

prepared, by exposing mixtures of putrefying animal and vegetable substances, and calcareous earths, to the action of the atmosphere. The salt is afterwards extracted by lixiviation and crystallization. The nitre used in this country is chiefly imported from the East Indies. As it occurs in commerce, it often contains a little muriate of potass and muriate of soda, from which it is easily purified by dissolving it in boiling water, and filtering it; on cooling, the nitrate of potass crystallizes, and the other salts remain dissolved.

Nitrate of potass has a sharp, bitterish, cooling taste. It shoots in pretty large crystals, which are generally six-sided prisms, terminated by six-sided pyramids; very brittle; permanent in the atmosphere; soluble in seven times their weight of water at 60°, and in an equal weight at 212°; melting when exposed to a strong heat, giving out at first oxygen, and afterwards nitrogen gas, until the whole acid be decomposed, and the potass alone remain behind. It deflagrates more or less violently with all oxygenizable substances, oxidizing or acidifying them. When dried in a temperature of 70°, it consists, according to Kirwan, of 44 nitric acid, 51.8 potass, and 4.2 water. It is decomposed by the sulphuric acid and baryta, by the muriate and acetate of baryta, and the sulphates of soda, ammonia, magnesia, and alumina.

Medical use.—Taken to the extent of from a drachm to half an ounce in the course of a day, in repeated doses, it diminishes the heat of the body, and the frequency of the pulse, operates by stool, and acts upon the secretion of urine, but is apt to produce pains in the stomach. In large doses, such as an ounce, taken at one time, it produces the most dreadful symptoms, constant vomiting, purging mixed with blood, convulsions, and death. Accidents of this kind have happened, from its being sold, by mistake, for sulphate of soda.

It is best given in small doses, as from five to ten grains, frequently repeated, and is only admissible in inflammatory diseases. Externally it is used in gargles for inflammatory sore throats.

OLEA EUROPEA. *Lond. Ed. Dub.*

Willd. g. 36, sp. 1. Diandria Monogynia.—*Nat. ord. Sepiaria.*

The olive tree.

Off.—Olive oil. The fixed or expressed oil of the fruit.

OLEÆ EUROPEÆ OLEUM. *Ed.*

OLIVÆ OLEUM. *Lond.*

OLEUM OLIVARUM. *Dub.*

THE olive tree is a native of the south of Europe and north of Africa. It is cultivated in France, Spain, and Italy, for the sake of its fruit, and the oil expressed from it. Olives, when fresh, have an acrid, bitter, and extremely disagreeable taste; but they are only eaten when pickled. They are first steeped for several days in a ley of wood-ashes, and then pickled in a strong solution of muriate of soda.

They are principally valued for the oil they afford by expression.

For this purpose they are gathered when fully ripe, and immediately bruised, and subjected to the press. The finest oil flows first, and a very bad oil is obtained by boiling the magma, which remains after expression in water. According to Baumé, they are gathered when sufficiently ripe: they are then dried, to deprive the mucilage, of which they contain a large quantity, of its water, and are expressed after being bruised, and moistened with a little water, to render the oil more fluid. By rest, the mucilage and water which may have passed with it separate. Olive oil is sometimes mixed with oil of poppy seeds: but, by exposing the mixture to the freezing temperature, the olive oil freezes, while that of the poppies remains fluid; and as oils which freeze with most difficulty are most apt to become rancid, olive oil is deteriorated by the mixture of poppy oil.

Good olive oil should have a pale yellow colour, somewhat inclining to green, a bland taste, without smell, and should congeal at 38° Fahrenheit. In this country, it is frequently rancid, and sometimes adulterated.

Medical use.—Taken internally, it operates as a gentle laxative, and is given in cases of worms. It is also given in large quantities to mitigate the action of acrid substances taken into the stomach. It is used externally in frictions, in gargles, and in clysters; but its principal employment is for the composition of ointments and plasters.

ONISCUS ASELLUS. *Dub.*

Insecta aptera.

Off.—Slaters, killed by the vapour of alcohol.

MILLEPEDEÆ. *Dub.*

THESE insects are found in cellars, under stones, and in cold moist places; in warm countries they are rarely met with. They have a faint disagreeable smell, and a somewhat pungent, sweetish, nauseous taste.

Neumann got from 480 parts 95 watery and ten alcoholic

extract; and inversely 52 alcoholic, and 45 watery. Nothing rose in distillation with either.

Their medical virtues have been very much overrated.

ORIGANUM.

