ABIETIS RESINA. Vide *Pinus Abies.*

ABSINTHIUM. Vide *Artemisia Absinthium.*

ACACIA. *Spec. Plant Willd.* iv. 1085.

Cl. 23. *Ord.* 1. Polygamia Moncœcia. *Nat. ord.* Lomentaceæ *Linn.* Leguminosæ *Juss.*

G. 1902. *Hermaph. Calyx* five-toothed. *Corolla* five-cleft, or formed of five petals. Stamens 4-100. *Pistil.* 1. *Legume* bivalve. *Male. Cal.* five-toothed. *Cor.* five-cleft, or formed of five petals. *Stam.* 4-100.

**** *Leaves bipinnate, stipular thorns or prickles, elongated spikes.*

Species 73. Acacia *Catechu.*[1] Catechu. *Med. Bot. 2d edit. t.* 157.

***** *Leaves bipinnate, stipular thorns, globular spikes.*

Species 87. Acacia *vera.* Acacia, or Egyptian Thorn, *Med. Bot. 2d. edit. t.* 158. *Vesl. Ægypt. t.* 8. *bona.*

1. ACACIA CATECHU.

Officinal. CATECHU EXTRACTUM, *Lond.* ACACIÆ CATECHU EXTRACTUM, *Edin.* CATECHU; EXTRACTUM E LIGNO, *Dub.* Extract of Catechu.

Syn. Cachou (*F.*), Katechu; Kaschu (*G.*), Cato o Catecu (*I.*), Catecu (*S.*) Cato (*Portug.*), Cutt (*Hind.*)

This tree grows pentifully in the mountains of Kanhana in Hindostan; and flowers in June. It seldom exceeds twelve feet in height, and one foot in the diameter of its stem, which is covered with a thick, rough, brown bark, and towards the summit is divided into many close branches. The leaves are placed alternately on the younger branches; and are composed of fifteen or thirty pairs of pinnæ, nearly two inches long, each having about forty pairs of linear leaflets, beset with short hairs; with a small gland on the common petiole between the bases of each pair of the pinnæ. At the base of each leaf are two short, recurved, compressed spines. The flowers are hermaphrodite and male; axillary, and on close spikes four or five inches long; the calyx is tubular, hairy, dividing into five oval-pointed segments; the corolla of one piece, whitish, twice the length of the calyx, and of the same form. The filaments are numerous, double the length of the corolla, crowded with roundish anthers, and adhering at the base of the germen, which is oval, supporting a slender style the length of the filaments, and terminated by a simple stigma. The fruit is a lanceolate, compressed, smooth, brown pod, with an undulated thin margin: and contains six or eight roundish flattened seeds, which emit a disagreeable odour when chewed.

The inner wood of this tree is of a brown colour; and from it, according to Mr. Ker's statement[2], the *catechu* is prepared. "After felling the trees, the manufacturer carefully cuts off all

[1] Ἄκανθος τῆς Ἀρίας χώρας, Theophrasti. Dioscorides also mentions this species of Acacia. The name in Bahar is *Coira* or *Keira.*

[2] *Med. Obs. and Enquir.* vol. v. p. 151.

the exterior white part of the wood. The interior coloured part is cut into chips, with which he fills a narrow-mouthed unglazed earthen pot, pouring water upon them until he sees it among the uppermost chips: and when this is half evaporated by boiling, the decoction, without straining, is poured into a flat earthen pot, boiled to one-third part, and then set in a place to cool for one day. The decoction is afterwards evaporated by the heat of the sun, stirring it several times in the day; and, when it is reduced to a considerable thickness, it is spread upon a mat or cloth, which has previously been covered with the ashes of cow-dung. The mass is lastly divided into square or quadrangular pieces by a string, which are completely dried by turning them in the sun, until they are fit for sale." Before this account was published, catechu was generally supposed to be extracted from the Areca nut: there are, however, two other species which are extracted from that nut; the one named *Cuttacamboo*, the other *Cashcutti*, and both are used by the Indian practitioners.

This extract, when first introduced as a medicine into Europe, was named Terra Japonica, from the supposition that it came from Japan, and was an earth. It is named *cutt* by the natives of Hindostan, *cutch* by the English, and by different authors *khaath*, *cate*, *cachou*, *cachore*,[1] and *catechu*[2]. There are two varieties of the true catechu; one brought from Bengal, the other from Bombay. It is imported into Britain in bags, and sometimes in boxes or chests, containing from 3 to 4 cwt. each; and occasionally in small squares, in boxes, which are at all times preferred. Pale and dark-coloured catechu are mixed in the same package.

Qualities. — Pale catechu is generally in round balls, or small square cakes of a pale reddish brown colour, light and friable, with a lamellated texture, and rough fracture; has a bitterish and astringent taste, leaving a degree of sweetness on the palate; is inodorous, and has a specific gravity of 1·39. The dark, which is in round masses, has a deep chocolate-colour internally, with the hue of rusty iron on the outside: the texture is uniform, and the fracture resinous and shining. It is heavier than the pale, the specific gravity being 1·45, and has a more austere and bitter taste; but in other respects agrees with it. Both are often much adulterated with sand, and other impurities. Water at 60° dissolves 3 parts in 4 of pale catechu: the alkalies deepen the colour of the solution, until on standing it becomes of a deep mahogany hue. Ac-

[1] Bolduc, *Mem. Acad.* 1709, p. 293.

[2] This name is said to be compounded of two Oriental words, *cate*, which signifies a tree, and *chu*, juice. *Kerr*, l. c.

cording to the analysis of Sir H. Davy, there appears to be very little difference between the two varieties. Both are almost entirely soluble in the mouth. 100 grains, macerated in 18 fluid ounces of water at 52°, left 7½ grains only undissolved, and these were chiefly lime, aluminous earth, and sand. The solutions are inodorous, and slightly redden tincture of litmus. Sulphate of iron and gelatine throw down precipitates in them[1], demonstrating the presence of *gallic acid* and *tannin:* what remains after the action of alcohol is nearly a pure *mucilage;* and, when fine powder of catechu is washed with water until all the tannin and mucilage are dissolved, a pale red *extractive matter*, inodorous, very slightly astringent, sweetish, and soluble in water and in alcohol, is obtained as a residue. The proportions of these constituents, according to Davy's experiments, were as follows: 200 grains of *Bombay catechu* afforded 109 of tannin, 68 of extractive matter, 13 of mucilage, and 10 of earths and other impurities. The same quantity of *Bengal catechu* gave 97 of tannin, 73 of extract, 16 of mucilage, and 14 of impurities.[2]

Medicinal properties and uses. — Catechu is one of the most valuable of the vegetable astringents; and as the dark-coloured contains the greater quantity of tannin, on which its astringency depends, it is to be preferred for medicinal use. It is employed with the best effects in dysentery, and diarrhœa, when the use of astringents is admissible; in alvine and uterine hæmorrhages, leucorrhœa, gleet, and in obstinate catarrhal affections. As a local astringent it is used in sponginess of the gums, and aphthous ulcerations of the mouth and fauces: and I have found the slow solution of a small piece of it in the mouth, a certain remedy for the troublesome cough induced by a relaxed uvula, hanging into and irritating the glottis: and on the same principle it is used by public singers to prevent hoarseness. Dr. Paris recommends it as a dentifrice, especially when the gums are spongy: and I can recommend it as an excellent toothpowder when combined with three parts of finely powdered charcoal.[3] In prescribing it, the practitioner should bear in mind, that alkaline salts destroy its astringency; and metallic salts and solution of isinglass form with it insoluble compounds.

An ointment composed of ℥jv of catechu, ʒix of alum, ℥iv of white resin, and f℥x of olive oil, with a sufficient quantity of water, is in great repute in India as an application to ulcers.

---

[1] Tincture of muriate of iron produces a precipitate, which, on the addition of Lig., Potassæ is redissolved, unless the quantity of the tincture be great, and the solution becomes of a deep purple or port wine colour.

[2] *Philosophical Transactions*, 1803.

[3] *Pharmacologia*, 3d edit.

The dose of catechu may be from grs. x to ʒj.

Officinal Preparations. *Infusum Catechu.* L. E. *Tinctura Catechu.* L. E. *Electuarium Catechu compositum.* E. D.

2. ACACIA VERA.[1]

Officinal. ACACIÆ GUMMI, *Lond.* ACACIÆ ARABICÆ GUMMI, *Edin.* GUMMI ARABICUM, *Dub.* Acacia Gum, *or* Gum arabic.

Syn. Gomme Arabique (*F.*), Arabischen gummi (*G.*), Gomma Arabica (*I.*), Goma Arabiga (*S.*) Tolh (*A.*), Vullām pisin (*Tam.*).

This species of acacia is found in almost every part of Africa; but the tree that yields the gum which is exported from Barbary to Great Britain, grows principally in the Atlas mountains, and at Bled-eljerrede; flowering in July. It has a hard withered aspect, and does not rise many feet in height. The stem is crooked, and covered with a grey bark, which on the branches has a purplish tinge: the leaves are alternate, bipinnate, composed of several pairs of opposite pinnæ, with a small gland on the common petiole, between the base of each pair, and having numerous pairs of narrow elliptical, smooth leaflets. On each side of the base of the leaves are two long diverging white spines. The flowers are hermaphrodite and male, crowded into globular heads, (*capitula*,) rather than spikes, which are supported on slender peduncles, and rise, four or five together, from the axillæ of the leaves: the calyx is small, bell-shaped, and five-toothed; the corolla is divided into five narrow yellowish segments; the filaments are numerous, capillary, bearing roundish yellow anthers; the germen is conical, with a slender style and simple stigma; and the pods, which are three or four inches long, and half an inch broad, contain several flattish brown seeds.[2]

The gum exudes naturally from the bark of the trunk and the branches of the tree, in a soft, nearly fluid state, and hardens in the air without losing its transparency. It is collected about the middle of December. "It appears," Mr. Jackson informs us, "to be the product of disease; for in the hottest seasons, and from the most sickly trees, the greatest quantity is procured. Very little or none is got in a moist, cool, or mild summer. It is gathered in July and August when the weather is hot and parching. It has a faint smell when first stowed in the warehouses, and is heard to crack spontaneously for many weeks. The best gum is procured from Morocco, Rasel-wed in the province of Suse, and Bledhummer in the province of Abda."[3]

[1] Ἀκανθος αἰγυπτίη. Hi pocratis. Ακακία, Dioscoridis. In Barbary it is named *attaleh*. — *Jackson's Morocco*, 4to. p. 33.

