 225; *Engl. Bot.* 405.

Official. MENYANTHES. *Lond.* MENYANTHIS TRIFOLIATÆ FO-LIA. *Edin.* TRIFOLIUM PALUDOSUM. *Dub.* The leaves of Buckbean.

Syn. Menianthe (F.) Bitterklee (G.) Trifolio fibrino (I.) Menyanthes de tres en rama (S.)

This is one of the most beautiful of our indigenous plants. It is a perennial, not uncommon in watery situations, in a black boggy soil, flowering in June and July. The root is long, round, fibrous, and of a black colour; the stems are spreading, branched, and clothed with sheathing footstalks, each of which supports a ternate leaf, formed of three obovate smooth, bluntly toothed leaflets, of a beautiful green on the upper surface, and pale beneath: the flower stalk, which springs from within the sheath of a leaf, is longer than the leaves, erect, smooth, round, bearing a thyrsus of about ten flowers, accompanied by small ovate entire bractes: the calyx is obtusely five-toothed; the corolla a funnel-shaped petal, cleft into five deep segments, which are white, tipped with rose colour, and closed within with long fleshy shaggy fibres on their upper side: the anthers are sagittate, and of a red colour: the germen round: and the stigma cloven and notched, on a slender style twice the length of the stamens.

Qualities.—The leaves of buckbean have a faint disagreeable odour, and an intensely bitter nauseous taste, which is extracted by infusion with water.

Medical properties and uses.—Buckbean is tonic, diuretic, and purgative. It has been used with seeming benefit in remittent and intermittent fevers, rheumatism, arthritic affections, and in cachectic and cutaneous diseases. In large doses it is apt to excite vomiting. The dose of the dried leaves powdered, is from ʒj to ʒj; or of an infusion made with ʒls of the dried leaves, and boiling water Ofs, from fʒj to fʒjss may be taken three or four times a day. It is adviseable to unite some aromatic with either of these forms.

MEZEREI CORTEX. Mezereon Bark. Vide *Daphne*.

MOMORDICA. *Spec. Plant. Willd.* iv. 601.

Cl. 21. *Ord.* 8. Monœcia Monadelphia. *Nat. ord.* Cucurbitaceæ.

G. 1739. Male. *Calyx* five-cleft. *Corolla* five-parted. *Filaments* five.

Female. *Calyx* five-cleft. *Corolla* five-parted. *Style* trifid.

Gourd opening elastically.

Species 13. *M. Elaterium*.¹ Squirting Cucumber. *Med. Bot.* 2d edit. t. 72.

Official. ELATERII POMA.² *Lond.* ELATERIUM. *Edin.* ELATERIUM; FRUCTUS. *Dub.* The fruit of the Wild Cucumber: Elaterium.

Syn. Concombre sauvage (F.) Esselsgurhen (G.) Cocomero salvatico (I.) Cohombrillo (S.)

¹ *Sinus apocis* Dioscoridis.

² The London College have erred in styling the fruit an apple, as it is evidently a pepo or gourd.

This species of *momordica* is a perennial; native of the south of Europe, flowering in June and July. It is cultivated in England, but does not survive the severity of our ¹ winters. The root is large and fleshy, sending forth several thick rough trailing stems, which branch and extend three or four feet every way: the leaves are on long petioles, large, rough, of a grayish green colour, and cordate: the flowers are axillary, similar in appearance to those of the common cucumber, but smaller, of a pale yellow colour, with a greenish base: the male flowers stand on short peduncles, but the female sit on the germen, which is inferior: the fruit into which it swells has the appearance of a small oval cucumber, of a grayish colour, and covered with prickles. When fully ripe it quits the peduncle, and casts out the seed and juice, with great force and to a considerable distance, through the hole in the base where the footstalk is inserted.

For medicinal use the fruit is gathered in September just before it is ripe; and the clear juice which runs from it, and that obtained by the expression of the fruit, are inspissated, and form the elaterium of the shops.

Qualities. — The juice is nearly inodorous, and has a very slightly bitter taste. It deposits by rest a considerable portion of feculent matter; for an account of the nature of which see *Extractum Elaterii* among the Preparations.

Medical properties and uses. — This fruit is a very violent cathartic. It was much employed by the ancients, who extolled it as highly efficacious in melancholic and maniacal attacks. They used the root also in similar cases. It is still frequently given in dropsies; and although when incautiously given, it may bring on a dangerous hypercatharsis, yet, properly prescribed, it is the best hydragogue with which I am acquainted. The extract is always employed in preference to the recent fruit.

Official preparation. — *Extractum Elaterii*. L. E. D.

