

or straw, which rises above two feet in height. The inflorescence is a loose panicle, with the subdivisions on long pendulous peduncles. The glumes of the calyx are two, marked with lines, pointed, unequal, and larger than the flower. There are usually two flowers and seeds in each calyx; they are alternate, conical; the smaller one is awnless: the larger puts forth a strong, two-coloured, bent awn from the middle of the back; both seeds are fertile.

There are many varieties of this species of grain cultivated in the north of Europe. In this country that which is called the *potatoc oat* is considered the best; its pickle is short and plump, with a thin, clean, bright, pale straw-coloured cuticle.

Oats, when freed from their cuticle only, are named grits; in which state, and ground into meal, they are dietetically and medicinally used. In both states they yield their fecula to water by coction; and form a nutritious amylaceous gruel. The nutrient qualities of oats are well known. In many places the meal forms the chief support of the poor: and for infants who are unfortunately deprived of their natural and proper nourishment, the breast milk, no better substitute can be adopted than thin grit gruel mixed with good cow's milk. The gruel should not be kept longer than forty-eight hours, as it becomes aced after that period.¹

Qualities. Oats are inodorous; and taste very slightly, but not unpleasantly bitter. They have not been chemically examined; but the greater part of their substance appears to consist of fecula or starch.

Medical properties and uses. — Gruels, or decoctions of grits or of oatmeal, are excellent demulcents, and therefore very frequently prescribed in inflammatory diseases, diarrhoea, cholera, dysentery, calculus, and febrile affections. They may be sweetened, acidified, or used plain. They are also used locally in glysters; and the meal boiled with water into a thick paste forms an excellent suppurative poultice.

BARYTA. Barytes.

Syn. Baryte (*F.*) Baryterde, Schwererde (*G.*) Barite (*L.*)

This mineral substance does not exist, as far as we know, in an uncombined state; and its native combinations hitherto discovered are very few. It is found

A. Combined with carbonic acid:

Sp. 1. Carbonate of barytes, or *Witherite*.²

¹ The following is the simplest mode of making gruel: Put three ounces of grits which have been washed, into four pints of water, and boil slowly until the water be reduced one half; then strain through a searce to separate the undissolved part of the grits from the gruel. ² So named by Werner after Dr. Withering who discovered it.

B. ——— with sulphuric acid :

2. *Sulphate of barytes, or Heavy spar.*

Barytes is obtained by decomposing these fossils. It is not a simple substance, but a compound of a peculiar metallic base named *barium* by Sir H. Davy¹, and oxygen, in unknown proportions.

1. CARBONATE OF BARYTES.

Officinal. CARBONAS BARYTÆ. *Edin.* Carbonate of Barytes.

Syn. Carbonate de Baryte, (F.) Kohlensaure Baryterde, (G.) Ossicarbonato di Barite (I.)

This fossil is found native in Sweden, Scotland, and Cumberland; but in greatest abundance at Anglesark, in Lancashire. It usually occurs massive in veins, which traverse the independent coal formation: and sometimes, although rarely, it is found crystallized.

Qualities.—Carbonate of barytes is inodorous and insipid; but is nevertheless poisonous. Its colour is white, or yellowish gray; it is translucent, with a shining, somewhat resinous lustre; and breaks in one direction with a fracture intermediate between radiated and foliated; and in another uneven: the fragments wedge-shaped. Its specific gravity is 4.331. When heated it becomes opaque; is fused into a white enamel by the blow-pipe; and dissolves with effervescence in diluted nitric acid. According to Berzelius, it consists of 78.4 of barytes and 21.6 of carbonic acid in 100 parts.

Use.—It is only used for preparing the muriate.

Officinal preparation. *Murias Barytæ.* E.

2. SULPHATE OF BARYTES.

Officinal. SULPHAS BARYTÆ. *Edin.* Sulphate of Barytes.

Syn. Sulfate de Baryte (F.) Schwefelsaures Baryterde (G.) Ossisolfato di Barite (I.)

