

more supportable the paroxysm of spasmodic asthma. The infusion has been used as an emetic; but the practice cannot be recommended: and notwithstanding the success of Dr. Fowler¹, who employed it in dropsy and dysury; its general effects are too violent for internal exhibition, and it is not equal as a diuretic either to squill or foxglove, which are more manageable remedies. In dysury, however, as Dr. Pearson has observed, its antispasmodic properties are of advantage, and consequently its use in that complaint is less objectionable.² The external application of a strong infusion of tobacco, or of a cataplasm of the moistened leaves themselves, is sometimes employed as a local stimulant in porrigo, scabies, and some other cutaneous eruptions; but even in this mode of using it, tobacco is apt to induce the same virulent effects as when it is internally administered in large doses.

But tobacco is chiefly employed as a sternutatory, and is the basis of all the kinds of snuff generally used. The powdered leaves, when snuffed up the nostrils of those unaccustomed to the use of snuff, excites vehement sneezing, and promotes a considerable discharge from the nostrils, answering all the purposes for which errhines are employed. As a luxury snuff has been used upwards of two hundred years in Britain, and has been taken in great quantities without any perceptible bad consequence; although it has been asserted that its immoderate use weakens the sight, produces lethargy, and gives a tendency to apoplexy. After the use of it has become habitual, it cannot be relinquished without considerable risk, arising from the suspension of the artificial discharge it produces, as Dr. Cullen observed from his own experience.³

The London College has given a formula for an infusion proper to be used as an enema; as a diuretic, that employed by Dr. Fowler is made with ʒj of the dried leaves, and ʒj of boiling water, and given in doses of ʒlx to ʒlxxx, twice a day. Official preparations. *Infusum Tabaci*. L. *Vinum Nicotianæ Tabaci*. E.

OLEA. *Spec. Plant. Willd.* i. 44.

Cl. 2. Ord. 1. Diandria Monogynia. Nat. ord. Separiæ Linn. Jasmineæ Juss.

G. 36. Corolla four-cleft, with subovate segments. *Drupe* one-seeded. *Species* 1. *O. Europæa*.⁴ European Olive. *Med. Bot.* 2d. ed. 280. t. 93. *Silthorp Flora Græca*, t. 3.

Official. OLIVÆ OLEUM. *Lond.* OLEÆ EUROPEÆ OLEUM FIXUM. *Edin.* OLEUM OLIVARUM. *Dub.* The oil of the olive.

Syn. Huile d'Olive (F.) Olivenöl (G.) Olio d'Ulive (I.) Azeite (S.)

¹ *Med. Reports on the Effects of Tobacco, &c.*

² *Practical Synopsis, &c.* 229.

³ *Materia Medica*, ii. 437.

⁴ *Ελαια αγραια* Dioscoridis.

The olive tree is a native of the south of Europe and the north of Africa; but is cultivated in great abundance in France, Spain, and Italy. It has been cultivated in the open air in England, but its fruit has never been ripened.¹ It grows upon the most rocky soil, seldom exceeds twenty feet in height; and has a solid, upright stem, covered with a gray bark, and very branching: the leaves are evergreen, opposite, spreading, nearly sessile, stiff, lanceolate, from two to three inches long, and half an inch broad in the middle, with the margin a little turned back; of a full green colour, smooth and even on the upper surface, and white or hoary below. The flowers are in opposite axillary clusters, half the length of the leaves, on short flower stalks, with small, concave, obtuse, hoary bractes: the calyx is deciduous, four-cleft, and regular: the corolla white, four-parted, regular, spreading, with ovate, obtuse, obscurely three-nerved segments; the stamens are shorter than the corolla, divaricated, supporting large pale yellow elliptical anthers: the stigma bipartite on an erect style, rising from a roundish superior germen: the fruit is a smooth, oval plum or *drupe*, about three-fourths of an inch in length, and half an inch in diameter; of a deep violet colour when ripe, whitish and fleshy within, bitter and nauseous, but replete with a bland oil²; and covering an osseous, oblong, pointed, rough nut.

There are several varieties of the olive tree, of which the variety γ or *longifolia* of Willdenow is most esteemed, as affording the best oil. The mode of obtaining the oil from the ripe fruit was known very early in Egypt; and it is chiefly for this purpose that the tree is now cultivated in Spain, Provence, and Italy. To procure the oil, the ripe fruit is gathered in November, and immediately bruised in a mill, the stones of which are set so wide as not to crush the nut. The pulp is then subjected to the press in bags made of rushes, and by means of a gentle pressure the best oil, which is called virgin oil, flows first: a second sort is got by breaking the marc, moistening it with warm water, and returning it to the press; and lastly, a very inferior kind is obtained, either by boiling the magma, or by breaking, moistening, and fermenting it in large cisterns, and again submitting it to the full force of the press. When the olive is not sufficiently ripe, the recent oil has a bitterish taste, and when too ripe is fatty. After the oil is drawn, it deposits by standing a white fibrous albuminous matter; from this the clear oil is poured off, and a second deposition takes place; after which, if put into clean glass flasks, there is no further alteration.

¹ *Miller's Gardener's Dictionary*, ed. 1797. Art. *Olea*.

² The unripe fruit, when pickled in a strong solution of common salt, is a well-known luxury of the table.

The best oil is made in Provence; its excellence arising from the olives being carefully cleaned and garbled; but what we receive in this country comes from Lucca and Florence. Sicily also furnishes some; but it has a resinous flavour¹; and good oil has lately been brought from Samos. It is imported in jars, half-jars, and what are called half-chests, which are wooden packages containing flasks.

Qualities.—Pure olive oil is an insipid, inodorous, pale greenish yellow-coloured, viscid fluid; unctuous to the feel; inflammable, incapable of combining with water, and nearly insoluble in alcohol. It is fixed in any temperature under 600°, suffering considerable expansion, but not evaporating; and congeals at 38° of Fahrenheit. It is the lightest of the fixed oils; its specific gravity being 0.9153. When kept for a great length of time, or much exposed to the air, its components² are partially separated, the sebatic acid and water are formed, and the oil acquires a disagreeable smell and sharp taste, becomes thick, brown-coloured, and is then said to be rancid. The rancidity is hastened by heat, and by the admixture of poppy oil, with which it is often adulterated.