MORUS. *Spec. Plant. Willd.* iv. 368.

Cl. 21. Ord. 4. Monœcia Tetrandria. Nat. ord. Scabridæ Linn. Urticæ Juss.

G. 1664. Male. *Calyx* four-parted. *Corolla* 0.

Female. *Calyx* four-leaved. *Corolla* 0. *Calyx* becoming a berry. *Seed* one.

Species 5. *M. nigra*. Common Mulberry tree. *Med. Bot.* 2d ed. 712. t. 243.

Official. MORI BACCÆ. Lond. Mulberries.

Syn. Murier noir (F.) Schwarze Maulbeeren (G.) Morone o Gelso (I.) Moras (S.)

This species of mulberry is a native of Persia, whence it

¹ It was cultivated by Gerarde in 1596.

was brought to Italy, and gradually spread over Europe. It is now abundantly cultivated in this country, flowering in June, and ripening its fruit in September. The tree, which seldom exceeds thirty feet in height, is covered with a brownish gray bark: the leaves are numerous, on short footstalks, cordate, serrated, veined, about three inches long, and nearly as broad; rough on the upper surface, which is of a deep green colour, and covered with minute warts; and paler and villous underneath. The male flowers, which are on the same tree as the female, are in close roundish catkins, composed of caducous florets, which consist of four concave, oval, erect, calycinal leaves, inclosing four filaments bearing simple anthers: the female flowers contain a roundish germen, crowned with two divaricated styles furnished with simple stigmas, inclosed in a calyx of four ovate concave erect leaves; which, after flowering, swell, become succulent and coloured, investing the seed; and many of them being crowded together on one peduncle form a spurious compound berry, that has the appearance of a real succulent berry composed of a number of smaller berries.¹

Qualities.—Mulberries are inodorous, have a sweet acidulous taste, and abound with a deep blood red juice. Hermbstadt found that their acidulous quality depends on the presence of tartaric acid, and I find they contain also jelly and mucus.

Medical properties and uses.—This fruit is cooling and laxative; and, when not too ripe, allays thirst, and proves exceedingly grateful in febrile diseases. It is seldom, however, used medicinally; and, when eaten too freely as an article of food, is apt to occasion diarrhoea.

Official preparation. *Syrupus Mori*. L.

MOSCHUS. *Syst. Nat. Gmelin*. i. 172.

Cl. 1. Ord. 5 Mammalia Pecora.

G. 28. Horns none. Fore teeth eight in the lower jaw. Tusks one on each side in the upper jaw, projecting out of the mouth.

Sp. *M. moschiferus*. The Musk Deer. *Pennant Quadr.* 56. t. 10. f. 1.

Official. MOSCHUS. *Lond. Edin. Dub.* Musk.

Syn. Musc (F.) Bisam (G.) Muschio (I.) Almuzle (S.) Meshk (Arab. & H.)

This animal is an inhabitant of the alpine mountains of the east of Asia, particularly those which divide Thibet from India. It is a solitary animal, living among the rocks, and frequenting the highest tops of the snowy peaks; very timid, and difficult to be taken. The length of the full grown animal scarcely ever exceeds three feet, and in its general aspect it resembles the deer; the head is elegant: the fleece coarser than that of

¹ It is a curious fact, that two mulberry trees growing near each other, bear generally more fruit, and that of a finer quality, than if planted alone. This is supposed to be owing to the male flowers in one of the trees being more effective than those of the other.

the stag, but very light and soft, and varying in colour at different seasons of the year, and different periods of life, chiefly from brown to nearly black, hoary underneath, and sometimes, but rarely, whitish: the tail is very short. Between the navel and the prepuce is an oval bag, flat on one side, and convex on the other, about three inches long, and two broad, projecting, with a very small orifice, and beset with short hairs. This is the musk bag: it is empty in the young animal; but in the adult contains from ʒjss to ʒij of musk. The animal often expresses part of the contents of the bag, when it becomes too full, by rubbing itself against stones; and the matter thus ejected is said to be a purer musk than that which is brought to this country.

Musk is imported into England from China in caddies, which contain from twenty to sixty and one hundred ounces each; but an inferior kind is brought from Bengal, and a still baser sort from Russia. The best is that which is in the natural follicle, or the *pod* as it is denominated in mercantile language. This is a sac or bag about the size of a pigeon's egg, of a brownish colour, lined with a very thin membrane, and covered externally with coarse hairs. The musk itself is in grains concreted together, dry, yet slightly unctuous, and free from grittiness when moistened and rubbed between the fingers, or chewed.