This combination of barytes, which was formerly named *Ponderous spar*, is found native in many parts of the world.

Qualities.—Sulphate of barytes is inodorous and insipid. Its colour is white with shades of yellow, red, blue, or brown. It occurs transparent, semitransparent, or only translucent; and is hard, brittle, and heavy, its specific gravity being from 4.3 to 4.5. The varieties of form of its crystals are numerous; but the primitive form is a rectangular prism, the bases of which are rhombs with angles of $101^{\circ} 30'$ and $78^{\circ} 30'$.² It breaks with a straight foliated fracture; the fragments are nearly rhomboidal, and have a shining, pearly, almost vitreous lustre. It is fused by the blow-pipe, and converted into the sulphuret; and is soluble in sulphuric acid only, from which it is precipitated by water. The results of experiments to ascertain its

¹ Mr. Murray proposes *barytum* instead of barium. *Syst. of Chem.* ii. 205.

² Haüy, *Thomson's Chemistry*, iv. 369.

constituents have been very discordant: according to Berzelius, they are, 66 of barytes, and 34 of acid.

Use.—This barytic salt is introduced into the list of materia medica, merely as a substitute for preparing the muriate of barytes, when the carbonate cannot be procured.

BITUMEN.

Syn. Bitume (F.) Erdharz (G.) Bitume (I.) Bitumen (S.)

In the limited signification of this term, it is meant to imply those mineral inflammable bodies, which resemble, in a certain degree, oily and resinous substances. They have been divided into two classes: the first containing bitumens which possess nearly the same properties as the essential oils; the second, those which possess properties peculiar to themselves¹; and a third class may be formed of those substances in which bitumen predominates with other components.

A. Bituminous oils:

fluid. Sp. 1. Petroleum. Var. a. Naphtha.
b. Petroleum.
solid. { 2. Maltha, or Sea wax.
3. Mineral tallow.

B. Proper bitumens:

solid. 1. Asphaltum.
semifluid. 2. Mineral tar.
solid. 3. Mineral caoutchouc.

C. Bituminous compounds:

1. *with resinous matter.* Sp. 1. Resinasphaltum.
2. *with charcoal.* 2. Pit-coal. Var. a. Brown coal.
b. Black coal. c. Glance coal.

According to Hatchett, the elements of bitumens are carbon, hydrogen, sometimes azote, and probably some oxygen; the action of which on the other principles forms the concrete bitumens.²

Official. PETROLEUM. Lond. BITUMEN PETROLEUM. Edin. PETROLEUM BARBADENSE. Dub. Petroleum. Barbadoes Tar.

Syn. Petrole (F.) Steinshl (G.) Petrolia (I.) Nift (Arab.) Miti tel (H.)

Although these names are intended to designate the same substance, yet they are by no means to be regarded as synonymous of the same species of bitumen. The first species of the bituminous oil is properly named by the London college, the second variety of that species being the real petroleum of the shops; but the Dublin college has incorrectly given the second species of the proper bitumens as the synonyme of Bitumen Petroleum.

Petroleum is found in many parts of the world in various states of purity. When free from foreign ingredients, and

¹ Thomson's Chemistry, 4th edit. vol. ii. p. 502.

² Linn. Trans. iv. 129.

before it has been long exposed to the action of the air, it is named *naphtha*; of which the purest kind that is brought to Europe comes from Monte Ciaro, near Piacenza in Italy. "This hill consists of horizontal beds of argillite, in which pits are sunk till the water comes in; after which the naphtha oozes out of the sides and floats on the surface of the water, whence it is skimmed off every week."¹ The petroleum of the shops, however, which is much less pure, is procured from Monte Festino, not far from Modena. In the Birman empire there are 520 wells in one district, which yield annually more than 400,000 hogsheads of petroleum.