Medical properties and uses.—Olive oil is demulcent, relaxant, and laxative. It is used internally as a demulcent in catarrh and other pulmonary affections, diffused in water by means of mucilage; and is also given internally, in large quantities, to mitigate the action of acrid substances, as some poisons, taken into the stomach; and in cases of worms. Externally applied it is a very useful relaxant, and instead of stopping up the cutaneous exhalants, appears to promote the excretion of sweat; on which account it has been employed with great advantages in frictions in the commencement of plague. The body is ordered to be very briskly rubbed all over with a clean sponge dipped in warm olive oil: copious perspiration generally follows, and the operation must be repeated once a day until symptoms of recovery appear. Mr. Jackson relates, that the Coolies who are employed in the oil stores at Tunis smear themselves all over with oil, and are seldom afflicted with the plague when it rages in that city³; an effect which may be owing to the oil forming a coating to the skin, so that it cannot come directly in contact with the contagion. Frictions with it are useful in ascites. It is also used as an injection in gonorrhœa; as an adjunct to glysters in dysentery, and

¹ This flavour has been ascribed to the Sicilian olives being grown on dry hilly situations. *Galt's Letters from the Levant*, svo. p. 129.

² Vide *Expressed Oils*.

³ *Reflections on the Commerce of the Mediterranean*, p. 64.

⁴ Lord Bacon, speaking of Inunction, says, — "Ante omnia igitur usum olei vel

intestinal abrasions, and extensively in pharmacy, in the composition of ointments, cerates, and plasters.

The dose of olive oil is from f3j to f3j, triturated with mucilage, or mixed with water by means of a few drops of solution of potash. In cases of poisons or of worms, as much may be given as the stomach can bear.

ONISCUS. *Syst. Nat. Gmelin. v. 3009.*

Cl. 5. Ord. 7. Insecta Aptera.

G. 272. Jaw truncated, toothed. Lip bifid. Palpi unequal. Feelers bristly. Body oval. Feet fourteen.

Sp. 14. *O. asellus*.² Slaters.

Officinal. MILLEPEDÆ; SPIRITUS VINI VAPORE ENECATÆ. *Dub.*
Slaters killed by the vapour of spirit of wine.

Syn. Cloporte (F.) Kellerwürmer (G.)

These insects are found on roofs of houses, old walls, and under stones; they are rather more than half an inch in length, whitish on the belly, with seven pairs of legs, each terminated by a sharp horny claw. The head is somewhat pyramidal, and furnished with two articulated feelers; and the whole of the animal on the upper part is guarded by a callous brownish livid-coloured jointed armour, consisting of fourteen semicircular scales, within which the insect rolls itself like a ball when touched. Like some other insects it casts the skin, and carries the young in valvular follicles under the abdomen. Slaters are prepared by hanging them inclosed in a canvas bag, in the steam of hot alcohol, till they are killed.

Qualities. — Prepared slaters have a fetid odour, and a sweetish nauseous taste; on analysis they furnish an alkaliescent fluid and an inert oil.

Medical properties and uses. — These insects were formerly regarded as expectorant, and diuretic; and used in humoral asthma, dropsy, jaundice, and a long list of diseases. The retention of them in the list of materia medica exhibits the remains of a barbarous practice, which the good sense of modern practitioners should altogether explode. Their value as a medicine was justly estimated by professor Alston, when he observed, "Upon the whole there is reason to think Millepedarum 3j is good for nothing; and ʒls not much worth."

OPIUM. See *Papaver*.

OPOPONAX. See *Pastinaca*.

ORIGANUM. *Spec. Plant. Wild. iii. 132.*

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

G. 1116. Strobile four-cornered, spiked, collecting the calyces. *Co-*

olivarium vel amygdali dulcis, ad cutem ab extra unguendum, ad longevitatem conducere existimamus. *Opera*, fol. 1665. p. 536.

¹ *Oniscus* Discoridis.

² *Lectures on Mat. Med. ii. 496.*

rolla with the upper lip erect and flat, the under three-parted, with the segments equal.

Species 10. *O. vulgare*.¹ Common Marjoram. *Med. Bot.* 2d. ed. 344. t. 123. *Smith Flor. Brit.* 639. *Engl. Bot.* 1143.

Species 15. *O. Majorana*. Sweet Marjoram. *Med. Bot.* 2d edit. 345. t. 124.

1. ORIGANUM VULGARE.

Officinal. ORIGANUM. *Lond.* Common Marjoram leaves.

Syn. Oriang (F.) Dort, Wohlgenuth (G.) Origano (I.) Origano Sylvestre (S.)

This plant is indigenous and perennial, growing on dry chalky and gravelly hills, flowering from July to September. The root is creeping and fibrous, sending up erect, branching, trichotomous, tetragonous stems, about eighteen inches in height, downy, and of a purplish hue. The leaves are ovate, entire, somewhat hairy, ciliated, punctured, and of a deep yellowish green colour. The flowers are in terminal panicles, of a pink-purple or rose colour, and furnished with ovate, sessile, brownish-red bractes. The calyx is tubular, toothed; the segments being nearly equal: the corolla is funnel-shaped, with the upper lip bifid and obtuse, and the under trifid, blunt, and spreading. The filaments are furnished with double anthers, and the style is filiform, with a bifid reflected stigma.

Qualities. — The odour is agreeable and aromatic, and the taste warm and pungent, much resembling thyme. In distillation with water it affords a very acrid penetrating volatile oil, on which its qualities depend.

Medical properties and uses. — Common marjoram is regarded as tonic, stomachic, and emmenagogue. It was formerly used in debilities of the stomach; but is now neglected. The dose is from grs. x. to ʒj, in powder.

Officinal preparation. *Oleum Origan.* L.

2. ORIGANUM MAJORANA.²

Officinal. ORIGANI MARJORANÆ HERBA. *Edin.* MAJORANA; HERBA. *Dub.* Sweet Marjoram.

Syn. Marjolaine (F.) Majoran (G.) Maggiorana (I.) Origano (S.)

This is an annual plant, a native of Portugal and Syria; but cultivated in our gardens for culinary and medicinal purposes, and flowering in July and August. The root is long, brown, and fibrous; the stems numerous, woody, branching, and rising a foot and a half in height. The leaves are downy, entire, ovate, petiolate, and of a pale green colour. The flowers are small, white, appearing successively among the bractes, which are numerous, and form roundish, compact, terminal spikes. The calyx is tubular, five-toothed, with the teeth acute: the corolla funnel-shaped and bilabiate; the upper lip erect and roundish; the lower cut into three pointed segments.

¹ *Σαμψύρον* Dioscoridis.

² *Ορίγανος* Dioscoridis.

It is cut for medicinal use when it begins to flower in July.

Qualities.—The odour is pleasant, and the taste moderately warm, bitterish, and aromatic. Both alcohol and water extract the virtues of sweet marjoram; and in distillation with water it yields a large portion of volatile oil, which, on being long kept, becomes solid.

Medical properties and uses.—Sweet marjoram is tonic, and was formerly regarded as possessing errhine powers. It is scarcely ever used except as a culinary herb, or as an adjunct to cephalic snuffs, to which, however, it adds no efficacy.