Willd. g. 1116, Smith, g. 273. Didynamia Gymnospermia.
—Nat. ord. *Verticillatae*.

Sp. 10. Willd. sp. 1. Smith. ORIGANUM VULGARE. Lond. Dub.

Common marjoram.

Off.—The herb.

ORIGANUM. *Lond.*

ORIGANI FOLIA. *Dub.*

This is a perennial plant, which is met with upon dry, chalky hills, and in gravelly soils, in several parts of Britain, and flowers in July and August. It has an agreeable smell, and a pungent taste, warmer than that of the garden marjoram, and much resembling thyme, with which it seems to agree in virtue. An essential oil distilled from it is kept in the shops, and is very acrid.

Sp. 15. Willd. ORIGANUM MARJORANA. Ed. Dub.

Sweet marjoram.

Off.—The plant.

HERBA ORIGANI MARJORANÆ. *Ed.*

HERBA MARJORANÆ. *Dub.*

SWEET marjoram is an annual plant, which grows wild in Portugal, but is cultivated in our gardens, principally for culinary purposes. It is a moderately warm aromatic, yielding its virtues both to aqueous and spiritous liquors by infusion, and to water in distillation.

OSTREA EDULIS. *Lond.*

Cl. Vermes.—Ord. *Testacea*.

Oyster.

Off.—The shell.

TESTÆ. *Lond.*

THE oyster is a very nutritious article of diet, and in some diseases not only admissible, but even advantageous. Their shells, which are officinal, are composed, like all other mother-of-pearl shells, of alternate layers of carbonate of lime, and a thin membranous substance, which exactly resembles coagulated albumen in its properties. By burning, this membrane

is destroyed, and the shells are converted into lime, which, although very pure, possesses no advantage over that of the mineral kingdom.

OVIS ARIES. *Lond. Dub. Ed.*

Cl. Mammalia.—Ord. Ruminantia.

The sheep.

Off.—Mutton suet.

SEVUM. *Lond. Dub.*

ADEPS OVIS ARIETIS. *Ed.*

MUTTON is a highly nutritious and wholesome food. Ewe-milk is thick and heavy, and contains much cream and little whey. The cheese made from it has a bitter, biting taste, especially when old, and is supposed to be stomachic. Mutton-suet is officinal, for the purpose of giving consistency to some ointments and plasters.

OXALIS ACETOSELLA. *Lond.*

Willd. g. 918, sp. 25. Smith, g. 217, sp. 1. Decandria Pentagynia.—Nat. ord. Gruinales.

Common wood-sorrel.

Off.—The leaves.

ACETOSELLA. *Lond.*

THIS is a small perennial plant, which grows wild in woods, and under shady hedges, and flowers in April and May. The leaves contain a considerable quantity of super-oxalate of potass, and have an extremely pleasant acid taste. They possess the same powers with the vegetable acids in general, and may be given in infusion, or beaten with sugar into a conserve, or boiled with milk, to form an acid whey. The super-oxalate of potass is extracted in large quantities from them, and sold under the name of *Essential Salt of Lemons*.

Twenty pounds of the fresh leaves yielded to Neumann six pounds of juice, from which he got two ounces two drachms, and a scruple of salt, besides two ounces and six drachms of an impure saline mass.

PAPAYER.

Willd. g. 1015, sp. 4. Smith, g. 243. Polyandria Monogynia.—Nat. ord. Rhœades.

Sp. 5, Willd. sp. 4. Smith. PAPAVER RHŒAS. Lond. Dub.
Corn-rose, or red poppy.

Off.—The flower.

PETALA RHEADOS. *Lond.*

PETALA PAPAVERIS ERRATICI. *Dub.*

THIS species of poppy is annual, and very common in our corn fields. It flowers in June and July, and the petals give out a fine red colour when infused, and are supposed to possess slightly anodyne powers.

Sp. 7. *Willd. sp.* 8. *Smith.* PAPAVER SOMNIFERUM. *Ed. Lond. Dub.*

White Poppy.

Off.—Poppy heads.

a) CAPSULÆ PAPAVERIS SOMNIFERI. *Ed.*

CAPSULÆ PAPAVERIS ALBI. *Dub.*

PAPAVERIS CAPSULÆ. *Lond.*

b) OPIUM, Succus capsulæ spissatus. *Ed.*

OPIUM, capsularum immaturarum succus concretus. *Lond.*

OPIUM, Succus concretus. *Dub.*

THE white poppy is also an annual, and is sometimes found wild in this country, but it is probably originally a native of the warmer parts of Asia. It flowers in July, and is frequently cultivated for the beauty and the variety of its flowers, and for its seeds. Some attempts have been made in this country to obtain opium from its capsules; and Mr Ball received a premium from the Society for encouraging the arts, for specimens of British opium, in no respect inferior to the best eastern opium. But we apprehend that the climate of this country is an insuperable obstacle to its becoming a profitable branch of agriculture.