Qualities.—Naphtha is of a pale yellowish colour, thin, fluid, light, transparent, odoriferous, unctuous to the touch, and very inflammable. By long exposure to the air, and other circumstances, it passes into the second variety. Petroleum is thicker than naphtha, unctuous to the feel, semitransparent, and of a reddish or blackish brown colour. It has a strong, penetrating, not disagreeable, odour, and a bitter, pungent, acrid taste; is not quite so inflammable as naphtha, and has a much greater specific gravity. When distilled with water, it comes over nearly as clear and fluid as naphtha.

Both these varieties of bitumen combine with fat, resins, essential oil, and camphor: with alkalies they form soapy compounds; and sulphuric and nitric acids change them into solid resins.

Medical properties and uses.—Petroleum is a stimulating antispasmodic and sudorific; and as such has been given in asthma and coughs unattended with inflammation; but it is chiefly used for external purposes, as a stimulant in diseases of the hip-joint, rheumatic, and other chronic pains, chilblains, and to paralytic limbs, applied by friction.² It is, however, scarcely ever employed in either way; and on this account is not often to be procured in the shops. The dose of petroleum may be from $\text{m}\bar{x}$ to $\text{f}\bar{3}\text{ss}$ in any convenient vehicle.

BOLETUS. *Spec. Plant. Willd.*

Cl. 24. Ord. 13. Cryptogamia Fungi. Nat. ord. Fungi Linn. Juss.

G.—Fungus horizontal, porous beneath.

* Parasitic, stemless.

Spec. 3. B. ignarius. Agaric of the oak. *Sowerb. Fung. t. 34.*

Officinal. BOLETUS IGNARIUS. AGARICUS. *Edin.* Agaric.

Syn. Agaric de chêne (*F.*) Feuerschwamm (*G.*) Esca o fungo preparata (*L.*) Agarico (*S.*)

Garikoon (*Arab. and Tam.*)

This species of fungus is a parasitical plant; and is found

¹ *Mem. Sci.* 1736, p. 57, quoted by Aikin, *Dict. of Chem.* art. Bitumen.

² In the West Indies the Barbadoes tar is used both as an internal remedy and an external application in the same cases. Of the Burma Petroleum Dr. Fleming remarks, that in chronic rheumatism he had "found much greater benefit from it, than from the more costly Cajeput oil." *Asiatic Researches.*

in Britain, growing upon the decayed trunks of the ash and the oak. The pileus or hat is scaly and convex, but depressed in the centre. When young it is of a light brown colour above, and soft like velvet; white underneath, and covered with a slimy matter: but when mature it changes to dark brown, approaching to black. It is from six to ten inches in diameter; and although generally stemless, yet, it is sometimes supported on a footstalk about an inch in length.¹

The boletus which grows upon the oak is said to be the most valuable. It should be gathered in August or September, and be kept in a dry room. "The way of preparing it is to take off with a knife the white and hard part, till you find a substance so soft as to yield under the finger like shammy leather."² This must be divided into different pieces, and beaten with a hammer till they become so soft as to be torn with the finger.

Qualities.—Prepared agaric is inodorous, and has a slightly astringent taste. According to Bouillon la Grange, by whom it has been chemically examined, it contains resin, extractive, something similar to animal gelatin, and different salts.

Medical properties and uses.—Agaric has been much celebrated as a styptic, when externally applied to bleeding arteries and veins. It was introduced by Brossard, a French surgeon, in 1750, and was for some years used both on the continent and in this country: but if it really possess styptic powers greater than those of lint or sponge, which does not appear to be the case, the improved practice of surgery renders all such applications useless.

BONPLANDIA. *Plantæ Equinoctiales.* Tom. ii. p. 59.

Cl. 5. Ord. 1. Pentandria Monogynia. *Nat. ord.* Quassiæ Juss.

Gen. Char. Calyx Monophyllous, campanulate, 5 toothed. Corolla 5 petals, cohering near the base, funnel-shaped.

Spec. 1. B. *trifoliata*. Three leaved Bonplandia. *Humboldt*, l. c. tab. 97.

Officinal. CUSPARIÆ CORTEX. *Lond.* BONPLANDIÆ TRIFOLIATÆ CORTEX. *Edin.* ANGUSTURA; CORTEX. *Dub.* Cusparia bark, Bonplandia bark, or Angustura bark.