OSSA. Bones. *Edin.*

Syn. Des Os (F.) Knochen (G.) Ossi (I.) Huesos (S.)

The bones of animals are composed of earthy salts, gelatin, albumen, and oil. According to the analysis of Fourcroy and Vauquelin, the components of ox bones are, in 100 parts, 51 of animal matter, 37.7 of phosphate of lime, 10 of carbonate of lime, and 1.3 of phosphate of magnesia. Besides these M. Hatchett detected sulphate of lime, and Berzelius some fluuate of lime in bones.

OSTREA. *Syst. Nat. Gmelin. vi. 3315.*

Cl. 6. Ord. 3. Vermes Testacea.

G. 313. Animal Tethys. Shell bivalve; the valves unequal, and somewhat eared. *Hinge* toothless, but furnished with an ovate hollow cavity, with lateral transverse furrows. *Vulva*, or anus, none.

Species 105. O. edulus. The common Oyster. *Pennant's British Zoology, iv. 102. t. 62.*

Officinal. TESTÆ. Lond. The shells.

Syn. Ecailles des Huitres (F.) Austerschaalen (G.) Conchiglia d'Ostrica (I.) Cascara (S.)

This well-known shell-fish inhabits the European and Indian oceans throughout; and is particularly plentiful on the British coasts, which were early famed for producing the best oysters to supply the stews of ancient Rome, in the most luxurious period of its history.¹ They are naturally attached to shelving rocks; but for the facility of always obtaining them for the purposes of aliment, they are generally laid down near the shore. They are hermaphrodite, and throw out a spat in spring which gradually enlarges to a perfect oyster. The nature of the shell in some degree, and the taste and goodness of the fish, depend on the soil of the bed; they are tender and friable on a calcareous bottom, thick and solid on rocks, more glutinous on marle, and oily and luscious on a slimy bed. The green colour of those fed in pits on the coast of Holland has been supposed to be owing to copper; but it arises from a species of

¹ Sergius Ovata was the inventor of stews for oysters among the Romans. *Pliny, lib. xiv. cap. 54.*

conferva which covers these stagnant pools.¹ The best oysters on the British shores are found at Purfleet, the worst near Liverpool. The oyster, when good, is very digestible and nutritious, particularly when eaten raw; and forms an excellent article of food for the phthisical, and convalescents. When they are sick, which is known by a black substance on the fringe or fin, or a very milky appearance of it, they are unwholesome. The shells only are officinal.

Qualities.—Oyster shells consist of alternate layers of carbonate of lime and an animal matter supposed to be coagulated albumen. When thrown into a fire, they emit a great deal of smoke; the animal matter is destroyed, and the carbonic acid dissipated in the form of gas, while pure lime remains.

Medical properties and uses.—Oyster shells are antacid; but as in their unburned state they are less so than chalk, and when burned differ in nothing from lime; their retention in the list of materia medica is unnecessary.

Officinal preparation. *Testæ præparatæ*. L.

OVIS. *Syst. Nat. Gmelin.* i. 197.

Cl. 1. Ord. 5. Mammalia Pecora.

G. 31. Horns concave, rough, inclined outwards, and spirally twisted. Cutting teeth eight in the lower jaw. Tusks none.

Species. 1. *O. Aries*. The Sheep. *Buffon Hist. Nat.* v. p. 1. t. 1, 2.

Officinal. SEVUM. *Lond.* ADEPS OVILLUS. *Edin.* SEVUM; OVILLUM. *Dub.* Mutton Suet.

Syn. Graisse de Mouton (F.) Hammeltalg (G.) Grasse duro (I.) Grassa. (S.)

The sheep is too well known to require any description. It is an inhabitant of almost every climate, and delights in dry, saline, moderately elevated and warm pastures. It is the most innocent, simple, and timid of quadrupeds: scarcely ever living beyond fourteen years of age; yet liable to many diseases. There are several natural varieties of the sheep in the British islands, the largest of which is found in Lincolnshire, and the smallest in Zetland; and the number of these is much increasing by the cross breeds which, for the improvement of the wool and flesh, are annually effected. Mutton is less dense than beef, very digestible and wholesome, and is at its greatest perfection when about five years old. It is very much improved by the castration of the animal, and is then called wether mutton. The broth made of it does not agree so well as light beef tea or veal tea, with delicate and weakened stomachs, but it forms an excellent emollient enema in cases of ulceration or abrasion of the rectum; and in that state of the bowels of in-

¹ Beckman's Observations, *Phil. Mag.* vi. 97. In Scotland, oysters laid down to feed near the salt-works on the shore, attain a large size and a great richness of flavour: they are called Pandoors, and are much esteemed.

² Περίκαρον *Aristot. Hist. Animal.* v. cap. 11.

phants which occasions green stools and aphthæ.¹ The suet, which is the officinal part of the animal, is chiefly obtained from about the kidneys and loins.

Qualities.—Suet is the most consistent of the real animal fats. It is white, has some degree of brittleness; is inodorous, and requires a temperature of 127° Fahrenheit to melt it. In other respects, it agrees with the other animal fats. (See the qualities of fat under *Sus scrofa*.)

Medical properties and uses.—Like the other fats, suet is emollient. It is sometimes boiled in milk in the proportion of 3ij of the suet to Oj of milk; and a cupful of the mixture given occasionally in chronic diarrhœa, when there is much acrimony of the contents of the bowels; but its principal use is to give consistence to ointments and plasters.

Officinal preparation. *Sevum preparatum*. L.

OVUM. See *Phasianus*.

OXALIS.² *Spec. Plant. Willd.* ii. 772.

Cl. 10. Ord. 5. Decandria Pentagynia. Nat. ord. Gruinales Linn. Gerania Juss.

G. 918. Calyx five-leaved. Petals connected by claws. Stamens unequal, the five shorter exterior ones connected at the base.

Capsules opening at the corners, five-cornered.

*** leaves ternate, scape one-flowered.

Species 25. O. *Acetosella*. Wood-sorrel. *Med. Bot.* 2d edit. 563. t. 201. *Smith Flor. Brit.* 491. *Jacquin's Oxalis*, 114. t. 80. f. 1.

Officinal. ACETOSELLA. Lond. Wood-sorrel.

Syn. Oseille des Bucherons (F.) Sauerblee (G.) *Acetosa salvatia* (L.) *Oxalide arderilla* (S.)