The leaves, stalks, and capsules of the poppy, abound with a narcotic milky juice, which is partially extracted, together with a considerable quantity of mucilage, by decoction. The liquor, strongly pressed out, suffered to settle, clarified with whites of eggs, and evaporated to a due consistence, yields about one-fifth, or one-sixth of the weight of the heads, of extract, which possesses the virtues of opium in a very inferior degree, and does not come to this country, unless when used to adulterate the genuine opium.

A strong decoction of the dried heads, mixed with as much sugar as is sufficient to reduce it to the consistence of a syrup, becomes fit for keeping in a liquid form, and is the only officinal preparation of the poppy. It is, however, a very unequal preparation, as the real quantity of opium it contains

is very uncertain ; and as a medicine, it is by no means equal to syrup, to which a certain quantity of solution of opium is added.

The seeds of the poppy are simply emulsive, and contain none of the narcotic principle. They yield a considerable quantity of fixed oil by expression.

Off.—Turkey opium ; the concrete juice of the capsules before they are ripe.

OPIMUM. *Ed. Lond. Dub.*

Opium is the inspissated juice of the poppy. In the evening several superficial longitudinal incisions are made in the capsules, when they are almost ripe, with a knife having from three to five blades. The juice which exudes during the night, next day after it has been thickened, by the heat of the sun, is collected by means of iron scrapers, and put into an earthen pot. The operation is repeated as long as the heads furnish juice in sufficient quantity, and the opium is worked into masses with a wooden spatula, in the heat of the sun, until it acquires the due degree of thickness, when the masses are covered with poppy or tobacco leaves.

Two kinds of opium are found in commerce, distinguished by the names of Turkey and East-India opium.

Turkey opium is a solid compact substance, possessing a considerable degree of tenacity ; when broken, having a shining fracture and uniform appearance ; of a dark-brown colour ; when moistened, marking on paper a light-brown interrupted streak, and becoming brown when reduced to powder ; scarcely colouring the saliva when chewed, exciting at first a nauseous bitter taste, which soon becomes acrid, with some degree of warmth ; and having a peculiar heavy disagreeable smell. The best kind is in flat pieces, and besides the large leaves in which it is enveloped, is covered with the reddish capsules of a species of rumex, probably used in packing it. The round masses which have none of the capsules adhering to them, are evidently inferior in quality. Opium is bad if it be soft, or friable, mixed with any impurities, have an intensely dark or blackish colour, a weak or empyreumatic smell, a sweetish taste, or draw upon paper a brown continuous streak.

East-Indian opium has much less consistence, being sometimes not much thicker than tar, and always ductile. Its colour is much darker ; its taste more nauseous, and less bitter ; and its smell rather empyreumatic. It is considerably cheaper than Turkish opium, and is supposed to be of only half the strength. One-eighth of the weight of the cakes is allowed for the enormous quantity of leaves with which they are en-

veloped. In the East Indies, when opium is not good enough to bring a certain price, it is destroyed under the inspection of public officers.

Opium is not fusible, but is softened even by the heat of the fingers. It is highly inflammable. It is partially soluble both in alcohol and in water. Neumann got from 1920 parts of opium, 1520 alcoholic, and afterwards 80 watery extract, 320 remaining undissolved; and inversely 1280 watery, and 200 alcoholic extract, the residuum being 440.

The solutions of opium are transparent, and have a brown or vinous colour. The watery solution is not decomposed by alcohol. A small quantity of matter, which, as far as my experiments go, is neither fusible nor remarkably inflammable, is separated from the alcoholic solution by water. I have also observed that the watery solution of opium, and the alcoholic, after it has been precipitated by water, does not redden vegetable blues, is not precipitated by acids or alkalies, but is precipitated copiously by carbonate of potass, muriate and super-nitrate of mercury, oxymuriate of tin, sulphate of copper, sulphate of zinc, acetate of lead, nitrate of silver, and red sulphate of iron. The precipitate in the last case was of a dirty brown colour, not resembling those by alkaline or astringent substances. The solutions of opium, especially the watery, are also copiously precipitated by infusion of galls. This precipitate seems to resemble that produced by cinchonin, and to be different from that produced by gelatine.