As musk is a very high-priced article, it is often adulterated. When this is the case, the bag, which should not have any appearance of having been opened, appears, if narrowly examined, slit or punctured in several places, through which sand, lead, and other heavy matters are inserted. The musk is sometimes nearly all abstracted, and a mixture of dried blood and asphaltum introduced into the bag; or both the bag and the musk are artificial, and only scented with real musk. The first of these adulterations is easily detected; the presence of blood may be suspected, if the musk, when held over the flame of a candle on a thin spatula, emits, as it inflames, a fetid smoke: and asphaltum is discovered by its melting, and running before it in flames, if heated on a spatula, whereas real musk inflames without running, and is converted into charcoal.¹ The artificial bags are known by the inner membrane, which lines the real musk bags being deficient.

Qualities.—The odour of musk is aromatic, but peculiar, extremely powerful and durable; the taste bitterish and heavy; and the colour a deep brown, with a shade of red. Exposed to heat it burns with a white flame, and leaves a light spongy

¹ The formation of ammonia when rubbed with potash has also been mentioned as a test of the presence of blood; but the fixed alkalies have developed ammonia in the best specimens of musk we have ever seen.

charcoal. Trituration with potass developes ammonia. Boiling water dissolves it partially, alcohol better, and sulphuric ether still more completely. The watery *infusion* has a yellowish brown colour, a bitterish taste, and the strong odour of the musk; and reddens infusion of litmus. Solutions of muriate of mercury and of sulphate of iron produce with it copious precipitates; as does also infusion of yellow cinchona bark. Solution of nitrate of silver throws down a whitish precipitate, which, on exposure to the light, changes to a livid blue; and nitrate of mercury produces a brownish precipitate. The *alcoholic tincture* is of a reddish brown colour, transparent, but with scarcely any odour of the musk. Water renders it milky, and gives out the strong musk odour; but with the other tests it presents the same results as the watery infusion. The *ethereal tincture* has a deep brown colour; and, when evaporated on the surface of water, deposits a brown, tenacious, nearly insipid resin, and renders the water milky. The resinous matter has the musk odour in perfection; while the substance which occasions the turbidness of the water possesses the properties of extractive. From these results musk appears to contain albumen, gelatin, muriate of ammonia, phosphate of soda, and an uncombined acid; but the greater part of it consists of a resin combined with a volatile oil, and a mucilaginous extractive matter.

Medical properties and uses.—Musk is stimulant and antispasmodic. Aëtius is the first writer who mentions it as a medicine; but it did not come into general use in this country till the beginning of the sixteenth century. It raises the pulse without much augmenting the heat of the body, and has a remarkable power of resolving spasm, and increasing the energy of the brain and nerves. Hence it is very efficaciously given in typhoid fevers, when low delirium, subsultus tendinum, and hiccough supervene; and in combination with ammonia to arrest the progress of gangrene. Its beneficial effects in all spasmodic diseases are well established; and Cullen says, he can vouch for its powers in retrocedent gout, which in many instances he had seen suddenly relieved by large doses of musk¹. It checks the vomiting in cholera, at the same time that it allays the tormina of the intestines. In epilepsy we have seen more benefit derived from musk in combination with calomel than from any other remedy; and we are inclined to attribute much of the disappointment which others have experienced, either to the remedy not having been genuine, or the smallness of the dose. To obtain the full benefit of musk in this disease,

¹ *Mat. Med.* ii. 381.

the dose must be much larger than what is usually given; it should be repeated at shorter intervals, and its use longer continued. In an old confirmed case, in which three and four fits were experienced daily, musk, given to the extent of ʒss four times a day, reduced the number of fits to one in three months. Upon the whole, we agree with Cullen "that musk is one of the most powerful antispasmodics we are acquainted with," and regret that the high price of the drug necessarily limits very much its employment.²

As a local remedy, musk is said to be useful in atonic deafness when inserted into the ear with cotton; and it is recommended in the form of enema in the convulsions of children arising from the irritation of dentition.

Musk is best given in substance, in the form of bolus. The dose may be from grs. vj to ʒj, repeated at intervals of six or eight hours.

Official preparations. *Mistura Moschi*. L. *Tinctura Moschi*. D. MYRISTICA. *Spec. Plant. Willd.* iv. 869.

Cl. 22. Ord. 13. Diœcia Monadelphia. Nat. ord. Lauri Juss.

G. 1851. Male. Calyx bell-shaped, trifid. Corolla 0. Filament columnar. Anthers six or ten united.

Female. Calyx bell-shaped, trifid, deciduous. Corolla 0. Style 0. Stigma two. Drupe, a nut involved in an arillus (Mace) with one seed.³

Species 1. *M. moschata*. The Nutmeg-tree. *Med. Bot.* 2d ed. 698.

t. 238. *Rumphius. Herb. Amboin.* ii. lib. 11. c. 5. t. 4.