This is an indigenous perennial plant, found in woods, under hedges and other shaded places, and flowering in April and May. The root is horizontal, toothed, fleshy, and of a reddish colour. The leaves are all radical, ternate like the trefoil, and petioled; with the leaflets obcordate, very entire, hairy, of a yellowish green colour, and purplish underneath. The scape or flower-stalk is furnished with two scaly bractes, placed about an inch and a half beneath the flower, which is sub-nutant, delicate, and of a flesh colour streaked with red. The calycine leaflets are oblong, oval, acute, ciliated, and purple at the tip. The corolla is bell-shaped: with the claws of the petals upright, and the borders obovate, rounded, and spreading: the filaments are somewhat connate at the base, and furnished with oblong incumbent anthers; and the styles smooth, rising from an ovate germen. The capsule is membranous, and contains two seeds in every cell. Each seed is invested with a fleshy

¹ The milk of the ewe is seldom used either as aliment or medicine. It contains more cream and less whey than cow's milk, but the butter yielded by it never acquires a proper consistence. It is made into cheese in Scotland, which is bitterish; and when old warm and biding. It resembles Parmesan cheese.

² *Oxalis* Dioscoridis.

white aril; at first smooth and closed on every side, but at length, opening at the apex elastically, it rolls back and throws off the seed with considerable force.¹

Qualities.—This plant is inodorous, and has a pleasant acidulous taste. The expressed juice reddens vegetable blues; coagulates milk, and instantly precipitates lime from its solutions. Its active principle is superoxalate of potash, which is obtained crystallized from the expressed juice, and sold in the shops under the name of *Essential salt of lemons*.² The same salt may be formed by cautiously dropping a solution of potash into a saturated solution of the oxalic acid, obtained from sugar by the action of the nitric acid; the superoxalate precipitates as soon as the proper quantity of alkali is added.³

Medical properties and uses.—Wood-sorrel is refrigerant and antiseptic. Boiled with milk it forms a pleasant whey, which may prove a useful refrigerant in fevers, as may also the expressed juice, or the superoxalate obtained from it diluted with water: but although they are much extolled in inflammatory, bilious, and putrid cases, by the continental physicians, yet their place is well and easily supplied by lemon juice, or the citric acid, dissolved in water. The recent herb eaten as a salad, may be serviceable in scorbutic affections.

PAPAVER. *Spec. Plant. Willd.* ii. 1144.

Cl. 13. Ord. 1. Polyandria Monogynia. *Nat. ord.* Rhœadææ Linn. Papaveracæ Juss.

G. 1015. Corolla four-petalled. Calyx two-leaved. Capsule one-celled, opening by pores under the persistent stigma.

** with smooth capsules.

Sp. 5. *P. Rhœas*. Corn or Red Poppy. *Med. Bot.* 2d edit. 387. t. 139. *Smith Flora. Brit.* 567. *Eng. Bot.* 645.

Sp. 7. *P. somniferum*. White Poppy. *Med. Bot.* 2d edit. 376. t. 138. *Smith Flora. Brit.* 568.

1. PAPAVER RHŒAS.⁴

Officinal. RHŒADES PETALA. *Lond.* PAPAVER ERRATICUM; PETALA. *Dub.* Petals of the Red Poppy.

Syn. Coquelicot (F.) Klatschrossen (G.) Passavero salvatico (L.) Adormidera sylvestre; Amapola (S.)

This species of the poppy is an indigenous annual, growing in the greatest abundance in corn-fields, and waste places, and flowering in June and July. The stem rises about a foot in height, is branched, and every where furnished with stiffish

¹ *Gærtner de Fructibus*, ii. 152. t. 113. fig. 5.

² This salt is prepared on the continent by the following process: 'The juice is allowed to subside after being slightly heated, and then clarified by adding to it water, in which a small portion of fine clay is suspended. This clarified juice is next boiled till a pellicle forms on its surface, and put aside for a month to crystallize; the operation being repeated until the whole of the salt is obtained, when it is purified by a second crystallization. *Annales de Chimie*, xiv. 7. The essential salt of lemon of the shops is generally one half cream of tartar.

³ *Crell's Annals*, (trans.) i. 107.

⁴ *Peires Dioscoridis*.

horizontally spreading hairs. The leaves are sessile, pinnatifid, sometimes doubly so, serrated or cut, and generally hairy. The flowers are solitary, on slender hairy peduncles; the calyx consists of two ovate, rough, concave leaves, which fall before the petals expand; these are four, large, roundish, unequal, and spreading, of a full bright scarlet colour, and sometimes marked with a black spot at the base. The germen is ovate, smooth, with a convex, sessile, shield-like stigma, scalloped on the edge, having many purple-coloured rays; and becomes an urn-shaped capsule.*

The petals must be gathered when they begin to blow, as they very soon drop after they are fully expanded.

Qualities.—They have a faint narcotic odour, and a mucilaginous, very slightly bitter taste. They yield their colouring matter to warm water; and on this account only are used, as they cannot be said to possess any anodyne properties.

Official preparation. *Syrupus Rhocades. L. D.*

2. PAPAVER SOMNIFERUM.

Official. PAPAVERIS CAPSULÆ. OPIUM. *Lond.* PAPAVERIS SOMNIFERI CAPSULÆ. OPIUM. *Edin.* PAPAVER ALBUM; CAPSULÆ; OPIUM; SUCCUS CONCRETUS. *Dub.* Poppy capsules or heads; and Opium.

Syn. Capsules des pavots blancs; Opium (*F.*) Capi del Papavero; Oppio (*I.*) Adormideras; Opio (*S.*) Afecoon (*Arab.*) Afion (*H.*)

The somniferous or white poppy is a native of Asia; and although it is found growing wild in the southern parts of Europe, and even in England, yet, there is every reason for thinking, that its seed must have been carried to these parts. It was very early cultivated in Greece, perhaps, at first solely for the sake of its seed, which was used as food¹; and in the present age, not only on account of the opium, for which it is reared in Turkey and India, but also on account of the capsules, and of the bland oil obtained from the seeds, the poppy is extensively cultivated in most of the states of Europe.³ It is an annual plant, flowering in July, with a glaucous coloured, smooth, erect, round stem, rising to the height of five or six feet, when in a favourable situation. The leaves are large, simple, obtuse, lobed and crenated, and embracing the stem on which they are alternately placed. The flowers are large and terminal; the calyx is formed of two smooth, ovate, bifid, con-

¹ This form of capsule easily distinguishes it from *Papaver dubium*, which has a long narrow capsule, but in other respects closely resembles the corn poppy.

² Homer notices it under the name of *μῆκων*, as a garden plant; and it is said to be nourishing, by Hippocrates: the seeds are not narcotic.

In England, it has been cultivated for the purpose of obtaining opium; and a Mr. Ball, in 1796, received a premium from the Society for the Encouragement of Arts, for a specimen of British opium little inferior to the Oriental; but the project of making opium in this country has not been pursued to any useful extent. *Transactions of the Society of Arts*, xiv. 260 to 270.

cave leaves, that drop on the expanding of the petals; which are four in number, large, roundish, entire, somewhat undulated and white: the filaments are very numerous, slender, shorter than the corolla, and support erect, compressed anthers; and the germen, which is globular, is crowned with a many-rayed stigma. The capsule, which stands on a short pedicel, is globular when well grown, from three to four inches in diameter, a little flattened at the top and bottom, and crowned with the persistent stigma, the segments of which stand erect, and have an elegant appearance. The seeds are small, and very numerous.