The narcotic virtues of opium are imparted by distillation to alcohol and to water, and they are diminished, or entirely dissipated, by long boiling, roasting, or great age. The part of opium which is not soluble either in water or in alcohol, is albumen, according to Gren; caoutchouc, according to Bucholz; a virulent glutinous substance, according to Josse; and Proust says it contains wax. From experiments made some years ago, I concluded that it was perfectly similar to the gluten of wheat flour, or fibrine. Long ago it was proposed to separate the resinous parts of opium by the same process that the fibrine of wheat flour is obtained. The fact is, that if Turkey opium be kneaded in a large quantity of water, the soluble parts are removed, and there remains in the hand an adhesive plastic mass, of a paler colour, not fusible, but becoming ductile when immersed in hot water, inflammable, imparting some colour to alcohol, but not soluble in it. East-India opium, treated in the same way, is entirely dissolved or diffused in the water, and leaves no plastic mass in the hand.

Upon the whole, it appears that the active constituent of opium, though not perfectly understood, is of a volatile nature, but sometimes fixed by its combination with the other constituents; that it is soluble both in water and in alcohol; that it is dissipated in the processes recommended for purifying opium by solution and evaporation; and that the attempts made by some pharmacutists, to obtain a preparation of opium, which should possess only its sedative, without its narcotic effects, only succeeded in so far as they diminished its activity.

By evaporating a watery solution of opium, to the consistence of a syrup, Derosne obtained a precipitate, which was increased by diluting it with water. He dissolved this in hot alcohol, from which it again separated on cooling. When purified by repeated solutions, it crystallized in rectangular prisms, with rhomboidal bases, had no taste or smell, was insoluble in cold water, and soluble in 400 parts of boiling water, did not affect vegetable blues, was soluble in 24 parts boiling alcohol, and 110 cold; soluble in hot ether and volatile oils, and separated from them as they cooled; very soluble in all acids, and highly narcotic. These observations are curious, and the experiments deserve to be repeated.

Medical use.—The action of opium on the living system has been the subject of the keenest controversy. Some have asserted that it is a direct sedative, and that it produces no stimulant effects whatever; while others have asserted as strongly, that it is a powerful, and highly diffusible stimulus, and that the sedative effects, which it undeniably produces, are merely the consequence of the previous excitement. The truth appears to be, that opium is capable of producing a certain degree of excitement, while the sedative effects which always succeed, are incomparably greater than could be produced by the preceding excitement. The stimulant effects are most apparent from small doses. These increase the energy of the mind, the frequency of the pulse, and the heat of the body, excite thirst, render the mouth dry and parched, and diminish all the secretions and excretions, except the cuticular discharge, which they increase. These effects are succeeded by languor and lassitude. In larger doses, the stimulant effects are not so apparent; but the excitability is remarkably diminished, and confusion of head, vertigo, and sleep are produced. In excessive doses it proves a violent narcotic poison, producing headach, vertigo, delirium, and convulsions, accompanied with a very slow pulse, stertorous breathing, and a remarkable degree of insensibility or stapor, terminated by apoplectic death. In one case, where I in-

spected the body after death, the inner membrane of the stomach was remarkably corrugated, and with some inflammation; but as large doses of sulphate of zinc, and flour of mustard had been also taken, no inference can be drawn from these appearances. The bad effects of an over-dose of opium are often prevented by the occurrence of vomiting, and they are best counteracted by making the patient drink freely of acids and coffee, and chiefly by not permitting him to yield to his desire of sleeping. By habit, the effects of opium on the body are remarkably diminished. There have been instances of four grains proving fatal to adults, while others have been known to consume as many drachms daily. The habitual use of opium produces the same effects with habitual dram-drinking; tremors, paralysis, stupidity, and general emaciation: and like it can scarcely ever be relinquished.

In disease, opium is chiefly employed to mitigate pain, diminish morbid sensibility, procure sleep, allay inordinate actions, and to check diarrhoeas, and other excessive discharges. It is contraindicated in gastric affections, plethora, a highly inflammatory state of the body, and determination of the blood to particular viscera.

In intermittents, it is said to have been used with good effect in every stage. Given even in the hot stage, it has been observed to allay the heat, thirst, headach, and delirium, to induce sweat and sleep, to cure the disease with less bark, and without leaving abdominal obstructions or dropsy.

In fevers of the typhoid type, accompanied with watchfulness or diarrhoea, it is extremely useful; but when not indicated by particular symptoms, it does harm, by augmenting thirst, and producing constipation.