Syn. Angusture (P.) Angusturarinde (G.) Angustura (L.)

Although the London College has designated the tree which yields this bark, by the name of Cusparia *febrifuga*, as originally given to it by Humboldt, yet, we have preferred the name imposed by Willdenow, and since adopted by Humboldt.

The Bonplandia *trifoliata*, is a native of South America, growing abundantly in the woods near Carony and Alta Gracia. It is an elegant evergreen, rising to the height of from 60 to 80 feet, having a cylindrical trunk, covered with a grey co-

¹ Withering, *Bot. Arrange.* ii. 767.

² *Phil. Trans.* xlix. Part I. 29.

loured bark, and branching towards the summit. The branches are alternate, the upper ones spreading nearly horizontally. The *leaves*, which are ranged alternately on the branches, are about two feet long, independent of the petiole, and composed of three oblong ovate leaflets, pointed at each extremity, and attached at their bases to a single channelled petiole, from 10 to 12 inches in length. The *leaflets* are glandular, and when fresh, exhale an agreeable, aromatic odour. The *inflorescence* is a terminal raceme, composed of alternate peduncles, bearing from three to six flowers each: the calyx is inferior, persistent, five toothed and tomentose; the corolla is funnel-shaped, and composed of five petals, so united below as to appear as one tube, with a five cleft spreading tube. The *nectary* consists of fine glandular bodies. The *stamens*, which are shorter than the petals, have white filaments supporting oblong yellow anthers; the *pistil* is formed of five oval hairy ovaries, from the centre of which a single style rises, supporting five fleshy green stigmata. The *fruit* consists of five oval, bivalve capsules, each enclosing a single seed. The first parcels of cusparia bark were imported from Dominica in 1778; and the tree yielding it was supposed to be a native of Africa; but importations from Cadiz and the Havannah, and the travels of Humboldt and Bonpland, led to the knowledge of the real place of its growth.¹ It is brought to this country packed in casks; but the original package, Mr. Brande informs us, is curiously formed of the large leaves of a species of palm, surrounded by a kind of net-work made of sticks. It is in pieces of different lengths, some nearly flat, and others in partial quills of all sizes intermixed.

Qualities. — The odour of this bark is not strong, but peculiar; the taste bitter, slightly aromatic, and permanent, leaving a sense of heat and pungency in the throat. The pieces are covered with a whitish wrinkled thin epidermis; the inner surface is smooth, of a brownish yellow colour, and the intermediate substance mottled fawn colour, and of a compact texture. It breaks with a close, short, resinous fracture; is easily pulverized, and affords a powder which, when triturated with lime or calcined magnesia, gives a smell of ammonia. — The active matter is taken up by cold and hot water in infusion; and is not injured even by coction, but the addition of alcohol precipitates part of the extractive. The alcoholic tincture reddens litmus paper, and becomes milky on the addition of water. The watery infusion precipitates the infusion of

¹ See Brande's *Experiments and Observations on the Angustura Bark.*

galls and of yellow cinchona, but not gelatine.¹ I found that it precipitates sulphate of iron, tartarized antimony, sulphate of copper, acetate and superacetate of lead, muriate of mercury, and pure potash yellow; which confirms Vauquelin's analysis. Nitrate of silver also precipitates it yellow, but assumes a violet colour after some time. Ammonia deepens the colour, but is not precipitated. Sulphuric acid gives the infusion a brown colour, and gradually a lemon yellow precipitate is deposited; whilst nitric acid deepens the colour to a blood red, and after some time affords a lemon yellow precipitate. The muriatic acid does not affect it. Sulphuric ether takes up one part from ten of the powder, and when evaporated on water leaves a greenish yellow, very acrid resin, and renders the water milky: the addition of nitro-muriatic acid changes this milky appearance to red, slowly producing a lemon yellow-coloured precipitate, and giving the resin on the side of the glass a brown pink colour. By distillation with water the bark yields a small portion of a white essential oil. These experiments ascertain the substances which are incompatible in prescriptions with infusion, or tincture of cusparia bark; and show that it contains *cinchonin*, *resin*, a peculiar variety of *extractive*, *carbonate of ammonia*, and *essential oil*.²