All the parts of the poppy contain a white opaque narcotic juice; but it abounds more in the capsules: hence these are the only officinal parts of the plant, and for them chiefly is the plant cultivated in this country. They are gathered as they ripen; and as this happens at different times, there are annually three or four gatherings. They are brought to market in bags, each containing about 3000 capsules, and sold to the druggists.¹

The milky juice of the poppy in its more perfect state, which is the case in warm climates only, is extracted by incisions made in the capsules, and inspissated; and forms the opium of commerce. The plants during their growth are carefully watered and manured, the watering being more profuse as the period of flowering approaches, and until the capsules are half grown, when it is discontinued, and the collection of the opium commences. At sun-set, longitudinal incisions are made upon each half-ripe capsule, passing from below upwards, and not penetrating to the internal cavity. The night dews favour the exudation of the juice, which is collected in the morning by old women and children, who scrape it from off the wounds with a small iron scoop, and deposit the whole in an earthen pot, where it is worked by the hand in the sunshine, until it attain a considerable degree of spissitude. It is then formed into cakes, which are laid in earthen basins to be further exsiccated, when it is covered over with poppy or tobacco leaves.² Such is the mode followed in India, and according to Kämpfer's account nearly the same is practised in Persia: and when the juice is drawn in a similar manner in this country, and inspissated, it has all the characters of pure opium.

Opium is brought to this country in chests from Turkey and India. The *Turkey opium* is in flat pieces, covered with leaves, and the reddish capsules of some species of rumex, which is considered an indication of its goodness, as the inferior kinds of opium have none of these capsules adhering to them. Tur-

¹ The London market is chiefly supplied from Mitcham in Surry. The average price of each bag containing 3000 capsules, is about 4*l.* 10*s.*—*Stevenson's Survey*, 382.

² *Med. Observ. and Inquiries*, v. 317.

key opium generally contains about one-fourth part of impurities. *East Indian opium* is in round masses, covered with successive layers of leaves, to the thickness nearly of $\frac{1}{4}$ th of an inch. Mr. Kerr relates, that at Bahar it is frequently adulterated with cow-dung, the extract of the poppy procured by boiling, and various other substances. In Malava it is mixed with oil of sesamum, which is often one half of the mass: ashes and the dried leaves of the plant are also used.

Opium is regarded as bad when it is either very soft or friable, of an intensely black colour, or mixed with many impurities. A weak or empyreumatic odour, sweetish taste, or the power of marking, when drawn across paper, a brown continuous streak, are also symptoms of inferior opium.

Qualities. — 1. *The dried capsule* of the poppy is inodorous, and nearly insipid, a slight degree of bitterness only being perceptible when it is long chewed. Water by coction extracts its virtues; and when the decoction is evaporated, an extract is obtained, with properties similar to opium, but less powerful.

2. *Turkey opium* has a peculiar, strong, heavy, narcotic, odour, and a bitter taste, which is accompanied with a sensation of acrid heat, or biting on the tongue and lips, if the opium be well chewed. Its colour, when good, is a reddish brown, or fawn colour, its texture compact and uniform. When soft, it is tenacious; but when long exposed to the air, it becomes hard, breaks with an uniform shining fracture, is pulverulent, and affords a yellowish powder. It is inflammable, and partially soluble in water, vinegar, lemon juice, wine, alcohol, and ether. By long boiling in water under exposure to the air, its narcotic powers are impaired; yet nothing rises with water, when it is distilled with that fluid.* When carefully triturated with hot water, about five parts in twelve of the opium are dissolved and retained in solution, nearly six parts are simply suspended, and rather more than one part remains perfectly insoluble, of a viscid, plastic nature, somewhat resembling the gluten of wheat, but of a dark colour. Bucholz regarded this as caoutchouc; according to Proust it contains wax; and Gren supposed it to be analogous to gluten. By digesting alcohol on this substance I found that it dissolved a small portion of it, acquired a reddish yellow colour and became milky when added to water. Sulphuric ether digested on it, broke it down, and dissolved a portion of it, forming a yellowish tincture, which when evaporated on water left resin, a bitter extractive, and some acicular crystals of that salt which Derosne supposed to be the narcotic principle. The insoluble part, after the action of the ether, was subjected to a set of comparative experiments with the gluten of wheat,

* Beaumé, however, asserts that the odorous part of the opium is an oil.

when it afforded similar results with the majority of the tests employed. Hence this part of Turkey opium appears to be a modification of gluten combined with resin, extractive, and a peculiar salt.

3. *East Indian opium* has a strong empyreumatic smell, and less of the peculiar narcotic heavy odour of the Turkey opium; the taste is more bitter, and equally nauseous, but it has less acrimony: it agrees with the Turkey opium in its other sensible qualities, except that its colour is blacker, its texture less tenacious; and when triturated with water no insoluble plastic residuum is left, but it is altogether taken up; eight parts in twelve being dissolved, and the remainder suspended in the fluid.

The aqueous solutions of both kinds of opium are transparent when filtered, that of the East Indian having the deepest brown colour; both redden litmus paper; neither is decomposed by alcohol, but both are precipitated by the carbonates of potass and of soda, and by pure ammonia; precipitates are also formed by solutions of the muriate and nitrate of mercury, the acetate and super-acetate of lead, the nitrate of silver, and the sulphates of copper, of zinc, and of iron. They are also precipitated by infusion of galls; the precipitate, as doctor Duncan justly observes, resembling more that produced by cinchonin, than that by gelatine.¹ The solution of acetate of barytes does not alter the solutions of Turkey opium, but produces a copious precipitate with those of the East Indian; oxalic acid precipitates both, but the latter more copiously. From these experiments opium appears to contain resin, gum, bitter extractive, a peculiar crystallizable salt, and sulphate of lime, which appears to be very abundant in the East Indian opium: the Turkish contains besides, a species of gluten, and perhaps caoutchouc.