[2] From the unripe pods the *acaciæ veræ succus* of the ancients was expressed. Vide *Murray App. Med.* ii. 412. The seeds yield a reddish dye. *Jackson*, l. c.

[3] *Jackson*, p. 83. In 1805, the quantity exported from Mogodor to London was 277,534lbs. Ib. l. c.

It is imported from Barbary and Morocco in large casks. Gum Senegal, which was introduced into Europe by the Dutch in the 17th century, and is often mixed with the Barbary gum, is obtained from various trees, but chiefly from two, one called *vereck*, which yields a white gum, the other called *nebuel*, which yields a red gum.[1]

Qualities. — Gum is generally in irregularly shaped pieces, hard, brittle, semitransparent, its fracture possessing a considerable degree of lustre; and is neither fusible nor volatile. When pure, it is almost colourless, or of a pale yellowish hue; is insipid, inodorous, and dissolves completely away in the mouth. Its specific gravity varies from 1,3161 to 1,4317. It is often mixed with the gum Senegal, which is nearly as pure, but in larger masses, generally of a darker colour and more clammy and tenacious, and with other gums less pure, particularly a kind brought from the East Indies, which is still darker-coloured and less soluble.[2]

Gum is soluble in water, either cold or hot, and forms a viscid solution; which, if evaporated, becomes very thick and adhesive, and at length the gum is obtained in a concrete form, equally soluble as before. It is also soluble in the vegetable acids; but is insoluble in alcohol, in ether, and in oils: yet, owing to its viscidity, it renders by trituration both the volatile and fixed oils and resins miscible with water, forming a white opake mixture. Concentrated sulphuric acid blackens, and partially decomposes it, and acetic acid is produced: strong nitric acid converts it into the oxalic, malic, and saccholactic acids; muriatic exerts very little action on it; but the oxymuriatic (*chlorine*) changes it into citric acid. Solutions of the alkalis and alkaline earths dissolve it without producing on it much change. For an account of the action of other agents on it, see *Mucilago acaciæ.*

The chemical analysis of gum, by Gay Lussac and Thenard shows, that its constituents are 42,23 of carbon 6,93 of hydrogen, and 50,82 of oxygen, with a small proportion of nitrogen

---

[1] Although, by the treaty which delivered up Senegal to France in 1783, the gum trade was reserved to England, and has never been annulled, yet no advantage was taken of this right by the English, until the commencement of the present year (1821); when the trade was again renewed at Portendic, under the protection of Commodore Sir George Collier. — Portendic is in latitude 18° 19′ north, by 16° 10′ west of Greenwich. The Acacia forest of Sahel, which yields a very pure white gum, is sixty miles, and the forest of El-Hiebar eighty miles from Portendic. The gum is collected and brought to the coast by the Trarzhar Moors, who receive in exchange baft and other English goods: "the usual quantity given for a piece of blue baft, which costs from fifteen to thirty shillings, is from 100 to 133 lbs. weight of gum." *Sierra Leone, Royal Gazette,* May 26th, 1821.

[2] The gum which exudes from the cherry, plum, and other trees of the genus *Prunus,* in this country is cerasin; but the gum alluded to is very similar to gum arabic, and is furnished by the Acacia *Arabica,* or Babul tree of Hindostan. The gum is called *Babuled gund,* by the natives.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0152-6

and lime; which last element is supposed to render it incapable of undergoing the fermentative process.[1] I have found, however, that it, nevertheless, contains a small proportion of gluten; for when rubbed up with a spiriteous solution of guiaic, a blue colour is evolved.

Medical properties. — Gum exerts no action on the living system; but is a simple demulcent, serving to lubricate abraded surfaces, and involve acrid matters in the primæ viæ; and it effects these purposes the more readily from its passing through the bowels, scarcely acted upon by the assimilative functions.[2] In the solid form it is scarcely ever given, unless to sheath the fauces, and allay the tickling irritation which occasions the cough in catarrh and phthisis pulmonalis; in which cases a piece of it is allowed to dissolve slowly in the mouth. It is chiefly used in the state of mucilage. Vide *Mucilago Acaciæ*, Officinal preparations. *Mucilago Acaciæ*, L.E.D. *Emulsio Acaciæ Arabicæ*, E. *Emulsio Arabica*, D. *Troc. gummosi*, E.

ACETOSÆ FOLIA. Vide *Rumex Acetosa*.

ACETOSELLA. Vide *Oxalis Acetosella*.

ACETUM, *Lond. Edin.* ACETUM VINI, *Dub.* Vinegar.

Syn. Vinaigre (*F.*), Essig (*G.*), Aceto (*I.*), Vinagre (*S.*), Vinacdike (*Danish*), Winättika (*Swed.*), Canchiea (*Sans.*), Khull (*Arab.*), Chooca Wynazin (*Malay*), Kadi (*Tam.*), Cirka (*Pers.*), Kudidia (*Cyng.*), (*Belg.*).

This is a well known acid liquor, produced by exciting the acetous fermentation in substances which have undergone, or are susceptible of, the vinous fermentation. Sugar and water, the saccharine vegetable juices, infusions of malt, malt liquors, cyder, and wine[3], may be converted into vinegar, by adding to them yeast or any other ferment, and exposing them in vessels to which the air has access, in a temperature between 75° and 90°. In wine countries, as France and Italy, vinegar is made from the lees of wine, which are worked up with new wine, then strained, and exposed to the heat of the sun, or placed in stoved rooms, in casks set upright, with a hole cut through the heading, and left open until the whole of the liquor is thoroughly acidified. In this country it is prepared chiefly from malt. An infusion of malt is made, then properly cooled, and put into large and deep fermenting tuns; "where it is mixed with yeast, and kept in fermentation for four or five days." The liquor is now distributed into smaller vessels, placed in a chamber heated by means of a stove; and kept

---

[1] *Murray's Chemistry*, vol. iv. 180. The last analysis, which is by Berzelius makes the components in 100 parts to be, hydrogen 6,792, carbon 41,752, and oxygen 51,456.

[2] It is nevertheless sometimes used as food by the Moors: and at Senaar, in Dongola, is much employed in cookery.

[3] New wines are better for this purpose than old, as they contain more extractive matter.

there for about six weeks, or until the whole is soured. This is emptied into common barrels, which are placed in the open air, the bung-hole of each being simply covered with a tile to keep out the wet; and in this situation such a gentle fermentation goes on, that in four or five months, according to the heat of the weather, perfect vinegar is formed. The process is then completed in the following manner: "Large tuns are employed, with a false bottom, on which is put a quantity of the refuse of raisins and other fruit, left by makers of home-made wines, called, technically, *rape*. These rape tuns are worked by pairs; one of them is quite filled with the vinegar from the barrels, and the other only three quarters full, so that the fermentation is excited more easily in the latter than the former, and every day a portion of the vinegar is laded from one to the other till the process is finished."[1]

The theory of the acetous fermentation is not yet fully understood. Air and a moderate temperature are necessary for exciting and keeping it up. The former affinities between the components of the ingredients are broken, and new ones formed; while a quantity of carbon is thrown off, and uniting with the oxygen of the air, produces the carbonic acid gas, which appears during the process. Although alcohol alone cannot be converted into vinegar, yet the strongest wine produces the best vinegar; and hence that made from malt is weaker, less pure, and more liable to spoil, than wine vinegar. The essential part of vinegar is *acetic acid* and *water*, in the proportion of five parts to ninety-five of water[2]: but it also contains colouring matter, some undecomposed *alcohol*, *gluten*, *mucilage*, *sugar*, *extractive matter*, and often some *malic* and *tartaric acids*.

Qualities. — Vinegar, when well made, is clear and limpid; has an agreeable penetrating odour, and a pleasant acid taste. The colour varies from a pale yellow to a deep red; and as it is derived from the extractive matter, malt vinegar is always higher coloured than wine vinegar. When long kept, particularly if it be exposed to the air, vinegar becomes muddy and ropy, acquires an unpleasant smell, loses its acidity, and putrefies. It, however, may be kept good for a much longer time, if it be boiled for a few minutes, so as to coagulate and separate the gluten, on the presence of which the above changes depend; and be preserved in well-corked bottles. It is sometimes adulterated with sulphuric acid, which may be detected by a solution of acetate of baryta, forming, when

---

[1] *Aikin's Dictionary of Chemistry*, art. *Vinegar*.
[2] *Journal of Science and the Arts*, vol. vi. p. 259.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0154-8

dropped into the suspected vinegar, a white precipitate, which is *insoluble* in nitric acid, after being exposed to a strong heat. If sulphate of baryta be employed, sulphate of potass or of lime will produce a precipitate, if present in the vinegar, in which case a preferable test is chalk short of the quantity necessary to saturate the portion of vinegar; for, by throwing the whole on a filter, and adding distilled water, the acetate of lime is dissolved, but the sulphate which is formed, if sulphuric acid be present, remains undissolved on the filter. Muriatic acid is detected by nitrate of silver forming a precipitate, which is insoluble in nitric acid; but soluble in liquid ammonia. Nitric acid is detected by first mixing some common salt in the vinegar, then saturating with potass and evaporating to dryness. Gold leaf is next to be diffused through equal parts of sulphuric acid and water, and the mixture added to the dry residue and boiled, when, if the vinegar contained nitric acid, the gold leaf will be dissolved.[1] If *grains of paradise*, *spurge flax*, *capsicum* or *Pellitory* of Spain, which are sometimes used to adulterate vinegar, be present, they can be detected by the taste.