Medical properties and uses.—Cusparia bark is stimulant and tonic. It was introduced in the West Indies with very high pretensions; and, although it is not superior or even equal to cinchona bark in fevers, yet it is a remedy possessed of very considerable powers. It does not oppress the stomach, but gives to it a degree of warmth; expels flatus, keeps the bowels open, and increases the appetite for food. It is particularly efficacious in bilious diarrhoea and dysentery, after due evacuations; and also proves useful in dyspepsia, hysteria, leucorrhoea, and most of the diseases in which the use of a general tonic is indicated. Mr. Brande published several cases which came under his own observation, and some from the communications of others, in which its usefulness as a remedy for intermittents appears to be confirmed; but this is disputed, particularly by Alibert, who gave it a fair trial in the hospital of St. Louis. My own experience does not enable me to give

¹ Vauquelin. *Annales de Chimie*, lix. 130.

² A species of bark in some respects resembling the Cusparia has lately been introduced upon the Continent, possessing the most deleterious quality. Planché has examined it and named it *Angustura ferruginea*. It is readily distinguished from the true bark by its greater thickness and weight, and the epidermis being of a brownish olive hue and warty. It impresses also the most nauseous and permanent bitter, when chewed. For particulars regarding it, vide *Orfila's Traité des Poisons*, tom. ii, p. 331, and *The Lond. Med. Repository*.

an opinion on the subject. Its employment is contra-indicated in directly inflammatory complaints, in hectic fever, and colliquative diarrhoea.

It may be exhibited in substance, in watery infusion, in tincture, and in the form of watery extract. The powdered bark is given in doses of from grs. v. to grs. xx, beyond which it is apt to induce nausea. It may be combined with neutral salts, magnesia, and testaceous medicines; or with powdered cinnamon, which covers its nauseous taste better than any other thing. Of the aqueous extract grs. x. is a full dose. In large doses all the forms are apt to excite nausea.

Official preparations. *Infusum Cuspariae*, L. *Tinctura Bonplandiae trifoliatae*, E. *Tinctura Angusturæ*, D.

BOSWELLIA. Roxburgh.

Cl. x. ord. 1. Decandria Monogynia. Linn.

Gen. Char. Cal. beneath, 5-toothed. *Cor.* 5 petals. *Nect.* a crenulated, fleshy cup, surrounding the lower part of the germ, with stamens inserted on its outside. *Capsule* 3-sided, 3-valved, 3-celled. *Seeds* solitary, membranous, winged.

Species. — *B. Serrata*. *Asiatic Researches*, 8vo. vol. ix. p. 377.

Official. OLIBANUM.¹ Lond. JUNIPERI LYCIAE GUMMI-RESINA.

Edin. OLIBANUM; GUMMI-RESINA. Dub. Olibanum.

Syn. *Encens* (F.) *Weirauch* (G.) *Olibano* (I.) *Koondir Zuckir* (Hind.) *Cundur* (Arab.) *Labuniya* (Syr.)

Olibanum was supposed, on the authority of Linnæus, to be the production of the *Juniperus Lycia*:² but, this opinion appears to be erroneous; for, Mr. Colebrooke has observed, "this species of juniper is a native of the south of France;" and the French botanists deny that it yields the resinous gum in question.³ On this account, therefore, and influenced by other proofs brought forward by Mr. Colebrooke, we have been induced to regard olibanum as the production of the *Boswellia serrata* of Roxburgh, although it is still referred to the *Juniperus Lycia* in the Pharmacopœias.⁴

The *Boswellia serrata* is a native of the mountains of India; and is vulgarly known under the name of *Sálaï*. It is a large tree, with the foliage crowded at the extremities of the branches. The leaves are impari-pinnate; consisting of ten pairs of leaflets, sessile, each an inch, or an inch and a half in length, obliquely ovate, oblong, obtuse, serrate, and villous; supported by round, downy petioles. The flowers, which are produced in axillary racemes, shorter than the leaves, are numerous, small, and of

¹ Quasi Oleum Libani. Colebrooke, *Asiatic Researches*, 8vo. vol. ix. p. 382.