When ether is used as a menstruum for opium, and the resin and extractive which it takes up are separated by evaporating the tincture on the surface of water, the pellicle of resin deposited is nearly insipid, while the extractive dissolved in the water has an intensely bitter taste: from this fact, and the circumstance already mentioned of opium becoming inert when boiled in water, we might venture to conclude that the narcotic principle resides in the extractive. Derosne in 1804, asserted that the activity of opium depends on a peculiar salt. He evaporated a watery infusion of opium to the consistence of syrup, and digested the gritty precipitate formed by this evaporation in hot alcohol: as the solution cooled, a salt formed, which by repeated solutions and crystallizations was

¹ *Edinburgh New Dispensary*, 5th edit. 332.

obtained free from the resin, of a white colour, and in rectangular prisms with rhomboidal bases; these were inodorous, insipid, insoluble in cold water, but soluble in 400 parts of boiling water; soluble in 100 parts of cold, and 24 of boiling alcohol; soluble in hot ether and the volatile oils, but separating as these fluids cooled; and very soluble in all the acids. Given to dogs, it produced the effects of a strong dose of opium; but the bad effects were relieved by vinegar. In repeating the experiments of Derosne, I obtained a much greater proportion of crystals of this peculiar salt from East Indian than from Turkey opium, which I conceived to militate against his idea of its being the narcotic principle, in as much as larger doses of that variety of opium are required to produce its narcotic effect on the system. I have had no opportunities of ascertaining the power of the salt; but from Derosne's account it is not much more powerful as a narcotic than opium itself. My scepticism on this subject has been confirmed by the discovery of M. Sertuerner. The first experiments of this chemist were made public about the same time as those of Derosne: but they excited little attention until he published a second memoir in 1817. According to Sertuerner the salt of Derosne is not the narcotic principle of opium, but a combination of it with a peculiar acid which he discovered in opium, and named the *meconic*, the narcotic principle being according to him an alkaline salt, which he had obtained in a separate state. This salt has been named *morphia*. Robiquet, however, has demonstrated the fallacy of Sertuerner's opinion as far as it concerns Derosne's salt; but has confirmed his statement regarding the existence of *morphia*. To obtain it, he orders a concentrated solution of opium to be boiled for a quarter of an hour, with a small quantity of magnesia. A greyish precipitate forms, which is to be separated by filtration, washed on the filter with cold water, dried, and then digested for some time with weak spirit, in a moderate heat, in order to separate the colouring matter. The residue is now again to be separated by the filter, washed with a little cold alcohol, and then boiled in a large quantity of rectified alcohol: on filtering the solution whilst it is yet boiling, *morphia* beautifully crystallized and almost free from colour is deposited as it cools. By repeating the last part of the operation three or four times, with the residue of the previous boilings, the whole of the *morphia* is obtained. The salt thus procured is colourless and crystallized, in regular parallelopipeds. It burns without leaving any

¹ *Annales de Chimie*, lxx. 270. Derosne concludes from the effects of nitric acid and caloric on this salt, that it is composed of oxygen, hydrogen, azote, and carbon. It does not redden vegetable blues. *Ibid.* p. 279.

² *Annales de Chimie & de Phys.* tome v. p. 275.

residue; restores, like the alkalies, the colour of reddened turnsole, browns turmeric paper, and readily combines with acids forming neutral salts. It is but little soluble in water or in cold alcohol, or ether; but, is readily soluble in the two latter fluids in the boiling state; the salt being again precipitated in crystals as the solutions cool. As an alkali, it holds the next place to ammonia, having less affinity for the acids than either that salt or magnesia. Morphia being scarcely soluble in water or in the fluids of the stomach in its uncombined state, does not display in a striking manner its properties when exhibited alone; but these are very striking when it is combined with acids, particularly the acetic, or the meconic; with the latter of which it exists in opium a state of combination, as a super-meconate.

In repeating Sertuerner's experiments, I obtained from *Turkey* opium nearly three times the quantity of morphia yielded by *East Indian* opium; that from the latter was also more coloured, and in smaller crystals. Although the utmost nicety of manipulation was not attended to in these experiments, yet as both specimens were treated exactly in the same manner, the experiments are sufficient to shew the comparative richness of these varieties of the drug in this salt; and the result is certainly in favour of the opinion that the narcotic property of opium depends on this alkaline salt; and accounts for the fact which has been stated above, that much larger doses of the *East Indian* opium are required to produce its sedative effect on the system. Practitioners and physiologists in this country have not yet made any decisive experiments with morphia, to determine its effects on the animal economy; but this point has been investigated by M. M. Orfila and Majendie.* The experiments of the former being made upon dogs, they can be regarded as important only inasmuch as they confirm the opinion, that opium owes its soporific powers to this salt, and displays the comparative activity of the different combinations of the salt. Of the saline compounds he found the acetate the most powerful; but a solution of morphia in olive oil acts with still greater intensity, and with more than double the effect of the aqueous extract of opium. The experiments of M. Majendie being made on the human subject, are more interesting. He found that a quarter of a grain of acetate of morphia produces the most beneficial effects that can be expected from an anodyne, allaying pain and procuring sleep without, in any degree, affecting the cerebral functions. The sulphate acts in a similar manner but with less energy.

Medical properties and uses.—Poppy heads or capsules possess anodyne properties: they are chiefly employed, boiled in

Nouveau Journ. de Médecine, tom. i. p. 1. 23.

water, as fomentations to inflamed and ulcerated surfaces; and a syrup prepared with the inspissated decoction is used as an anodyne for children, and to allay the tickling cough in chronic catarrh, and phthisis.

Opium operates as a powerful and very diffusible stimulus, but its primary operation is followed by narcotic and sedative effects in a degree much greater than could be expected from the previous excitement it induces. It acts directly on the nervous system, and when taken into the stomach destroys irritability, and allays pain in the most distant parts of the body, independent of the circulation, and without inducing any change on the composition of the blood. As the principle, therefore, on which opium acts is the same over all the body, the topical application of it is capable of producing similar effects, only in a diminished degree, to those resulting from it when it is taken into the stomach. The larger the dose is, the more quickly its primary action is extended over the whole habit; and as every part is excited nearly at the same moment of time, the general consequent exhaustion must necessarily more rapidly follow than when the dose is merely sufficient to induce a degree of excitement, scarcely exceeding the powers of the system on which it operates. Hence either the stimulant or the sedative effects of opium may be rendered obvious by the nature of the dose in which it is exhibited; and the early knowledge of this truth might have saved much of the keen controversy which this subject at one period occasioned.

In moderate doses opium increases the fullness, the force and frequency of the pulse, augments the heat of the body, invigorates both the corporeal and mental functions, exhilarating even to intoxication¹: but by degrees these effects are succeeded by languor, lassitude and sleep; and in many instances headach, sickness, thirst, tremors, and other symptoms of debility, such as follow the excessive use of ardent spirits, supervene. In very large doses the primary excitement is scarcely apparent, but the pulse seems to be at once diminished, drowsiness and stupor immediately come on, and are followed by delirium, sighing, deep, and stertorous breathing, cold sweats, convulsions, apoplexy and death. The appearances on dissection are those which indicate the previous existence of violent inflammation of the stomach and bowels; but notwithstanding the

¹ The Turks call opium *afioni*; and in the *teriakihana*, or opium shops of Constantinople, they take it in graduated doses from ten grains to one hundred grains in a day. It is mixed with rich syrup and the inspissated juices of fruit to render it more palatable and less intoxicating; and is taken with a spoon, or made up into small lozenges stamped with the words *Mash Allah*, literally "The work of God." The Tartar couriers who travel great distances, and with astonishing rapidity, take nothing else to support them during their journeys. *Dallaway's Constantinople*, 4to. 78.

symptoms of apoplexy which an overdose when it proves fatal occasions, no particular appearance of an inflammatory state or fullness of the vessels of the brain are perceived.