The use of vinegar as a condiment, and an antisceptic, for pickling and preserving animal and vegetable matter, is well known.

Medical properties and uses. — Vinegar, when taken into the stomach, acts as a refrigerant, promotes diaphoresis and the discharge of urine; and is a powerful anti-narcotic: its external action on the living fibre is moderately stimulant and astringent.

In inflammatory fevers it may be used to acidulate the ordinary beverage. It is given as a remedy in putrid diseases and scurvy; and is the most easily procured, and the best means of counteracting the fatal effects of over doses of narcotic poisons; for which purpose, it should be administered in doses of a table spoonful, frequently repeated, after the stomach has been freely emptied by a proper emetic. It is employed as a glyster in obstinate costiveness; and externally in the form of fomentation, or of lotion, in burns, bruises, sprains, and chronic ophthalmia; and, diluted with water, it is the best lotion for clearing the eye of small particles of lime, when they adhere to any part of the ball or the lids. Its vapour is inhaled in putrid sore throat; and is diffused through sick rooms with the view of neutralizing pestilential effluvia: but as a fumigation it has little efficacy. The dose of vinegar is f ʒj to f ʒiij; and the quantity given in glysters f ℥j to f ℥ij.

[1] *Brande's Manual of Pharm.* p. 5.

Officinal preparations. *Acidum aceticum, dilutum,* L.E.D. *Syrupus Aceti,* E.

ACIDUM ACETICUM (*impurum?*) FORTIUS, *Lond.* Strong (*impure?*) Acetic acid. (*Spec. grav.* 1.046. *Lond.*)

This is the acetic acid distilled from wood. It is procured by decomposing the wood by means of heat in large iron cylinders, during which the acid rises in a gaseous form; but being conducted through pipes kept cool by passing through barrels of water, it ultimately comes over in a liquid state. It is of a deep brown colour, and has a strong empyreumatic odour when it is first obtained; but, as it is allowed to stand undisturbed for a few weeks, until it deposits a peculiar kind of tar, and is then re-distilled, it loses a large portion of its colouring matter, and much of its empyreumatic odour. It is next saturated with lime, so as to form an impure acetate of lime, which is decomposed in a proper apparatus by sulphuric acid. The sulphate of lime, which is formed in this part of the process, remains in the still, and the acetic acid passes over. In some instances the decomposition is effected by means of sulphate of soda, which produces an acetate of soda, and sulphate of lime, the former of which being decomposed by sulphuric acid, the acetic acid and sulphate of soda are obtained. M. Stolze of Halle has discovered a mode of purifying it by means of sulphuric acid, manganese, and muriate of soda, and subsequent distillation.[1]

Qualities. — When well prepared, this acid is colourless and limpid like water, has the sharp, pleasant taste and penetrating odour of vinegar; but combined with these, there remain a peculiar flavour, and a slight empyreumatic aroma not unlike that of Westphalia ham. No process has, hitherto, been able to separate this empyreuma; and, therefore, it cannot, strictly speaking, be regarded as pure acetic acid moderately diluted, as its appellation in the Pharmacopœia of the London College imports. When of the specific gravity 1.046, it should contain 28.23 per cent. of real acid, and 71.57 of water, or be six times the strength of common vinegar of the sp. gr. 1.009[2]; and one hundred grains of it should require eighty-seven grains of crystallized subcarbonate of soda to saturate them. It is extremely volatile; and, when held near carbonate of ammonia, its vapour unites with that of the

[1] Although this modification of the acetic acid has only lately come into use, yet it is noticed by Glauber under the name "*Vinegar of wood,*" and it was known in England before the year 1661, under the name of "Sour spirit, or vinegar of box-wood." Vide *Sceptical Chemist,* quoted in *Journal of Science,* vol. viii. p. 368.

[2] At sp. gr. 1.043 the proportions are, acetic acid 23.67, water 76.33, in 100 parts. *Phillip's Trans of Pharm. Lond.* 1824.

ammonia, forming a white opaque smoke, which is a dry acetate. In every respect, indeed, it possesses the same chemical properties as diluted, pure acetic acid. If pure it will remain colourless when mixed with sulphuric acid, and form a colourless salt when saturated with potass.

Medical properties and uses. This acid is stimulant and antiseptic. When sufficiently diluted, it may be employed for the same purposes as distilled vinegar; but, it must be acknowledged, that, when saturated with ammonia, the solution of the *acetate* is more nauseous than that which is prepared with distilled vinegar. In diluting it for pharmaceutical purposes, care should be taken that distilled water only be employed; for when spring water is used for this purpose, the diluted acid, when added to lotions containing acetate of lead, causes the lotion to become milky, owing to the decomposition of the acetate and the formation of sulphate of lead, which is insoluble. It has been found useful in dressing phagedenic ulcers, the fetor of which it corrects; promoting the formation of healthy pus, and softening the hardened edges of the sores. Its antiseptic qualities are so considerable, that it has been used for preserving both animal and vegetable substances; and might be advantageously employed for anatomical preparations.

Officinal preparations.—*Potasse Acetas*, L. *Plumbi Acetas*, L.

A'CIDUM CITRICUM, *Lond.* ACIDUM CITRICUM CRYSTALLIS CONCRETUM, *Dub.* Vide *Acidum Citricum* among the preparations.

A'CIDUM SULPHURICUM, *Lond. Edin. Dub.* Sulphuric Acid. (*Specific gravity*, 1,850. *Lond.* 1,845. *Edin. Dub.*)

Syn. Acide sulphurique *(F.)*, Vitriolöl schweffelsaure *(G.)*, Vitriool oli. — Reines Zwavebzuur *(Dutch)*, Vitriol olje *(Dan.)*, Vitriolja, Swafwelsyra *(Swed.)*, Acido solforico *(I.)*, Gundaica Atr. *(H.)*, Gunduck Trāvagum *(Tam.)*, Arckgowgird *(Pers.)*, Rooch *(Arab.)*.

This acid is said to be found in a concrete state, in the cavities of some volcanic mountains, and dissolved in some mineral waters: but for the purposes of medicine, and the arts, it is prepared artificially, either by decomposing sulphate of iron [1] by the process of distillation in close vessels; or by the combustion of sulphur. The first mode is the most ancient,

[1] Hence the old names, oil of *vitriol* and vitriolic acid, which are still the commercial names of this acid, from *green vitriol*, the old name of the sulphate of iron. This method is still practised at Nordhausen in Germany. The acid is disengaged from the oxide of iron by the heat; but, owing to the small quantity of water which it contains, it is of greater specific gravity and more fuming than the acid which is manufactured in this country. The specific gravity of the fuming acid of Nordhausen is 1.896.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0157-6

and is still employed in several places on the continent; but the second is that generally adopted by the manufacturers in Great Britain, and therefore requires particularly to be described.

Into a chamber lined with sheet-lead, having no opening but a small door placed a few inches from the floor, and made to shut very close, water is poured so as to cover the floor, and rise upon it to the height of one or two inches. A stand is then introduced, on which is placed an earthen pot, containing a mixture of nine parts of refined Sicilian sulphur, and one of nitre, which is kindled by means of a red-hot iron, and the door instantly closed.[1] The oxygen of the air of the chamber, and that of the nitre, keep up the combustion of the sulphur, and form sulphurous acid gas, and nitrous acid, which, uniting, lose their gaseous character, and coming in contact with the water below, the sulphurous acid is changed into sulphuric acid at the expense of the nitrous acid, which being thus robbed of its oxygen, escapes in the form of nitrous gas. This gas now rising to the roof of the chamber, towards the aperture, attracts a fresh supply of oxygen, and becomes again nitrous acid, which descending, owing to its density among the sulphurous acid gas, once more converts it into sulphuric acid, and is again disengaged when it comes in contact with the water, to undergo fresh combinations and decompositions, which go on successively until the whole of the sulphurous acid is changed into sulphuric acid. But repeated charges of the sulphur and nitre are required to be constantly introduced at intervals of six or eight hours, for the space of two or three weeks, before the water is sufficiently acidified. It is then drawn off through a leaden pipe with a stop-cock at the bottom of the chamber; and contains, besides sulphuric acid, some sulphurous acid, and a portion of nitric oxide. The liquor is at first of a brownish colour; but after it is concentrated and purified, first, by evaporation in leaden boilers, and afterwards by boiling in large green glass retorts, or in platina alembics, it becomes a colourless, dense fluid, having, when perfectly pure, a specific gravity not exceeding 1.8485; and is brought to market in large globular glass bottles, surrounded with wickerwork, and sold under the name of *oil of vitriol.*

Sulphuric acid thus prepared is not perfectly pure, but is united with about three or four per cent. of saline matter, which consists of two-thirds of sulphate of potass, (owing to the acid uniting with the potass of the nitrate employed in the combustion of the sulphur,) and one-third of sulphate of lead