Especially when combined with calomel, it has lately been much employed in inflammations from local causes, such as wounds, fractures, burns, absorption of morbid poisons, as in swelled testicle, &c. and even in active inflammations, accompanied with watchfulness, pain, and spasm, after blood-letting.

In small pox, when the convulsions before eruption are frequent and considerable, or when the accompanying fever is of the typhoid type, opium is liberally used. It is likewise given from the fifth day onwards; and is found to allay the pain of suppuration, to promote the ptyalism, and to be otherwise useful.

In dysentery, after the use of gentle laxatives, or along with them, opium, independently of any effect it may have on the fever, is of consequence in allaying the tormina and

tenesmus, and in obviating that laxity of bowels which so frequently remains after that disease.

In diarrhoea, the disease itself generally carries off any offending acrimony, and then, or after purgatives, opium is used with great effect. Even in the worst symptomatic cases, it seldom fails to alleviate.

In cholera and pyrosis, it is almost the only thing trusted to.

In colic, it is employed with laxatives; and often prevents ileus and inflammation, by relieving the spasm. Even in ileus it is sometimes used to allay the vomiting, the spasms, and the pain.

It is given to allay the pain, and favour the descent of calculi, and to give relief in jaundice and dysuria proceeding from spasm.

It is of acknowledged use in the different species of tetanus; affords relief to the various spasmodic symptoms of dyspepsia, hysteria, hypochondriasis, asthma, rabies canina, &c. and has been found useful in some kinds of epilepsy.

In syphilis it is only useful in combating symptoms, and in counteracting the effects resulting from the improper use of mercury, for it possesses no power of overcoming the venereal virus.

It is found useful in certain cases of threatened abortion and lingering delivery, in convulsions during parturition, and in the after-pains and excessive flooding.

The administration of opium to the unaccustomed, is sometimes very difficult. The requisite quantity is wonderfully different in different persons, and in different states of the same person. A quarter of a grain will in one adult produce effects which ten times the quantity will not do in another; and a dose that might prove fatal in cholera or colic, would not be perceptible in many cases of tetanus or mania. When given in too small a dose, it is apt to produce disturbed sleep, and other disagreeable consequences; but sometimes a small dose has the desired effect, while a larger one gives rise to vertigo and delirium, and with some constitutions it does not agree in any dose or form. Its stimulant effects are most certainly produced by the repetition of small doses, its anodyne by the giving of a full dose at once. In some it seems not to have its proper effect till after a considerable time. The operation of a moderate dose is supposed to last in general about eight hours from the time of taking it.

Externally, opium is used to diminish pain, and to remove spasmodic affections. It is found particularly serviceable in

chronic ophthalmia, when accompanied with morbidly increased sensibility.

Opium may be exhibited,

1. In substance, made up in the form of a pill, lozenge, or electuary. Its most efficient form.
2. Dissolved in diluted alcohol, or white wine.
3. Dissolved in water, or watery fluids. Very perishable.
4. Dried and reduced to powder.

It is often given in combination with aromatics, astringents, emetics, bitters, camphor, soap, distilled waters, mucilage, syrups, acids, carbonate of ammonia, ether, acetate of lead, tartrate of antimony and potass, and unctuous substances. Some of these are certainly unchemical mixtures, for I find by experiment that the solutions of opium are copiously precipitated by astringents, the alkaline carbonates, and all the metallic salts.

PASTINACA OPOPONAX. *Lond.*

Willd. g. 558, sp. 3. Pentandria Digynia.—Nat. ord. *Umbellatæ.*

Opoponax.

Off.—A gum-resin.

OPOPONACIS GUMMI RESINA. *Lond.*

This plant is perennial, and grows wild in the south of Europe; but the gum-resin, which is said to be obtained by wounding the stalk or root, is brought from the Levant and East Indies, sometimes in round drops or tears, but more commonly in irregular lumps, of a reddish-yellow colour on the outside, with specks of white, inwardly of a paler colour, and frequently variegated with large white pieces. It has a peculiar strong smell, and a bitter, acrid, somewhat nauseous taste.

Neumann got from 480 parts, 166 alcoholic, and afterwards 180 watery extract; and inversely, 226 watery, and 60 alcoholic. Both the water and alcohol distilled from it were impregnated with its flavour. It forms a milky solution with water, and yields a little essential oil on distillation. It is supposed to be an emmenagogue, but is rarely used.

PHASIANUS GALLUS. *Lond.*

Cl. Aves.—Ord. *Gallina.*

The dung-hill fowl.

Off.—The egg.

OVUM. *Lond.*