Opium is efficaciously given in some diseases of debility, as, for instance, fevers of the typhoid kind, and intermittents; and combined with calomel to check the progress of gangrene. In typhus, when given in small doses frequently repeated, it is an useful assistant to wine and tonics in supporting the vis vitæ; and at the same time allaying irritation, and obtunding the susceptibility of those morbid impressions which occasion watchfulness, delirium, tremors, and subsultus tendinum. It is to this effect of it that Alibert and others ascribe its power, when moderately used, of rendering the human body less susceptible to different diseases.¹ Some caution, however, is required in its exhibition; for if the heat of the body be much above the natural standard, and the skin dry, opium increases these symptoms, augments thirst, and occasions restlessness. But if moisture be coming on, opium accelerates it, and tranquillity and sleep follow. Hence the propriety of Dr. Currie's advice, not to give the evening dose of opium in these fevers till very late or about one or two o'clock in the morning, when the heat is subsiding; or first to lower the temperature, and excite sensible perspiration by the effusion of cold water, or tepid sponging.² It is hurtful also where there is any disposition to local inflammation, particularly of the chest; and where there is much determination to the head. Opium very materially assists the bark in curing intermittents, and prevents it from running off by the bowels. When given at the approach of the paroxysm, it sometimes checks its attack, or shortens and renders it milder, and abates the violence of the hot stage by determining to the surface, and inducing sleep.

In acute rheumatism opium is given united with ipecacuanha or antimonials, and nitre, and always relieves when it determines to the surface. In the other phlegmasiæ³, however, it cannot with propriety be used in the early stages; but after the inflammatory action is subdued, it is useful in quieting cough, allaying pain, and procuring sleep.

In eruptive diseases, particularly small-pox, the liberal use of opium is found to be highly beneficial, when convulsions precede the appearance of the eruption, or if the accompanying fever assume the typhoid type. In malignant scarlatina, pemphigus, and several others of the exanthemata, it is equally

¹ *Nouveaux Elémens de Thérapeutique*, &c. 4 edit. tome xi. p. 76.

² *Medical Reports on the Use of cold and warm Water*, i. 290.

³ Were it allowable in this work to criticize nosological arrangements, we might justly question the propriety of placing rheumatism among the phlegmasiæ.

valuable; but its use is contra-indicated in this class of diseases when the fever is inflammatory.

In the hæmorrhagiæ it is useful when the discharge arises chiefly from an increased degree of irritability, and where the pulse, instead of being strong and full, is small, quick, and intermitting. Hence its efficacy in the floodings of weakened habits after abortions and in phthisical hæmoptysis. It has been recommended also after blood-letting, in the hæmoptysis and hæmatemesis of the later months of pregnancy.

Although opiates are hurtful at first, and check expectoration in catarrh, yet when the cough remains obstinate their good effects are undoubted; and in the contagious catarrh or influenza, an opiate at bed-time is requisite for quieting the cough in every stage of the disorder. In dysentery, also, the benefit to be derived from opium depends very much on the bowels having been previously well cleared, in which case it allays the tormina and tenesmus; and the same remark applies to diarrhœa.

But the spasmodic and convulsive diseases are those in which opium is most evidently useful. In tetanus, although it does not always succeed, even when given in the largest doses, yet, many cases have occurred in which the continued exhibition of large doses has overcome the spasm, and cured the disease; particularly when it has been judiciously combined with cathartics: often, however, very large quantities of the remedy have been taken without any sensible effect on the state of the habit, and without relieving the disorder; and the same is the case in hydrophobia, in which 180 grains of solid opium have been taken in the space of twelve hours without producing any apparent effect. It has been found beneficial in chorea; but as, in tetanus, it is necessary to precede its use by strong cathartics, or at least to give it in combination with these.¹ In epilepsy it proves useful when given in combination with musk; and it has been recommended by highly respectable authority² in eclampsia, but its efficacy in this complaint is rather doubtful. In spasmodic asthma it shortens the paroxysms, abates the violence of the cough in pertussis, when given after the primary fever subsides; and is more especially useful in pyrosis and cholera than any other medicine. Solid opium, either alone or united with camphor, is the most effectual remedy for checking obstinate vomiting proceeding from a morbid irritability of the stomach. In colic and ileus it is given in combination with laxatives, and allays the spasm and pain; nor is it less

¹ *Observations on the Administration and Utility of Purgative Medicines*, &c. 86.

² Denman. Bland.

efficacious in flatulent colic with hernia. As a remedy in lues venerea opium is still relied on by some foreign practitioners, but the idea of its anti-venereal powers has been justly exploded in this country; and it is properly regarded only as an useful adjunct to mercury in this disease: "by diminishing the sensibility of the stomach and bowels, it prevents many of those inconveniences which this mineral is apt to excite in the primæ viæ, and allows it to be more easily introduced into the system." In short, in all cases where the irritability is morbidly increased, and where it is of importance to lessen pain, and procure sleep, opium is undoubtedly the most valuable article of the materia medica.

Opium is contra-indicated in all morbid states of the body where a strong inflammatory diathesis exists; in pulmonary affections, when the cough is dry and hard, and the expectoration difficult and scanty; and if not hurtful, its use is at least doubtful in mania, in which it generally occasions restlessness instead of procuring sleep.

Externally used, opium is almost as efficacious as when it is taken into the stomach, and produces its narcotic effects without affecting the head or producing nausea. It is applied in the form of frictions, either combined with oil, or with the camphor liniment, or in the form of tincture: thus applied, it may be used in all the diseases above enumerated. We have often seen its good effects in colic; and have also witnessed its singular efficacy in symptomatic trismus, when rubbed on the jaw, and applied to the scrobiculus cordis by means of pledgets soaked in the tincture. A piece of solid opium stuffed into a carious tooth relieves the pain of tooth-ach; and introduced into the rectum, either in the solid form or dissolved in water as an enema, it affords relief in tenesmus, in painful affections of the prostate gland, and in spasmodic strictures. A weak watery solution of it also is an useful adjunct to injections in gonorrhœa, and to collyria in ophthalmia; and the vinous tincture dropped into the eye removes the suffusion which often remains in that disease after the inflammation has been subdued; and restores the tone of the diseased organ. The aqueous solution also lessens the pain of open cancer, when cloths soaked in it are laid over the sore.