[1] This process was first used by Dr. Roebuck in 1749. *Edin. Phil. Trans.* vol. iv.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0158-1

derived from the chambers in which it is manufactured. Both these impurities are precipitated by adding three parts of distilled water to the acid, which can again be concentrated by distillation: thence the addition of water is a good test of the purity of this acid. The lead is thrown down in the form of a white insoluble powder; from which the pure acid can be decanted. The amount of these impurities may be readily ascertained by evaporating a definite weight of the acid in a platina cup, placed on the red cinders of a common fire.[1] It is sometimes adulterated with sulphate of potass, for the purpose of increasing its specific gravity; in which case the best method of detection is to saturate the suspected acid with ammonia, and then to expel the sulphate of ammonia thus formed by a red heat: the sulphate of potass with which the acid was adulterated will remain fixed. According to Dr. Ure, the pure liquid acid, which is, accurately speaking, a hydroacid, consists of about 81.54 parts of real acid, and 18.46 of water; and the elements of the real acid, according to the estimate of Dr. Thomson[2], which is probably the most accurate on this subject, are 40 of sulphur, and 60 of oxygen, in 100 parts of acid; or one atom of sulphur, and three atoms of oxygen: but with regard to these proportions chemists are not agreed.[3]

Qualities. — Liquid sulphuric acid, when pure, is as colourless and transparent as water[4], inodorous, corrosive, heavy; and has the consistence of oil: its specific gravity at a temperature of 60° Fah. is 1.8485, and one fluid-ounce weighs fourteen drachms. It has all the generic characters of an acid; reddening the vegetable blue colours when diluted with a sufficiency of water; but, when undiluted, it turns vegetable yellow colours brown. Even when largely diluted, it has an intensely acid taste. When rubbed between the fingers it feels at first unctuous, owing to its dissolving the cuticle, and afterwards excites a burning sensation. It freezes at 15° into six-sided prismatic crystals[5], bevelled at both extremities; and, when of the specific gravity 1.845, boils at 590°.[6] It attracts water so rapidly from the atmosphere, as to increase its weight one-third in twenty-four hours, and to double its

---

[1] Dr. Ure, who suggested this test, says, "if more than 5 grains of matter remain from 500 of acid, we may pronounce it sophisticated." *Journal of Science and the Arts*, vol. iv. p. 115.

[2] *System of Chem.* 5th ed. vol. i. p. 288.

[3] Bucholz makes the proportions to be 57.5 of sulphur and 42.5 of oxygen.

[4] Sulphuric acid is so easily coloured by contact with either vegetable or animal matters, without being deteriorated, that we cannot regard the slight colour which it acquires from these circumstances as any indication of its impurity.

[5] *Macnab, Hudson's Bay.* [6] *Dalton.*

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0159-9

weight in the course of a month, (hence the necessity of keeping the air excluded from it;) and at the moment it unites with water the temperature of the mixture is much raised. It acquires a brown colour when mixed with any vegetable matter[1], and therefore bottles in which it is kept must be stopped with glass stoppers. When brought to sp. gr. of 1.780, by being diluted with water, it boils at 435°, and freezes at 45°, or 13 degrees above the freezing point of water; a fact important to trading chemists, as in this state it is apt to burst the bottles in which it is kept, by its expansion in the act of freezing.[2] It forms neutral salts, termed *sulphates*, with the alkalies, earths, and metallic oxides, and decomposes the alkaline and earthy sulphurets. The strength of this acid is readily determined by saturating it with dry subcarbonate of soda, 100 grains of which neutralize 92 grains of the pure fluid acid, of the sp. gr. 1.848.

Medical properties and uses. — This acid is a valuable tonic, astringent, and antiseptic; but as it is employed internally in a diluted state only, its medicinal powers shall be explained under the article *Acidum Sulphuricum dilutum*. Although it powerfully corrode the skin, yet, on account of its fluidity, it cannot be applied as an escharotic: but when united with sixteen times its weight of lard, it forms an ointment which has been successfully used in the cure of scabies. It is a strong corrosive poison. When it has been taken into the stomach, either accidentally or as a poison, the best antidotes are chalk and water, or magnesia and water.[3]

Officinal preparations. *Acidum sulphuricum dilutum*, L. E. D. *Acid. sulphuricum aromaticum*, E. *Sulphas potassæ*, E. *Ferri sulphas*, L. E. D. *Hydrargyri Oxymurias*, L. E. D. *Sub-sulphas hydrargyri flavus*, E. *Zinci sulphas*, L. E. D.

ACIPENSER. *Syst. Nat. Gmelin.* 1483.

Cl. 4. *Ord.* 6. Pisces, Chondropterygii.

G. 134. *Head* obtuse; *mouth* far beneath the head, without teeth; *cirri* four under the nose, before the mouth. *Branchial apertures* lateral. *Body* elongated, with many series of angular tubercles.

Spec. 2. Acipenser *Ruthenus*. The Sterlet, or small sturgeon.

Spec. 3. Acipenser *Huso*. The Beluga, or great sturgeon.

Officinal. ICHTHYOCOLLA, *Dub.* Isinglass.

---

[1] This is owing to its strong affinity for water, breaking the affinities which exist between the vegetable components, so as to occasion the hydrogen and oxygen to unite and form water, while the carbon is precipitated.

[2] See *Parke's Chemical Essays*, vol. ii.

[3] I witnessed a case in which a fluid ounce of the strong acid was swallowed, with the intention of committing suicide, by a farrier; and, although it remained an hour in the stomach before it was ejected by vomiting, yet, the person recovered. T.

Syn. Ichthyocolle (*F.*), Hocusenblase (*G.*) Huisenblas[1] (*Dutch*). Husblas (*Dan.*), Husblas (*Swed.*), Harukbi (*Pol.*), Colla di Pisce o Ittiocolla (*I.*), Cola de Pescade (*S.*), Cola de Peixe (*Port.*).

The beluga, the sterlet, the kester, the sturgeon, and other species of Acipenser, are caught in the Volga, Danube, Ural, Oby, and Irtysh rivers; and the Caspian sea. The sturgeon is oviparous. The body is pentagonal, in length from 5 to 24 feet, of a dirty olive colour on the upper part, which is studded with five rows of bony tubercles, one row on the back and two rows on each side; while the underside of the fish is flat, and of a silvery white colour. There is a single dorsal fin near the tail, one ventral also near the tail, one anal, and two pectoral fins. The tail is bifurcated; and the upper part longer than the under. The swimming bladder is very ample, and communicates by a large aperture with the æsophagus. The flesh of the sturgeon is agreeable to the palate, particularly that of the sterlet; and the roe, prepared in a particular manner, is eaten as a delicacy under the name of Caviar.

Isinglass is prepared in Russia from the air-bladders or sounds of all the species of the sturgeon; and in Lapland it is made from several species of the perch.[2] That however, which is made from the beluga is reckoned the best. The process, which is carried on during summer only, as frost, it is said, impairs its qualities, varies in different places: and on this account the quality of the isinglass made from the same fish at one place differs from that which is made at another. On the Volga, the sound is taken from the fish, slit open, well washed, and freed from the thin membrane which envelopes it; then exposed to stiffen a little in the air, rolled, and pinned, by means of a wooden peg, into a heart shape; in other places it is folded into leaves, or simply dried without any care, or boiled.[3] The first kind is the best. Isinglass is imported from Petersburgh in bales. Four sorts are brought; *long staple*, *short staple*, *book* and *leaf*. "The finest is that which has the longest *staple*, as it is called: it is the thinnest and most flexible;" and is perfectly devoid of odour and taste. It should be composed of dry, whitish, nearly transparent, inodorous membranes.

Persons in London subsist by picking the staple into shreds, in which state it is generally sold; but as it admits of adulteration when picked, it should always be purchased in the staple.

Qualities.—Isinglass is insipid, and inodorous. When soaked

---

[1] The English name is a corruption of the Dutch, which means floating bladder; being derived from *hyzen*, to hoist, and *blas*, a bladder.

[2] Isinglass might be made from the sound of the cod-fish, Gadus *merrhua*; hake, Gadus *merlucius*; and ling, Gadus *molva*, which frequent the British seas.

[3] *Philosophical Transactions*, vol. lxiii. part i.

in cold water it swells, softens, and becomes opalescent; and in one hundred grains of it, rather more than ninety-eight, according to Mr. Hatchett, are soluble in water, and the two parts which are insoluble consist of phosphates of soda and of lime. Three drachms of good isinglass, dissolved in one pint of warm water, produce on cooling a pretty firm, slightly opaline-coloured jelly, which is a compound of pure animal gelatin and water.[1] Gelatin is soluble in the acids and pure alkalies; but is precipitated from its solution by infusions and decoctions of astringent vegetables, the tannin of which forms with it an insoluble compound[2]; carbonate of potass also throws down a precipitate; and alcohol separates it from water when added to its solution in any considerable quantity. The solution putrefies when kept for a few days. According to John, isinglass contains also traces of saline matter.

Medical properties and uses. — The solution of ichthyocolla was formerly much given in cases of fluor albus and diarrhœa; but is now rarely used as a medicine. Its nutrient qualities are more obvious. By dissolving it in water, and adding a little sugar and lemon-juice, an excellent nutritious jelly is produced, well adapted for the sick and convalescent. It is employed in the preparation of English court-plaster.

ACONITUM.[3] *Spec. Plant. Willd.* ii. 1235.

Cl. 13. *Ord.* 3. Polyandria Trigynia. *Nat. ord.* Multisiliquæ, *Linn.* Ranunculaceæ, *Juss.*

G. 1062. *Cal.* none. *Petals* five, the highest arched. *Nectaries* two, peduncled, recurved. *Pods*, three or five.

** *With blue corrollas.*

Sp. 8. A. *Napellus.* Woolfsbane, Common Monkshood. (*Lond. Edin.*) *Med. Bot. 2d ed.* 461. *t.* 165.

Sp. 9. A. *neomontanum*, (Dub.) Jaquin. *Flor. Austr. t.* 381.