Official. MYRISTICÆ NUCLEI. Lond. MYRISTICÆ MOSCHATÆ NUCLEI, INVOLUCRUM vulgo MACIS. Edin. NUX MOSCHATA; OLEUM ESSENTIALE, OLEUM EXPRESSUM, INVOLUCRUM MACIS DICTUM. Dub. Nutmeg; Mace; Oil of Nutmeg, essential and expressed; Oil of Mace.

Syn. of the nutmeg. Noix muscade (F.) Moskatnuse (G.) Nosce moscata (L.) Nuez moscada (S.) Jaëphal (H.) Jatiphalo (San.) Pela (Malay.)—Of the Mace. Moshat blumen (G.) Macis (L.) Macias (S.) Jawairi (H.) Jatipatri (San.) Benga pela (Malay.)

The nutmeg-tree is a native of the Molucca islands. It has, however, been nearly extirpated from the greater number of them by the narrow policy of the Dutch, and is cultivated at Banda⁴ only, where a sufficient quantity is reared to supply with mace and nutmegs the whole of Europe. It rises to the height of thirty feet, producing many erect branches, which, as well as the trunk, exude, when wounded, a red glutinous juice,

¹ *Mat. Med.* l. c. 380.

² A mixture of musk and cinabar in arrack is used by the Tonquinese as a remedy in hydrophobia. *Phil. Trans.* xlv. 78. No benefit has been derived from its use in this disease in this country, although it has been fairly tried.

³ In our description, we have followed Gaertner, who denominates the fruit "Bacca monosperma;" although, in our translation of the Generic character by Willdenow, we have not altered the term "Drupe."

⁴ This term includes six smaller islands, Neyra, Lenteira, Pulo-Aya, Goenenga, Apia, Pelerona, and Rossengenia; but the three first only bear nutmeg-trees.

and are covered with a smooth ash-coloured exterior bark. The leaves, which stand alternately on short petioles, are elliptical, pointed, undulated, entire, and obliquely nerved; of a bright green colour on the upper surface and grayish underneath, with an aromatic taste. The flowers are present at the same time with the fruit, inodorous, small, supported on axillary peduncles; and male and female on the same, and separate trees: the calyx in both is fleshy, smooth, and divided at the edge into three moderately spreading segments. There are no corollas. The filaments in the male flowers are short, united into one columnar bundle, inserted into the receptacle, and bear each a linear anther which surrounds the upper half of the filament. The germ in the female is superior, oval, and crowned with a style terminated by two stigmas. The fruit is an ellip-tico-spheroidal, one-celled, superior berry, marked with a shallow longitudinal groove on one side, fleshy, smooth, one-celled, and the size of a small peach; the flesh is thick, rather solid, and finally dries up to a coriaceous crust, which opens at one side, and displays the nutmeg in its shell covered with an aril-lus, which is the officinal *mace*, and by it fixed to the bottom of the cell. This is a fleshy, coriaceous, saffron, or yellow-co-loured substance, divided deeply into many slips, which closely invest the shell of the nutmeg. The kernel, which is the proper nutmeg, is of a roundish oval form, marked on the outside with many vermicular furrows, within, of a fleshy-farinaceous substance; variegated whitish and bay, and having a cavity at the bottom for the embryo.¹

The nutmeg-tree yields three crops annually: the first in April, which is the best; the second in August, and the third in December, yet the fruit requires nine months to ripen it. When it is gathered, the outer coriaceous covering is first stripped off, and then the mace carefully separated and dried in the sun. The nutmegs in the shell are next exposed to heat and smoke for three months, then broken, and the kernels thrown into a strong mixture of lime and water, after which they are cleaned and packed up. This process is necessary for their preservation, and with the same intention the mace is sprinkled with salt water. There are several varieties of the tree; but that denominated the Queen nutmeg, which bears a small round nut, is the best. They are imported in chests which contain each from 100 to 140lbs. weight; the mace comes in chests also of different sizes: the essential oil, which is obtained in Banda by the distillation of the nuts, is brought in bottles; and the expressed oil in stone jars.

¹ Gærtner de Fructibus, t. 41.