Opium is exhibited either in substance as a pill, or under the form of tincture. It is necessary to avoid combining it with substances which decompose it; and therefore solutions of oxymuriate of mercury, acetate of lead, sulphates of zinc, iron, and copper; of the carbonates of alkalies, lime water, infusion of galls, and infusion of yellow cinchona bark, are incompati-

¹ Pearson's Observations, &c. on Articles used in the Cure of Lues Venerea, p. 60.

ble in prescriptions with opium. In combination, however, with vinegar, the vegetable acids and oil, its narcotic power is much increased.¹

The dose of opium varies according to the nature of the disease, and the peculiar intention for which it is ordered. The circumstance of the patient having been previously accustomed to its use must also regulate the extent of the dose; for in this case a dose, which to one unaccustomed to its use would prove fatal, may perhaps to another in the habit of taking it be scarcely sufficient to produce its narcotic effects. A quarter of a grain, or even less, frequently, repeated, is, in general, sufficient to keep up its stimulant effect; and from gr. j. to grs. ij. act as a narcotic, and produce sleep; while in tetanus, hydrophobia, and some other diseases, fʒvss of laudanum have been given in twenty-six hours, without occasioning any bad effects, or even producing sleep.²

The use of opium for the purpose of exhilarating the spirits has long been used in Turkey, Syria, and China; and of late years it has been unfortunately adopted by many, particularly females, in this country. Russell³ says that in Syria, when combined with spices and aromatics, he has known it taken to the amount of ʒiij in twenty-four hours. Its habitual use cannot be too much reprobated. It impairs the digestive organs, consequently the vigour of the whole body, and destroys also gradually the mental energies. The effects of opium on those addicted to its use, says Russell, are at first obstinate costiveness, succeeded by diarrhoea and flatulence, with loss of appetite and a sottish appearance. The memories of those who

¹ The effects of vegetable acids in augmenting the efficacy of opium is explained by what has been said on the combinations of morphia. The greater power of that preparation of opium, which has been known, for upwards of a hundred years, under the name of "Black Drop," appears to depend on its containing an acetate of morphia. The following is the mode of preparing it, as published by Dr. Armstrong, (*vide Practical Illustrations of Typhus*), from the papers of the late Edward Walton, of Sunderland, one of the near relations of Edward Tonstall, of Bishop's Auckland, by whom it was originally prepared.

"Take half a pound of opium sliced; three pints of good verjuice; one and a half ounce of nutmegs; half an ounce of saffron. Boil them to a proper thickness, then add a quarter of a pound of sugar, and two spoonsful of yeast. Set the whole in a warm place near the fire, six or eight weeks, then place it in the open air until it becomes a syrup; lastly decant, filter, and bottle it up, adding a little sugar to each bottle."

One drop of this preparation is calculated to be equal to three drops of the Tincture of Opium, of the London College.

There is also some reason for thinking that another preparation of opium, the *Liquor Opii Sedativus*, of Mr. Batley, of Fore-Street, London, which has been justly esteemed one of the best preparations of the drug hitherto discovered, owes its efficacy to the acetate of morphia. The mode of preparing it is as yet kept secret; but I know that the whole of the resinous part of the opium employed is separated and rejected; and I am inclined to believe that acetic acid is employed to separate the gummy part.

² Currie's Medical Reports, &c. i. 138.

³ History of Aleppo, i. 128.

take it soon fail, they become prematurely old, and then sink into the grave objects of scorn and pity.¹

When opium has been taken in an overdose, the first thing to be done for counteracting its bad effects is the exhibition of a powerful emetic; and for this purpose ℥j of sulphate of zinc, or from grs v. to grs x. of sulphate of copper dissolved in water should be immediately swallowed; and the vomiting kept up for a considerable time, and urged by irritation of the fauces. Large draughts of vinegar and water, or other acidulated fluids should afterwards be frequently taken; and the powers of the habit supported by brandy, coffee, and cordials. The sufferer should be kept awake, and, if possible, in continued gentle motion. Currie recommends for removing the drowsiness the affusion of warm water at 106° or 108°.²

Official preparations. Of the poppy capsules—*Decoctum Papaveris*. L. *Extractum Papaveris*. L. E. *Syrupus Papaveris*. L. E. D. Of Opium—*Opium purificatum*. D. *Confectio Opii*. L. E. *Extractum Opii*. L. E. D. *Pilulæ Opii*. E. *Pilulæ Saponis cum Opio*. L. *Pulvis opiatu*s. E. *Pulvis Cornu usti cum Opio*. L. *Pulvis Cretæ comp. cum Opio*. L. *Pulvis Ipecacuanæ comp.* L. E. D. *Tinctura Opii*. L. E. D. *Tinctura Camphoræ composita*. L. D. *Tinctura Opii ammoniata*. E. *Trochisci Glycyrrhizæ cum Opio*. E.

PASTINACA. *Spec. Plant. Willd.* i. 1465.

Cl. 5. *Ord.* 2. *Pentandria Digynia*. *Nat. Ord.* *Umbellatæ*.

G. 558. *Fruit* elliptical, compressed, flat. *Petals* involute, entire. *Species* 3. *P. Opoponax*. *Opoponax*, or Rough Parsnip. *Med. Bot.* 2d ed. 122. t. 47.

Official. *OPOPONACIS GUMMI RESINA*. *Lond.* *Opoponax*.

Syn. *Opoponax* (F.) *Panax gummi* (G.) *Opoponace* (L.) *Iáwesheer* (Arab.)

This species of parsnip is a perennial plant, a native of the south of Europe, flowering in July. The root is as thick as the human arm, branched, of a yellow colour, and covered with a corky bark: the stem rises about five feet in height, the thickness of a man's finger, round, striated, scariose at the base, angular at the summit, and shining: the radical leaves are simple, cordate, and crenated; those of the stem ternate and quinate, with the terminal leaflet cordate and very large: the whole are petiolate, with the petioles sheathing, and the leaflets hairy on the under surface: the umbelliferous branches are very smooth; first alternate, erect; then two, three, or four together, in a sort of whorl, two or three inches long, with one or two spatheaceous leaflets towards the middle or at

¹ Mustapha Shatoor, an opium eater in Smyrna, took daily three drachms of crude opium. The visible effects at the time were the sparkling of his eyes, and great exhilaration of spirits. He found the desire of increasing his dose growing upon him. He seemed twenty years older than he really was; his complexion was very sallow, his legs small, his gums eaten away, and the teeth laid bare to the sockets. He could not rise without first swallowing half a drachm of opium. *Phil. Trans.* xix. 289.

² *Reports on Water*, i. 80.