² *Asclepias* Dioscoridis.

³ *Asiatic Researches*, vol. ix. p. 377.

⁴ Although so much used in the early ages as incense in sacrifices, and latterly, in the ceremonies of the Greek and Roman churches, yet, both ancient and modern writers have differed regarding the plant yielding it.

a pale pink colour; accompanied with minute bractæas. The calyx is monophyllous, five-toothed, and downy; the corolla composed of five oblong, spreading, exteriorly downy petals; and the nectary a fleshy, crenulate, coloured cup, adhering to the calyx. The stamens are ten, alternately shorter, supporting oblong anthers: the pistillum consisting of an ovate germen, a cylindrical style, and trilobate stigma. The capsule is smooth, three-sided, trilocular, three-celled, and three valved: each cell containing one perfect seed only, which is broad, cordate, and winged.

Olibanum is imported in chests and casks from the Levant; and is also sold at the East India Company's sales; but the Indian olibanum is not much esteemed.

Qualities.—Olibanum is a translucent, whitish yellow, brittle substance, generally covered with whitish powder, produced by the friction of the pieces against each other. Its odour when burnt is fragrant; its taste is acrid, bitterish, and somewhat aromatic. When heated, although it melts with difficulty, yet it burns brilliantly, and leaves a whitish ash, composed of phosphate, carbonate, and sulphate of lime, with muriate and carbonate of potash. When distilled alone, it affords a volatile oil; but, when in conjunction with water or alcohol no oil comes over. Alcohol dissolves three-fourths of it, forming a transparent solution; and when triturated with water, a milky solution is produced, from which the resinous matter is deposited after some time; and three-eighths only remain dissolved. Ether takes up rather more than one-half, and when evaporated on water, leaves a very pure transparent resin; while the part undissolved by it becomes white and opaque, and is almost entirely soluble in water, forming a milky solution. Hence olibanum appears to consist of resin, gum, and a volatile oil. This opinion has been lately confirmed by Braconnot, who has analysed olibanum, and found in 100 parts of it, 8 of volatile oil, 56 of resin, 30 of gum, and 5.2 of a matter resembling gum, but insoluble in water and alcohol. The oil resembled the oil of lemons in odour and colour.

Medical properties and uses.—Olibanum is stimulant and diaphoretic. It was formerly much used in affections of the chest, and externally as a vulnerary; but it is now employed only as a perfume in sick rooms.

BUBON.¹ *Spec. Plant. Willd.* i. 1439.

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

G. 546. Fruit ovate, striated, villose.

¹ *Βουβωνιον* Dioscoridis.

Species 2. B. Galbanum. Lovage-leaved Bubon. *Med. Bot. 2d. edit.* 98. t. 40.

Officinal. GALBANI GUMMI RESINA. *Lond. Dub.* BUBONIS GALBANI GUMMI RESINA. *Edin.* Galbanum Gum-resin.

Syn. Galbanum (F.) Mutterharz (G.) Galbano (I.) Galbáne (S.) Bārzud (A.) Bireejā (H.)

This species of bubon is a perennial plant, a native of Africa about the Cape of Good Hope, and of Syria, flowering in June and July. It rises 8 or 10 feet in height, with the stem ligneous at the base, and there furnished with a purplish bark; but the upper part is jointed, branching, leafy, and covered with a glaucous exudation, which can be easily wiped off. The lower leaves are nearly tripinnate, on vaginant footstalks; the uppermost are almost simple, tri-lobed, thickish, irregularly serrated, and of a greyish colour. The flowers are in terminal umbels, the principal umbel being large, and plano-convex. The involucre is composed of twelve narrow, lancet-shaped, membranous, whitish leaflets, bent downwards; but the involucrels of only six leaflets. The flowers are all fertile; the petals yellow, with inflected tips: the stamens are longer than the petals, supporting yellow anthers; and the styles two, short and tapering. Each flower is succeeded by two oblong-channelled seeds, having a thin membranous border.