Officinal. ACONITI FOLIA, *Lond.* ACONITI NAPELLI FOLIA, *Edin.* ACONITUM; FOLIA, *Dub.* The leaves of Monkshood.

Syn. Aconit, chaperon de Moine (*F.*), Blauer-strumhut (*G.*), Monnikskappen (*Belg.*), Stermhut (*Dan.*), Stermhatt (*Swed.*), Napello (*I.*), Aconito (*S.*).

The species of aconite cited by the London and Edinburgh colleges has been, generally, regarded as the plant originally used by Stoerk: an error which originated with Stoerk himself; but, after a minute comparison of the plant with the de-

---

[1] As Gelatin is a constituent of many other substances, it is important to know that sulphate of platina will detect its presence, when the quantity is too small to affect astringent infusions. Mr. E. Davy discovered this test. *Journ. of the Sciences*, vol. x. p. 454.

[2] Gelatin is a nice test of the presence of tannin, for which purpose Sir H. Davy recommends 120 grains to be dissolved in 20 ounces of distilled water.

[3] Labor. chim. 1808.

"Quo quia nascuntur dura vivacia caute
Agrestes Aconita vocant:"

OVID.

But Theophrastus derives the name from *Acone*, a city of Bithynia, near which it grew in great abundance.

scription, we agree with Willdenow, and the Dublin college, that the *neomontanum* is the species which should be medicinally used. It is a perennial plant, flowering in July: and found native in the alpine forests of Carinthia, Carniola, and the mountainous parts of Germany.

The stem is firm, elongated, rising to the height of five or six feet, leafy, and terminating in a long sparse spike of flowers, racemose and branched below, with single flowered peduncles. The lower leaves are few, alternate on long channelled petioles; palmated or rather pedate, being divided to the base into five broad cuneiform divisions, deeply cleft and toothed; the petioles are shorter, and the leaves less divided the nearer they are to the summit of the stem: the colour of the whole is a deep green on the upper disk, and a pale green on the under; both sides are naked, smooth, and shining. The flowers are of a deep violet colour, and stand alternately on the spikes, on unifloral, erect, axillary peduncles. They have no calyx; but two small, erect, calycinal stipules are placed one on each side of the peduncle within a few lines of the flower; the petals are five, the uppermost helmet-shaped and beaked, covering two singular, peduncled nectaries; the lateral ones broad, and roundish, the lower oblong, elliptical, and divaricating. These four are slightly pubescent. The nectaries are cuculatted, the spur of each being hooked and blunt; the lip lanceolate, revolute, and bifid. The filaments are spread, and white at the base, where they closely cover the germens; but the upper part is filiform, purple, spreading, and bearing whitish anthers. The germens are three, four, or five, with simple reflected stigmas; and become capsules, containing many angular seeds.[1]

For medicinal use the leaves should be gathered when the flowers appear.

Qualities. — Aconite leaves when fresh have a faint narcotic odour; and a moderately bitter, acrid taste, leaving a painful sensation of heat in the mouth, when they are much chewed. The whole of the plant is poisonous; but the deleterious qualities are lost in a considerable degree when it is dried, or long kept, and much of its acrimony is dissipated. Its narcotic principle is supposed by M. Brandes to be an alkali, which he has named *aconita*.

Medical uses and properties. — Aconite is narcotic, diaphoretic, and in some cases diuretic. In over doses it occasions

[1] The flower-spikes of A. Napellus are shorter, denser, and the segments of the leaves narrower, and more linear than those of A. Neomontanum; the spur of the nectaries is also straight in Napellus, and hooked in Neomontanum; the lip ascending in Napellus, and revolute in Neomontanum.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0163-8

violent nausea, vomiting, hypercatharsis, vertigo, cold sweats, mania, and convulsions which terminate in death; and these effects appear to depend on its action on the nervous system, as dissections of fatal cases have not displayed any particular marks of organic disease.

Stoerk first administered Aconite internally in chronic rheumatism, gout, exostosis, paralysis, and scirrhus; and since the publication of his experiments, in 1702, it has been advantageously employed in similar cases, and also in amaurosis, scrophula, cancer, itch, venereal nodes, and intermittents. Much caution is required in the exhibition of it; and it is absolutely necessary to know the length of time it has been gathered, as its activity varies so very considerably, as to require this to be ascertained before the dose can be apportioned. It is given in the form of powder, extract, and tincture; and may be combined with calomel, antimonials, camphor, and guaiacum. The dose of the powder is one or two grains, gradually increasing it to six or eight.

Officinal preparations. *Extractum Aconiti.* L. E.

ACORUS. *Spec. Plant. Willd.* ii. 199.

Cl. 6. *Ord.* 1. Hexandria Monogynia. *Nat. ord.* Piperitæ, *Linn.* Aroideæ, *Juss.*

G. 663. *Spadix* cylindrical, covered with florets. *Cor.* petals six, naked. *Style* 0. *Capsule* three-celled.

Species 1. A. *Calamus.* The Sweet-flag. *Med. Bot. 2d edit.* 725. *t.* 248. *Smith Flor. Brit.* i. 373.

Officinal. CALAMI RADIX, *Lond.* ACORI CALAMI RADIX, *Edin.* ACORUS, (CALAMUS AROMATICUS,) RADIX, *Dub.* Sweet-flag.[1]

Syn. Acorus odorant (*F.*), Kalmus wurtzil (*G.*), Kalmus (*Dutch, Dan. Swed.*) Calamo aromatico (*I.*), Acoro calamo (*S.*), Tatarskie Ziele (*Polish*), Vassamboo (*Tam.*), Vadge (*Pers.*), Shiva Buch (*Beng.*), Igir (*Arab.*), Wudda Kuha (*Cyng.*), Bach (*H.*), Vacha (*San.*), Deringgo (*Javanese*).

The sweet-flag is found growing in marshes and rivulets, over the greater part of Europe and Asia, and in Britain, in many parts, producing its flowers in May and June.[2]

The root is perennial, horizontal, long, somewhat flatted, crooked; full of joints or rings, whence the radical fibres spring from the underside, and branched; from half an inch to one inch in thickness, externally, when fresh, of a greenish yellow colour, internally, whitish and spongy. The leaves spring directly from the root; are sword-shaped, about three feet in length, and generally waved along one of the edges; of a bright green colour, and emitting a strong aromatic odour when bruised. The flowers are small, and produced on

---

[1] Καλάμου ἀρωματικοῦ, Dioscoridis.

[2] In the rivers of Norfolk plentiful. On Hillingdon common, Middlesex, and other places about London. *Smith.* l. c.

a very close tessellated conical spike four inches long, pushed out from the side, above the middle, of a naked stalk or scape, two-edged, and terminating like a leaf. They have no calyx. The petals are six: small, erect, regular, with the apex inflected, and of a pale green colour. The filaments are alternate, with the petals, thread-like, supporting double anthers. The germen is elliptical, crowned with a sessile-pointed stigma.

The greater part of the roots in use are now brought from Norfolk; and are equal in quality to those from the Levant.

Qualities. — The root of sweet-flag has a pleasant aromatic odour, similar to that of a mixture of cinnamon and allspice; the taste is warm, bitterish, pungent, and aromatic.[1] In the dried state, the cuticle is corrugated, of a yellowish brown colour, with many small, white, elevated circles on the under side, whence the radical fibres issued. It breaks with a short rough fracture; is internally of a pale buff colour, and a spongy texture: both the smell and taste are improved by exsiccation. The aromatic principle is an essential oil, which can be obtained by distillation, and, with the bitter matter, is extracted by infusion in boiling water. Like the root of Florentine iris it contains a considerable quantity of fecula, which is dissolved in the infusion, and copiously precipitated from it by acetate and superacetate of lead.

Medical properties and uses. — This root is tonic, and aromatic. It has been employed in medicine since the time of Hippocrates.[2] By the moderns, it is successfully used in intermittent fever, even after bark has failed; and is certainly a very useful addition to Cinchona. It is also a useful adjunct to bitters, and stomachic infusions, in cases of dyspepsia; particularly when vertigo is one of the symptoms. It is too seldom prescribed. The dose in substance is from ℈j. to ʒj.; and of the infusion, made with ʒvi. of the bruised root in f ℥xij. of boiling water, a cupful three or four times a day.

ADEPS. Vide *Sus Scrofa.*

ÆSCULUS. *Spec. Plant. Willd.* ii. 285.

Cl. 7. *Ord.* 1. Heptandria Monogynia. *Nat. ord.* Trihilatæ, *Linn.* Acera, *Juss.*

G. 717. *Cal.* one-leafed, five-toothed, swelled out. *Cor.* four or five irregularly coloured petals inserted into the calyx. *Cap.* three-celled.

Species 1. *Æ. Hippocastanum.* Common Horse Chesnut. *Med. Bot. 2d edit. t.* 217. *Gærtner De Fructibus,* ii. 135.

---

[1] Linnæus erroneously considered it the only native aromatic plant of northern climates. — The candied root is employed at Constantinople as a preservative against epidemic diseases.

[2] *Morb. Mul.* ii. 651.

Officinal. CORTEX, *Dub.* The bark.

Syn. Marronier d'Inde (*F.*), Ross kastanie (*G.*), Paarden kastanie (*Dutch*), Hestekastagne (*Dan.*), Häskastagnier (*Swed.*), Kasztan owdzikich (*Pol.*), Ippocastano (*I. Port.*), Esculo Castano de Aballo (*S.*).

The horse chesnut is a native of the north of Asia, but cultivated in almost every part of Europe.[1] In this country it attains to great perfection, constituting one of the chief ornaments of our parks and avenues. It flowers in May.