Qualities.—The nutmeg has a fragrant agreeable spicy odour, and a warm aromatic taste. It is easily cut with a knife, but not very pulverulent. When cut transversely, and examined by the microscope, the dark coloured veins which run through its substance appear to consist of cellular matter filled with oil, which is the active matter of the nutmeg. Alcohol and ether extract completely the active qualities of nutmeg. When the ethereal tincture, which is limpid, and of a golden yellow colour, is evaporated on water, a small portion of volatile essential oil unites with the water, and a white opaque granular sebaceous substance, heavier than water, which has much the appearance of the expressed oil, is deposited. When alcohol is digested on this substance, it dissolves very little of it, but becomes yellow, and acquires the qualities of a spirituous solution of the essential oil; the undissolved substance, if washed in water, is nearly insipid, melts at a temperature of 150° , and, on cooling, concretes into a translucent brittle cake which has the properties of wax. The part of the nutmeg insoluble in ether is chiefly gum and starch. In distillation with water, nutmegs yield $\frac{1}{7}$ of their weight of essential volatile oil, and by expression one-third of a sebaceous fixed oil.* Hence, the components of the nutmeg seem to be starch, gum, volatile oil, wax, and a fixed fat oil. The *volatile oil* possesses the odour and taste of the nutmeg in a concentrated degree, is of a pale straw colour, limpid, transparent, and lighter than water. The *expressed oil*, which is erroneously called *oil of mace*, when first drawn, is limpid and yellow, but on cooling acquires the consistence of spermaceti and somewhat of the appearance of Castile soap, being whitish, mottled with reddish brown. Its odour is agreeable and slightly aromatic, and its taste fatty, pungent, and bitterish. It appears to be a vegetable cerate, or a triple compound of fixed oil, volatile oil, and wax. Besides the genuine expressed oil, there are two other sorts found in the shops; one, which is said to come from Holland, of a paler colour, and in flat square cakes; and another, which is an artificial composition of suet, palm oil, and spermaceti scented with a little volatile oil of nutmeg. *Mace* resembles the nutmeg in its odour and taste, but is more pungent and bitter. It is in lacinated, flexible, thin pieces, unctuous to the feel, and of a deep reddish yellow colour. Alcohol and ether extract its active principles; and when the ethereal tincture is evaporated on water, a thick deep yellow coloured, very pungent, and odorous oil is left in drops on the surface of the water, with some resin; and a small portion of extractive is deposited, but no waxy granular matter.

* *Newman's Chemistry*, 404.

*Medical properties and uses.*¹—As the medical properties of nutmeg and mace depend on the essential oil they contain, they agree in these circumstances; and both are stimulant, carminative, and in large doses narcotic. Mace is more generally used as a culinary spice; but the nutmeg and its volatile oil are in frequent use to cover the disagreeable taste of other medicines; and are sometimes ordered in cases of languors, vomiting and diarrhœa, and in flatulent colic. On account of the narcotic property of the oil, nutmeg should be cautiously employed in apoplectic and paralytic habits. In India its dangerous effects have been frequently felt²; and in this country instances have occurred in which the nutmeg, taken in large quantity, produced drowsiness, great stupor, and insensibility; and, on awakening, delirium which alternated with sleep for several hours.³ The volatile oil is sometimes used as an external stimulant, and the expressed oil is seldom employed for any other purpose. The dose of the nutmeg and the mace is from grs. v. to ʒj; that of the volatile oil, m̄j, to m̄vj.

Official preparation. *Spiritus Myristicæ*. L. E. D.

MYROXYLON. *Spec. Plant. Willd.* ii. 546.

Cl. 10. Ord. 1. Decandria Monogynia. *Nat. ord.* Lomentaceæ
Linn. Leguminosæ Juss.

G. 829. *Calyx* bell-shaped, five-toothed. *Petals* five, the upper one larger than the others. *Germen* longer than the corolla. *Legume* with one seed only at the point.

Species 1. *M. peruvianum* Sweet-smelling Balsam-tree. *Hernandez Nova Plant. &c. Mexican. Hist. fol.* 51. *cum figura.*

Official. MYROXYLI PERNIFERI BALSAMUM. *Edin.* Peruvian Balsam.

Syn. Baume de Perou (*F.*) Peruvianischer Balsam (*G.*) Balsamo del Peru (*L.*) Balsamo de Quinquica (*S.*)

The Peruvian balsam tree is a native of the warmest provinces of the continent of South America.⁴ It is a very beautiful tree, with a smooth thick bark, which is very resinous, as is every part of the tree. The leaves are alternate and abruptly pinnate. The leaflets in two pairs, nearly opposite, petiolate, ovato-lanceolate, with the apex lengthened, blunt, emarginate, entire, veined, and very smooth. The midrib, which runs through the whole length of the under surface of the leaf, is raised and pubescent; the common petiole is round and pubescent. The flowers are scattered, on axillary erect racemes, longer than the leaves. The peduncles are roundish and pubescent; each supported by a small, erect, ovate, concave bracte, appearing to the naked eye like a tubercle. Pedi-

¹ Avicenna first noticed nutmegs as a medicine.