When the stem of the growing plant is broken, or wounded by a knife, a cream-coloured juice flows out; and in this manner the gum-resin is procured, by making an incision, or cutting the stem across a few inches above the root; when it soon concretes, and is fit to be gathered. A small quantity exudes spontaneously from the joints of the stem. The gum-resin is brought to this country from the Levant, in cases or chests, containing from one to three hundred weight each. The best is in ductile masses, composed of distinct whitish tears agglutinated together by a pale brown or yellowish substance. It is generally much mixed with stalks, seeds, and other impurities. The separate tears are considered to be the best part of the mass. When the colour is dark brown or blackish, it must be rejected as bad.

Qualities. — Galbanum has a strong peculiar odour, slightly resembling that of turpentine; and a bitterish, warm, acrid taste. Its specific gravity is 1.212.* When triturated with water, about one-fourth of its weight is dissolved, forming a milky solution; but after standing for a little time, four parts are again deposited, and what remains undissolved by the trituration is, exclusive of the impurities, almost completely soluble in alcohol. Wine and vinegar act on it nearly in the same manner

* Brisson.

as water. Alcohol takes up one-fifth of its weight; and a yellow tincture is produced, which has the sensible qualities of the galbanum, and becomes milky on the addition of water; but there is no precipitate. Proof spirit acts slowly on it, and does not dissolve the whole, the impurities excepted. Sulphuric æther dissolves a considerable portion of galbanum, forming a bright golden-coloured tincture, which, when evaporated alone, or floating on the surface of water, leaves a yellow tenacious resin, that retains in perfection the sensible qualities of the galbanum. The part insoluble in æther is nearly wholly soluble in water. Oxymuriatic acid added to the solutions of galbanum, throws down an insoluble matter which appears to be oxidized extractive. By distillation the gum-resin "yields half its weight of volatile oil, which has at first a blue colour."¹ From our experiments, galbanum appears to consist of resin, volatile oil, gum, and extractive.

Medical properties and uses. — Galbanum is antispasmodic, expectorant, and deobstruent; and may be placed between ammonia and assafoetida. It has been found useful in hysteria, particularly when attendant on difficult menstruation; and in chlorosis. Externally it is applied as a resolvent and a stimulating suppurative to indolent tumours.

The dose is from grs. x. to ʒj, in pills; or triturated with water so as to form an emulsion. It is generally combined with other gum-resins.

Official preparations. — *Pilule Galbani comp.* L. *Tinctura Galbani.* D. *Emplastrum Galbani.* D. *Emplast. Galbani compositum.* L.

CALAMINA. Calamine. See *Zincum*.

CALUMBÆ RADIX. *Lond.* COLOMBÆ RADIX. *Edin.* COLOMBO; RADIX. *Dub.* Calumba Root.

Syn. Colombe (F.) Kolumbowurzel (G.) Colomba (I.) Kalumb (Mozambique) Columbo vayr (Tam.)

The plant which yields this root has not yet been described; but Willdenow supposes it to be a species of *Bryonia*. The root was formerly erroneously supposed to be named from the principal town in the island of Ceylon, which was regarded as its place of export. It is, however, now known to be a staple article of export with the Portuguese, at Mozambique, whence an entire root was taken to Madras by Mons. Fortin, in 1805, and a plant raised from it there by Dr. Anderson. "From a drawing in the possession of the Linnæan Society, the plant appears to be of the natural order of *Menispermæ*; but the genus cannot be determined, in consequence of the female flowers not having been as yet seen."² The following

¹ *Thomson's Chemistry*, 4th edit. v. 142.

² *Powell's Translation of the London Pharm.* p. 22.