This tree rises to a considerable height, branching, from the upper part of the trunk, so as to form a roundish conical mass. The leaves stand on long foot-stalks, are large, and digitated, each consisting of seven leaflets, proceeding from a common centre; of a deep green colour, and spathulate form; ribbed, pointed, and serrated. The middle leaflet of a full-grown leaf is about six inches long, and two broad near the top, the three lateral ones on each side gradually decrease in size, to the smallest, which are only three inches in length and one in breadth. The flowers are peduncled, and disposed in handsome, terminal, erect, conical spikes. The calyx is one-leafed, of a pale green, bell-shaped, divided at the edge into five blunt teeth; the petals are five, ovate, slightly waved at the margin, ciliated, with claws inserted into the calyx, all inclining to one side, so as to leave a gap betwixt the two innermost; white, with an irregular spot of red or yellow directly above the claw. The filaments are awl-shaped, gracefully curved, supporting reddish, upright double anthers: the germen is cylindrical, with a pointed stigma. The fruit is a large, roundish, green-coloured, three-celled, three-valved capsule, having the bark armed with short spines, and generally containing two sub-globular seeds or nuts.

The fruit consists almost entirely of fecula. It is eaten with avidity by deer and some other animals; and were the acrimony destroyed by fire, it might be rendered fit food for men in times of scarcity. For medical purposes, the bark is taken from the middle-aged branches.

Qualities.—The *bark* is inodorous, and tastes bitter, astringent, and slightly aromatic: both water and proof-spirit extract its virtues. Its infusion has a fawn-brown colour, and a bitter taste; sulphate of iron and sulphate of zinc strike a black colour when added to it, and throw down a dark-coloured precipitate; oxymuriate of mercury and superacetate of lead precipitate it white. Tartar emetic effects no change on it. Gelatin precipitates tannin from it, but much less than from oak bark.

---

[1] The horse chesnut was brought into Europe by Clusius in 1550, and first cultivated in England by John Tradescant in 1633.

Universitäts- und Landesbibliothek Düsseldorf
urn:nbn:de:hbz:061:2-135391-p0166-5
DFG

From the above detail, those substances which are incompatible in prescriptions with infusion or decoction of this bark are obvious.

Medical properties and uses.—The *bark* of the horse chesnut is tonic, and has been successfully exhibited, particularly on the continent, in intermittents, typhus, and other cases in which Cinchona is used; externally, its decoction has been employed as a lotion in gangrene. We have had no opportunity of trying this bark; but we doubt much if it can supersede the Cinchona, in any case in which it is properly indicated.

The dose of the powder is ʒ ss.; and of the strained decoction, (made with an ounce of the bark and a pint of water,) fʒjss. or fʒij. It may be given every three or four hours.

AGRIMONIA. *Spec. Plant. Willd.* ii. 875.

Cl. 11. *Ord.* 2. Dodecandria Dygynia. *Nat. ord.* Senticosæ, *Linn.* Rosaceæ, *Juss.*

G. 957. *Calyx* five-toothed, guarded by another. *Petals*, five. *Seeds*, two, in the bottom of the calyx.

Species 1. A. *Eupatoria*. Common Agrimony.[1] *Med. Bot. 2d edit.* 500. *t.* 180. *Smith, Flor. Brit.* 511. *Flor. Dan. t.* 588.

Officinal. AGRIMONIA; HERBA, *Dub.* Agrimony; the herb.

Syn. Aigremoine (*F.*), Odermennig (*G.*), Agrimonie (*Belg.*), Agermaane (*Dan.*), Akermünja (*Swed.*), Rzepik (*Polish*), Kleine klette (*Russian*), Agrimonia (*I.*).

This is an indigenous perennial plant, common about the borders of fields and hedges, flowering in June and July.

The stem rises two feet in height; is erect, leafy, angular, hairy, and of a reddish hue. The leaves are alternate, interruptedly pinnate, with three pair of opposite leaflets, and a terminal one somewhat lyre-shaped and hairy; the leaflets are obovate, pointed, deeply serrated; the terminal one is petiolate; the intermediate ones are much smaller, entire or trifid. Stipules two, deeply cleft. The flowers, which are small, golden yellow, and peduncled, are in long, terminal, erect, hairy spikes, with trifid bractes. The calyx is persistent, inclosed within an involucre at the base of the germen, furrowed, and divided into five ovate, pointed segments, surrounded with rigid, hooked awns: the corolla consists of five ovate, spreading petals inserted into a glandular substance at the base of the germen. The filaments are from five to twelve; the anthers two-lobed. The germen is inferior, supporting two styles with blunt stigmas. The seeds two, one often abortive, contained in a capsule formed of the calyx.

For medical use, this herb should be cut when it is in full flower.

---

[1] Εὐπατωρία, Dioscoridis.

Qualities.—Agrimony, when fresh, has an agreeable aromatic odour, depending on a volatile, essential oil, which is lost when the herb is dried[1]: the taste is bitterish and subastringent. The infusion of it in water reddens the more delicate vegetable blues, and strikes a black colour with sulphate of iron. Potass and its carbonate first change it to a yellow, then to an orange-colour, and, lastly, throw down a white precipitate.

Medical properties and uses. — Agrimony was formerly regarded as a remedy of much importance, as a tonic and deobstruent: but it is now very seldom or never prescribed. The dose, in powder, is from ℈j. to ʒj. given two or three times a-day.

ÆRUGO. See *Cuprum.*

ALLIUM. *Spec. Plant. Willd.* ii. 63.

Cl. 6. *Ord.* 1. Hexandria Monogynia. *Nat. ord.* Spathaceæ, *Linn.* Asphodeli, *Juss.*

G. 626. *Corolla* six-parted, spreading. *Spathe* many-flowered. *Umbel* heaped together. *Capsule* superior.

* *Stem-leaves plane. Umbel bearing a capsule.*

Species 2. Allium *porrum.* The Leek.

** *Stem-leaves plane. Umbel bulbiferous.*

Species 14. Allium *sativum.* Garlic. *Med. Bot. 2d edit. t.* 256.

**** *Leaves radical. Stem naked.*

Species 43. Allium *Cepa.* The Onion.

1. ALLIUM PORRUM.[2]

Officinal. PORRI RADIX, *Lond.* Leek root (bulb).

Syn. Poireau (*F.*), Spanische lauch (*G.*), Porro (*I.*).

The leek is a biennal plant, a native of Switzerland, flowering in June.

The bulb consists of concentric circles, seated on a radical plate, from which spring fibrous roots. The leaves are broad and gramineous: the stem is a naked scape, bearing a congested capital, or rather spherical umbel of flowers; with rough-keeled petals, shorter than the stamens, which are alternately trifid. It is better known as an alimentary or pot herb than as an article of Materia Medica.

Qualities.—All the parts of the plant have a pungent offensive odour, and an acrimonious taste: properties depending on an essential volatile oil, which is much dissipated by boiling, and can be consequently separated by distillation.

Medical properties and uses.—The leek is stimulant and diuretic. The expressed juice has been given with advantage in ascites and other dropsies. The dose is from f ʒ ss. to f ʒ ij. mixed with mucilage or syrup.

---

[1] The oil, which is yellow, can be obtained by distillation with water.—*Lewis.*

[2] Πράσον, Theophrasti et Dioscoridis.

2. ALLIUM SATIVUM.[1]

Officinal. ALII RADIX[2], *Lond.* ALLII SATIVI RADIX, *Edin.* ALLIUM; RADIX, *Dub.* Garlic root (bulb).

Syn. Ail (*F.*), Knoblauch (*G.*), Aglio (*I.*), Ajo sativo (*S.*), Knoflook (*Belg.*), Kvidlögen (*Dan.*), Hvitloken (*Swed.*), Czosnek (*Polish*), Tschesnok (*Russian*), Seer (*Pers.*), Soom (*Arab.*), Bawang (*Jav.*), Lasúna (*San.*), Lehsen (*H.*), Vullay poondoo (*Tam.*), Bavangpootie (*Malay*).

Garlic is a perennial bulbiferous plant, found wild in Sicily, and cultivated in most parts of Europe, for culinary and medicinal use. It flowers in July.

The bulbs of this species of allium are numerous; three or more being inclosed in one covering, forming a nucleus, round which others are disposed, and the whole envelvoped in a common membrane, from the base of which proceed long white fibrous roots. The stem rises two feet in height, surrounded with many long, flat, linear, grass-like leaves, proceeding chiefly from the young bulbs; and is terminated by a mixed cluster of flowers and bulbs, inclosed in a spathe, which opens at one side and withers. The flowers are small, consisting of six oblong white petals, with tapering filaments, shorter than the corolla, and supporting erect anthers: the germen is superior, short, angular, bearing a simple style with a sharp stigma; and becoming a short, broad, three-celled capsule, containing roundish seeds.

Garlic is dug up for use in the month of August, then cleaned and dried in the sun, and preserved in bunches in a dry place. In this state the exterior membrane is of a dirty white colour, and of a withered aspect; but the bulbs, which are called *cloves*, are white, succulent, and juicy. On drying, they lose nine parts in fifteen of their weight.

Qualities. — All the parts of the plant, but particularly the bulbs, have a pungent offensive odour, and an acrimonious biting taste. These properties depend on an essential oil, which can be obtained separate by distillation with water; of a thick and ropy consistence, a yellow colour, heavier than water, and possessing, in an eminent degree, the sensible qualities of the garlic. It blisters the skin when applied to it, and strikes a black colour when triturated with oxide of iron. Simple coction with water renders garlic mild and inert. The acrid principle is

---

[1] Σκόροδον, Theophrasti et Dioscoridis.