² *Bontius de Medicina Indorum.* 20.

³ Cullen, *Mat. Med.* ii. 204.

⁴ Mutis discovered it, and sent a branch of the tree to the younger Linnæus about the year 1781.

cels erect. The calyx is bell-shaped, hoary green, and surrounded by the petals and anthers, which are white, and containing within, a green legume that has a singular appearance in the flower. The substance of the leaves is full of translucent, linear, points, like the leaf of the orange-tree.

This tree yields by incisions made early in the spring, a liquid balsam, which is collected in bottles. What is found in the shops is obtained by boiling the twigs in water. It is imported in jars, each containing from twenty to forty pounds weight. A mixture of resin and some volatile oil with benzoïn is often sold for Peruvian balsam, and the fraud is not easily detected.

Qualities. — The balsam which we receive has a fragrant aromatic odour, much resembling that of benzoïn, with a warm bitterish taste, leaving a slight sensation of burning in the throat after it is swallowed, with some degree of sweetness. It is viscid, of a deep reddish brown colour, and of the consistence of fluid honey. Water boiled on the balsam becomes acidulated, and deposits on cooling crystals of benzoic acid. In distillation with water, a small portion of a volatile limpid oil is obtained, and benzoic acid sublimes in the neck of the retort. Its remaining matter is a resin. Ether in small quantity dissolves it readily and completely; alcohol also dissolves it, but the quantity of menstruum must be considerable. Sulphuric acid converts it into artificial tannin and charcoal. Treated with nitric acid, some prussic acid is evolved, benzoic acid sublimes, and the residual matter is artificial tannin.¹ The alkalis and their carbonates form with it thick masses, which, on the addition of sulphuric acid lets fall a resinous matter, and benzoic acid crystallizes. Hence Peruvian balsam appears to consist chiefly of a resin, volatile oil, and benzoic acid.

Medical properties and uses. — Balsam of Peru is stimulant and tonic. It has been regarded as expectorant also, and recommended in catarrh and other pulmonary affections; but it is contra-indicated wherever any inflammatory action is present; and to its stimulant operation on the pulmonary exhalants we may ascribe its use in chronic asthma and old obstinate coughs.² In gleet, leucorrhœa, palsy and chronic rheumatism, its tonic powers have proved beneficial; as well as in many other cases of debility. It may be given to the extent of fʒj for a dose. As a local stimulant it is employed externally with great advantage for cleansing and stimulating foul and indolent ulcers; and a mixture composed of ʒj of the

¹ Hatchet. *Phil. Trans.* 1806. Thomson's *Chemistry*, iv, ed. v. 126.

² Sydenham gave it in phthisis.

balsam and ʒiij of ox gall I have found extremely useful when dropped into the ear every day, after syringing with a solution of soap, in fetid discharges of the ear.

MYRRHA.¹ *Lond. Edin.* MYRRHA; GUMMI-RESINA.

Dub. Myrrh, a gum-resin.

Syn. Myrrhe (F.) Myrrhen (G.) Mirra (I.) Mirra (S.) Murr (Arab.) Ból (H.) Bóla (San.)

The tree or plant which produces this gum-resin is a native of the eastern coast of Arabia Felix, and of Abyssinia, growing, according to Mr. Bruce's account, behind Azab, along the coast towards the straits of Babelmandel. It is undescribed by naturalists; and the conjectures of Mr. Bruce in favour of its being a *Mimosa* are by no means satisfactory.² The appearance of the best myrrh, as we receive it, affords reasons for supposing that it is an exudation from the plant. It is imported in chests each containing from one to two hundred weight. The Abyssinian myrrh comes to us through the East Indies, while that produced in Arabia is brought by the way of Turkey.

Qualities.—Myrrh has a peculiar, rather fragrant odour, and bitter, aromatic taste. It softens in the mouth, adheres to the teeth when chewed, and is in small irregularly shaped pieces, which can scarcely be called tears; they are translucent, of a reddish yellow colour, brittle, breaking with a resinous fracture, and easily pulverized. It does not melt when heated, and is not very inflammable. Its specific gravity is 1.360.³ Such are the characters of good myrrh; but it is often opaque mixed with many impurities, and either white or of a dark colour approaching nearly to black, with a disagreeable odour, in which case it should be rejected.

Myrrh is partially soluble in water, alcohol, and ether. In distillation with water, it yields an oil heavier than water. When it is triturated with very soft or distilled water, nearly the whole appears to be dissolved, forming an opaque yellowish solution; but the greater part is deposited by rest, and not more than one-third of the gum-resin is actually dissolved. The alcoholic tincture is rendered milky and opaque when mixed with water, but no precipitate appears. Braconnot asserts, that 100 parts of myrrh consist of 23 resin and 77 gum⁴, but my experiments lead to a somewhat different conclusion, and accord more with those of Pelletier, who found the proportions to be, 34.68 of resin and 66.32 of gum. Ether digested on powdered myrrh dissolved three parts in eight,

¹ *Myrrha* Dioscoridis. The name *Myrra*, used by Hippocrates, is derived from *μυρον*, an ointment.

² *Phil. Trans.* lxx. 413.

³ Brisson.

⁴ *Annales de Chimie*, lxxviii. 52.

and the tincture evaporated on water deposited two grains and a half of very bitter resin, and half a grain of extractive matter, which also tasted bitter. The part insoluble in the ether was nearly all soluble in water, and afforded a solution resembling that of acacia gum; but differed from it in being precipitated by solutions of muriate of mercury and of superacetate of lead. When treated with nitric acid it yields oxalic acid. Hence myrrh seems to consist of resin, essential oil, extractive, and mucus rather than gum.

Medical properties and uses. — Myrrh is tonic and expectorant. In moderate doses it stimulates the stomach, promoting the appetite and digestion; but in large doses, increases the frequency of the pulse, and augments the general heat of the body.¹ As a tonic, it is efficaciously given in cases of debility, as amenorrhœa, chlorosis, and convalescencies; and in phthisis pulmonalis, when the inflammatory symptoms and hectic fever do not run high. Its use in phthisis has indeed been condemned by several physicians of great repute²; but when there is an evident ulceration of the lungs without much hectic, and the patient's strength is considerably reduced by the quantity of the expectorated matter, the proper exhibition of myrrh is certainly productive of much benefit. In the first-mentioned diseases, it is advantageously combined with aloes, cinchona, or other bitters, and chalybeates; and in phthisis, with nitre, digitalis, opium, camphor, and the sulphate of iron or of zinc. Combined with oxide of zinc it has been found extremely useful in the peculiar cough which sometimes accompanies pregnancy, and continues after abortion. As an expectorant it is often employed in humoral asthma and chronic catarrh; and with the same view also has been given in phthisical affections; but as it cannot be employed with propriety in pulmonic cases, where there is much inflammatory action or hectic present, any advantage derived from its use in phthisis probably depends altogether on its tonic operation counteracting the exhaustion produced by a copious purulent expectoration. As a local stimulant the alcoholic solution of myrrh diffused in water is used as a lotion in a spongy state of the gums, and for correcting the fœtid discharge of vitiated ulcers, particularly when connected with caries of the bone; and as a gargle in cynanche maligna.

Myrrh is administered in substance, or in the form of watery infusion, or a tincture properly diluted. A watery extract is ordered in some foreign pharmacopœias, and preferred by many physicians, from an idea that it is less heating than the

¹ Cullen, *Mat. Med.* ii. 193.

² Cullen. Fothergill.

gum resin; but it is equally bitter, and is perhaps not different from a diminished dose of the myrrh.

Official preparations. *Tinctura Myrrhæ* L. E. D. *Tinctura Aloes et Myrrhæ*. E. *Pilulæ Aloes cum Myrrhæ*. L. E. D. *Pilula Ferri cum Myrrhæ*. L.

MYRTUS. *Spec. Plant. Willd.* ii. 967.

Cl. 12. Ord. 1. Icosandria Monogynia Nat. ord. Hesperideæ Linn.

Myrti Juss.

G. 973. *Calyx* five-cleft, superior. *Petals* five. *Berry* two or three-celled, many seeded.

Species 28. *Myrtus Pimenta*. Pimenta, or All-spice tree. *Med. Bot.* 2d. ed. 541. t. 194.

Official. PIMENTÆ BACCÆ. Lond. MYRTÆ PIMENTÆ FRUCTUS Edin. PIMENTO; (*Piper Jamaicense*) BACCÆ. Dub. Pimenta Berries. Jamaica Pepper.

Syn. Poivre de Jamaïque (F.) Nelhenpfeffer (G.) Pimenti (I.) Pimienta (S.)