[2] The root, strictly speaking, is not the part of the plant intended to be ordered. This error has arisen from the bulbs of plants having been generally placed by botanists among the roots, under the title "radices bulbosæ:" they, however, have no affinity to roots, but the closest to leaf buds. The roots of bulbiferous plants are fibrous, and issue from a radical plate at the base of the bulb. The clearest definition of the bulb is given by Gærtner, in his work *De Fructibus*, &c. Introduction, p. 111. "Bulbus est germen compositum, subglobosum, subaphyllum, ex carina brevissima, et squamis succulentis, crassis compaginatum, quod tandem sponte a matre sua solvitur." The Colleges, therefore, should have used the word *bulbus* instead of *radix*.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0169-5

obtained also by expression: and it is in a less degree extracted by water, by alcohol[1], and by acetic acid. The odour is so penetrating, that when garlic is applied to the soles of the feet it is perceived in the breath, the urine, and the perspiration. From 1406 parts of fresh garlic, Cadet[2] obtained 520 of mucilage, 37 of albumen, 48 of fibrous matter, and 801 of water by estimate. Bouillon la Grange[3] found sulphur also, with vegetable albumen, and sugar.

Medical properties and uses.—Garlic is stimulant, diaphoretic, expectorant, diuretic, and anthelmintic, when exhibited internally; and rubefacient when externally applied.

It has been successfully given in intermittents, and in fevers of the typhoid type. If the body be kept warm during its use, it acts powerfully by diaphoresis. It has long been esteemed a valuable remedy in pituitous asthma, chronic cattarrh, flatulent colic, calculus, and dropsies; and as a preventive of worms. Externally, it is applied bruised to the soles of the feet, in the coma of typhus; and in confluent small-pox when the determination to the head is considerable. A poultice made of it is a good resolvent of indolent tumors. A clove of it, wrapped in cotton or gauze, or a few drops of the juice introduced into the external ear, is said to be extremely efficacious in atonic deafness; and applied to the pubis as a poultice in retention of urine, owing to a want of action in the bladder, it sometimes is effectual in stimulating that viscus to discharge its contents. The juice is also applied, united with oil, to herpetic eruptions.

Garlic may be exhibited in substance, the whole clove or pieces of it being dipped in oil and swallowed; or it may be formed into pills. The expressed juice also is given mixed with sugar: or the bulb may be infused in milk, which was Rosenstein's mode of administering it to children afflicted with worms. It is frequently united with calomel in the form of pill or bolus, in hydropic cases. An ointment is formed by mixing the juice with oil. The bruised bulb has also been used as a suppurative.

The dose, in substance, is from ʒss. to ʒij.; or from one to six cloves, swallowed whole, twice or thrice a day; and in pills, united with soap or calomel, from grs. xv. to ℈j. Of the juice, f ʒss. is given for a dose in any proper vehicle.[4]

An overdose, or the too liberal use of it as a condiment, is apt to occasion head-ache, flatulence, thirst, fever, inflammation, and discharges of blood from the hæmorrhoidal vessels.

Officinal Preparation. *Syrupus Allii*, D.

---

[1] With alcohol, a reddish yellow tincture is obtained, which leaves, when evaporated, a very acrid brown extract, that attracts moisture from the air.

[2] *Ann. de Chimie*, lix. p. 106. [3] *Journ. de Pharm.* No. viii. p. 357.

[4] It use as a condiment is of great antiquity. Thus, when the Israelites remembered the flesh pots of Egypt, among other deprivations, which the malecontents enumerated, were "the leeks, and the onions, and the garlick," Numbers, c. 11. v. 5.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0170-6 DFG

3. ALLIUM CEPA.[1]

Officinal. CEPA; RADIX, *Dub.* The Onion.

Syn. Ognon (*F.*), Swiebel (*G.*), Uijen (*Dutch*), Cipolla (*I.*), Cebolla (*S.*), Cebola (*Port.*), Lögen (*Dan.*), Rödlök (*Swed.*), Cebula (*Pol.*), Luck (*Russian*), Vungayum (*Tam.*), Loong (*Cyng.*), Pecaz (*Pers.*), Bavangmera (*Malay*), Palandoo (*San.*), Pecáj (*H.*), Bassul (*A.*), Kanda (*Sans.*), Brang-bang (*Jav.*).

The onion is a perennial, bulbiferous plant, cultivated all over Europe for culinary purposes: flowering in June. It is so well known, as scarcely to require a particular description. The bulb is simple, formed of concentric circles, with a radical plate at the base and fibrous roots. The stem is a naked, swelling scape, with fistular, pointed, spreading leaves, sheathing at the base. The flowers are produced in a capital or head, inclosed in a deciduous spathe.

Qualities.—The odour and taste of the onion do not materially differ from those of garlic, but are much weaker. A little acrid volatile essential oil, combined with sulphur[2], is obtained by distillation; and the recent juice contains sugar, mucus, phosphoric acid, phosphate of lime, and citrate of lime.[3]

Medical properties and uses.—The onion, "considered as an article of food, when eaten liberally, is said to produce flatulencies, occasion thirst, headache, and turbulent dreams." As a medicine, it is stimulant, diuretic, and expectorant, and may be used in the same cases as garlic. On account of the free phosphoric acid it contains, the juice is supposed to be useful in calculous cases, as it dissolves phosphate of lime out of the body. Onions are, however, scarcely ever employed, except externally, as suppurative cataplasms; for which purpose they are generally roasted, split, and applied to tumours.

ALOE. *Spec. Plant. Willd.* ii. 184.

Cl. 6. *Ord.* 1. Hexandria Monogynia. *Nat. ord.* Coronariæ, *Linn.* Asphodeli, *Juss.*

G. 659. *Corolla* erect, mouth spreading, bottom nectariferous. *Filaments* inserted into the receptacle.

Species 2. Aloe *spicata*. Spiked Aloe.

——— 3. Aloe *vulgaris*. Common Aloe. *Sibthorp. Flor. Græc.*

1. ALOE SPICATA.[4]

Officinal. ALOES SPICATÆ EXTRACTUM, *Lond.* ALOES EXTRACTUM, *Edin. Dub.* Extract of Aloes.

Syn. Suc d'Aloes (*F.*), Glausinde Aloe (*G.*), Azevre Succotrina (*Portug.*), Aloe (*I.*), Aloe (*S.*), De doorblädige Aloe (*Belg.*), Aloe (*Russian*), Elwa (*H.*), Sebber (*Pers.*), Musebber (*A.*), Corriabolum (*Tam.*).

The spiked aloe is undoubtedly the species which yields the best extract brought from the Cape of Good Hope; and it is

[1] Κρόμυον, Dioscoridis. The specific appellation is derived from *caput*, a head, on account of the form of its bulb.

[2] It is this sulphureted oil which blackens silver plate in which onions are placed, and which occasions the disagreeable odour of this bulb in putrefying.

[3] Fourcroy and Vauquelin, *Ann. de Chim.* lxv. 161.

[4] Ἀλόη, Dioscoridis?

also supposed to yield the extract brought from the island of Zocotora; which was formerly the only place of export for the best aloes, thence named Socotrine aloes. It grows abundantly in the interior of the Cape, particularly at Zwellendam, near Mossel Bay. The stem is round, about four inches in diameter, leafy at the top, and rising three or four feet in height. The leaves are spreading, about two feet long, subverticilate, broad at the base, gradually drawn to a point, channelled, acute, with remote teeth. The flowers spread horizontally, in very close spikes. Under each flower is a single ovate, acute, broad, membranaceous bracte, white, with three green streaks, and a little shorter than the corolla. This is bell-shaped, and six-petalled: the three inner segments are white, marked with three green lines, not connected together, ovate, blunt, and broader than the three outer; which are connected with them at the base, and resemble them, but are narrower and less concave. The flower contains a large portion of a purple honey juice. The seeds, which are numerous, with a membranaceous appendage attached to each, are contained in a superior capsule.

At the island of Zocotora the leaves are cut off close to the stem, then cut in pieces, and the juice expressed: this is allowed to remain at rest for forty-eight hours, during which time a feculent matter is deposited: after which the supernatant liquor is poured off into flat dishes and evaporated in the sun. At Zwellendam, in the month of July, the leaves are pulled, then cut into pieces, the juice expressed, and inspissated by means of heat.

The real Socotrine aloes, which are now scarce in the market, and, as has been already stated, are supposed to come from the island of Socotora, or Zocotora[1], near the straits of Babelmandel, are brought to this country by way of Smyrna and Malta, in chests and casks. Those from the Cape are brought in similar packages. The greater part of what are now sold as Socotrine aloes are brought from Bombay, and are the real Hepatic aloes. The Bombay aloes are rather duller and browner, but in other respects have nearly the same characters as the Socotrine, which are sometimes mixed with the Indian. They are imported in casks containing from two to eight hundred weight, and sometimes in skins.[2] Ground shells

Qualities.—The real *Socotrine* extract has a peculiar aromatic odour, not unlike that of the russet apple decaying; and a very permanent intensely bitter taste. It is in pieces of a deep reddish-brown colour, glossy as if varnished; breaking with a

[1] Zocotora is an island subject to the Prince of Hadecamaut, an Arabian province contiguous to Yemen.

[2] Mr. Barrow states, that the quantity of Cape aloes sent to London, from 1799 to 1802 inclusive, was 341,927 lbs. Vide *Travels in Africa.*

smooth conchoidal fracture. The thin edges and small fragments are reddish, or golden yellow, and semitransparent. It softens in the hand, and is adhesive; yet is sufficiently pulverulent; and the powder has a bright golden yellow hue.

The *Cape* aloes have a stronger and more disagreeable odour than the Socotrine and the Hepatic; the taste is nearly the same. The outside of the pieces is more friable, has more of a yellow cast, and is less glossy; but the inside is apt to continue soft and pliable. The colour of the powder is a beautiful greenish yellow, resembling gamboge, but less bright. They are imported in chests and casks.