This tree is a native of South America and the West India islands. It grows in great plenty on the hilly parts, on the north side of the island of Jamaica; flowering in June, July, and August, and soon afterwards ripening its fruit. It is a handsome tree, rising in height about thirty feet, straight, branching, and covered with a very smooth gray bark. The leaves, which are supported on footstalks at the ends of the twigs, are elliptical, pointed, of different sizes, but the largest five inches long, and two broad in the middle, smooth, thin, entire, shining, and of a deep green colour; the flowers are produced in terminal bunches, or rather trichotomous panicles: the calyx is four-cleft; the petals four, reflected, of a pale green colour, inclosing many longer spreading filaments of the same colour, supporting pale yellow roundish anthers: the fruit is a spherical berry, crowned with the persistent calyx; when ripe black, or dark purple, smooth, shining, and bilocular, with the seeds enveloped in a moist, green, pungent, aromatic pulp.¹

The fruit, which is the part of this plant medicinally used, is gathered before it is ripe², and exposed to the sun for many days, spread thin upon cloths. They require to be frequently turned, and carefully preserved from the dews. By degrees, under this management, they become wrinkled, and change from green to a brown colour; after which they are packed in bags and hogsheads for the European market. The more fragrant and smaller they are, the better they are accounted.³

Qualities.—Pimenta has an aromatic, agreeable odour, resembling that of a mixture of cinnamon, cloves, and nutmegs, with the warm pungent taste of the cloves; qualities which

¹ Sloane, *Phil. Trans.* xvii. 462.

² When the berries ripen, they lose much of the aromatic warmth for which they are esteemed, and acquire a taste similar to that of juniper berries.

³ Sloane, l. c.

reside chiefly in the cortical part of the dried berry. Water, alcohol, and ether extract its virtues. The watery infusion is of a brown colour, and reddens litmus infusion. With solution of sulphate of iron it immediately strikes a deep black colour, and slowly lets fall a precipitate. Nitrate of mercury precipitates it of a yellowish brown; superacetate of lead of a dirty green; and nitrate of silver of a deep reddish brown colour. It is also precipitated by infusion of yellow cinchona bark. The sulphuric and muriatic acids redden it, and throw down pale rose-coloured precipitates. The nitric acid forms no precipitate, but gives it a yellow hue. The alcoholic tincture is rendered milky, and slowly precipitated by water: the ethereal, when evaporated on water, deposits drops of a greenish yellow volatile oil, a pellicle of a pungent nauseous tasted resin, and some extractive. Hence pimenta appears to contain a volatile oil, resin, extractive, tannin and gallic acid.

Medical properties and uses. — Pimenta is stimulant and tonic. It is useful as an adjunct to bitters in dyspepsia attended with much flatulence, and in arthritic and hysterical affections. The watery infusion of it sweetened with sugar, and with the addition of a little milk, is very readily taken by children; and is an excellent cordial in malignant measles, scarlatina, confluent small-pox, and the other exanthemata, when the fever assumes the typhoid type. But the principal use of pimenta in medicine is to cover the disagreeable taste of other remedies, or to give them warmth. The dose of the berries is from gr. v. to ʒij in powder, or swallowed in their entire state.

Official preparations. *Aqua Pimentæ*. L. E. D. *Oleum Pimentæ*. L. E. D.

NICOTIANA. *Spec. Plant. Willd.* i. 1014.

Cl. 5. *Ord.* 1. Pentandria Monogynia. *Nat. Ord.* Luridæ Linn. Solanææ Juss.

G. 379. *Corolla* funnel-shaped with the border plaited. *Stamens* inclined. *Capsules* two-valved, two-celled.

Sp. 1. *N. Tabacum*.¹ Tobacco. *Med. Bot.* 2d ed. 208. t. 77.

Official. TABACI FOLIA. *Lond.* NICOTIANÆ TABACI FOLIA. *Edin.*

NICOTIANÆ FOLIA. *Dub.* Tobacco leaves.

Syn. Tabac (F.) Taback (G.) Tabacco (I.) Tobaco (S.) Bujjirbhang (Arab.) Tam-bacu (H.) Tāmracuta (San.)

Tobacco is an annual plant, a native of America, and par-

¹ This plant was first discovered by the Spaniards in Yucatan in 1520, and was there called *petun* or *petum*. It was afterwards transported to the West Indies and North America; and brought to Europe by Hernandez de Toledo, who came from Florida to Portugal in the beginning of the 16th century. The seeds were sent from Portugal to Catherine de Medicis by Jean Nicot, an agent of Francis II., after whom it received its generic name Nicotiana: the specific appellation being taken either from *tabac*, the name of an instrument used by the natives of America in the preparation of the herb; or *Tabaco*, the name of a Mexican province.