2. ALOE VULGARIS.[1]

Officinal. ALOE HEPATICA; EXTRACTUM, *Edin.* GUMMI RESINA, *Dub.* Extract of the Common Aloe, or Barbadoes Aloes.

The British Pharmacopœias formerly considered the plant which yields the Barbadoes aloes as a variety of the Aloe *perfoliata*; but Sir E. Smith, the learned editor of Sibthorp's *Flora Græca*, has marked the above-named plant, which is a distinct species, as the one that Sloane describes, in his History of Jamaica, as producing the Barbadoes extract. The volume of Sibthorp's work, in which the plant will be fully described, and proved to be the true Ἀλόη of Dioscorides, is yet unpublished, and therefore we cannot avail ourselves of the description.

The month of March is the period for cutting the aloes in the island of Barbadoes. The leaves are cut off close to the stem, and disposed in tubs, in a such a manner that the juice runs out. After a sufficient quantity of it is collected, it is exposed to heat in copper boilers; and, as it becomes more inspissated by a constant and regular fire, it is ladled from one boiler to another, and fresh juice added, until that in the last, which is called the *teache*, acquires the consistence of honey; when it is poured into calabashes, and hardens by age. It is brought home in these calabashes, or large gourd-shells, each of which contains from sixty to seventy pounds' weight. They are often passed off as Hepatic aloes.

There is still another kind of aloes, named Fœtid or Caballine, but on account of its fœtid odour it is not used in medicine. A Mocha aloe resembling the Cape, but less purgative, is also brought to this country.

Qualities.—The odour of the Barbadoes aloes is stronger and less pleasant than that of the Socotrine, and has some resemblance to the odour from the human axilla. The taste is nauseous and intensely bitter. The pieces are also of a duller brown colour, less glossy, not so smooth in the fracture, but easily splinter. The edges are not so sharp and transparent;

[1] Ἀλόη, Dioscoridis, l. 3. c. 25.

but rather blunt, and of a dull yellowish hue. It softens in the hand, and is adhesive. The colour of the powder is a dull olive yellow.

All the kinds of aloes, when analysed, yield a small portion of vegetable mucus, resin, and a peculiar extractive matter. Braconnot found aloes to consist chiefly of a peculiar bitter matter, which he has termed the resinous bitter principle.[1] The odour, taste, and medical virtues of the drug reside chiefly in the extractive; and the superiority of the Socotrine, the Cape, and the Bombay aloes is correctly supposed to arise from their containing a larger proportion of it, and consequently less resin, than the Barbadoes. Boiling water dissolves nearly the whole of any of the kinds; but as the solution cools, the resinous part is deposited; and by boiling aloes in water the extractive is altered, rendered insoluble in water, and approaches in its properties to the nature of resin. The alkalies and their carbonates greatly assist its solution. All the kinds dissolve, also, in proof spirit. When the Socotrine aloe is distilled, a volatile oil is obtained, which is not procured from the Barbadoes.

Medical properties and uses.— Although all these kinds of aloes differ in their sensible qualities, yet they agree in their medical properties. They are warm, stimulating cathartics, of slow solution, and thence they are supposed to act chiefly on the colon, particularly its sigmoid flexure, and the rectum. By the extension of their stimulus to the uterine vessels they produce, also, emmenagogue effects. This operation is slow and moderate, but tolerably certain. From the stimulant property of aloes, they are useful in cases where the intestines are in a sluggish, relaxed, and insensible state, attended with viscidity of the abdominal secretions: as in the habitual costiveness of the sedentary and hypochondriacal; or that arising from a paucity of bile, in jaundice, chlorosis, and scrophula: and by their powerful effects on the rectum they have been found very serviceable in expelling ascarides. Their use is contraindicated in hæmorrhoidal cases, the symptoms of which they are apt to aggravate; but it has been well remarked that their effect upon the rectum is more owing to the manner of prescribing the remedy, than any specific action which it exerts on that portion of the intestines, which is but little affected when the aloes are prescribed in a soluble form. They are also improper in very irritable and plethoric constitutions in phthisis pulmonalis, and during the flow of the menses. Aloes, and aloetic compounds, have been likewise regarded as improper in pregnancy; but Dr. Denman has justly remarked, that " they are in common use among the lower class of peo-

[1] *Ann. de Chimie*, lv. 152.

ple, because they are cheap, and conveniently given in the form of pills[1];" and no bad effects are observed to follow.

Aloes may be given in substance, in doses from grs. v. to grs. xx.; larger doses not operating more effectually. Whether in the simple state, or when compounded with soap, bitters, and other substances, the form of pill is to be preferred on account of the nauseous taste of the medicine.[2]

Officinal preparations. *Pulvis Aloes comp.* L. *Pilulæ Aloes*, E. D. *Pil. Aloes comp.* L. *Pil. Aloes cum Myrrha*, L. E. D. *Pilul. Aloes et Assafœtidæ*, E. *Pil. Aloes c. Colocynthide*, E. *Pil. Rhei comp.* E. *Pil. Scammonii comp. cum Aloe*, D. *Extractum Aloes*, D. *Extractum Colocynthidis comp.* D. *Tinctura Aloes*, L. E. D. *Tinct. Aloes comp.* E. D. *Tinct. Aloes ætherea*, E. *Tinct. Benzoini comp.* E. D. *Tinct. Rhei et Aloes*, E. *Vinum Aloes*, L. E. D.

ALTHÆA.[3] *Spec. Plant. Willd.* iii. 770.

Cl. 16. *Ord.* 8. Monadelphia Polyandria. *Nat. ord.* Columniferæ, *Linn.* Malvaceæ, *Juss.*

G. 1289, *Cal.* double; the exterior 6 or 9-cleft. *Caps.* numerous, 1-seeded.

Sp. 1. A. *officinalis.* Common Marsh Mallow. *Med. Bot. 2d edit.* 552. *t.* 198. *Eng. Bot. t.* 147. *Smith's Flora Britan.* 3. 739.

Officinal. ALTHÆÆ FOLIA, ET RADIX, *Lond.* RADIX, *Edin.* The leaves and root of Marshmallow.

Syn. Guimauve (*F.*), Eibisch (*G.*), Gemeene heemst (*Belg.*), Ibisk (*Danish*), Alte (*Swed.*), Slaz wielkilesny (*Polish*), Proswurujak (*Russian*), Altea (*I.*), Malvarisco (*S.*).

The marshmallow is an indigenous plant, which grows, as its name imports, in marshy places, particularly salt-marshes, and on the banks of rivers, throughout Europe. It flowers in June and July, and ripens its seeds in September. The root is perennial and fusiform. The stems are annual, herbaceous, upright, rising from two to five feet in height, round, naked and purplish below, but leafy and branching above. The leaves are alternate and petiolate, longer than they are broad, slightly five-lobed, and unequally serrated: both surfaces are downy, and give a soft velvety feeling when rubbed between the fingers. From the axillæ of the leaves the flowers spring in short thick panicles. Both the calyxes are persistent: the exterior has 7, 9, 10, or 12 very narrow unequal divisions; the interior is more regularly, but less deeply, cleft into five broader and sharper segments. The petals are five, cordate, coalescing

---

[1] *Introduction to Midwifery*, vol. i. 287.

[2] Dr. Paris, (see *Pharmacologia*), has enumerated the following empirical preparations as owing their efficacy chiefly to the aloes they contain. *Anderson's pills*, consisting of aloes, jalap, and oil of anniseed; *Hooper's pills*, formed of Pil. Aloes c Myrrha, sulphate of iron and Canella bark; *Dixon's antibilious pills*, a compound of aloes, scammony, rhubarb, and tartar emetic: *Speediman's pills*, of aloes, myrrh, rhubarb, the extract and the essential oil of camomile; and *Lady Webster's dinner pills*, for which the following is the formula, extracted from the old Paris-codex. R. aloes optimæ, ʒvj. mastiches, et rosarum rubrarum, ā aʒij. syrupi de Absinthio q. s. ut fiat massa, in pilulas 120 dividenda.

[3] Ἀλθαία, Dioscoridis. Named from Althea, the mother of Meleagar.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0175-5

at their bases, of a pale blush colour. The stamens are many, united at their bases into a tube, and support reniform anthers. The germen is orbicular, bearing a cylindrical style, divided into many stigmas, which rise above the anthers. The capsules, generally about twenty in number, are of a rounded kidney shape, united laterally in a circle, so as to form a flattened wheel-shaped seed-vessel; and each contains a solitary reniform, flattened, smooth, brown seed. The roots, which are the parts medicinally used, are dug up in autumn.

Qualities.—Marshmallow root is inodorous, mucilaginous when chewed, externally tough and of a yellowish colour, internally white and fibrous; and contains a very considerable portion of mucus[1], which is yielded to water by coction.

Medical use.—The preparations of this plant, which derive their virtues from its mucus, are useful demulcents in visceral inflammations and calculous complaints. The roots well boiled, and bruised, are sometimes used as an emollient suppurative cataplasm; and a decoction of the leaves forms a useful fomentation in external abrasions; and in cutaneous eruptions accompanied with a sharp ichorous discharge.

Officinal preparations. *Decoctum Althææ officinalis*, E. *Syrupus Althææ*, L. E.

ALUMEN. *Lond. Edin. Dub.* Alum.

Syn. Alum (*F.*), Alaun (*G.*), Aluin (*Dutch*), Alun (*Dan. Swed.*), Halun (*Polish*), Kevaszu (*Russ.*), Allume (*I.*), Alumbre (*S.*), Pedrathune (*Portug.*), Sp'hatica (*San.*), P'hitcari (*H.*), Sheb (*Arab.*), Paddicarum (*Tam.*).

This salt is a ternary compound of alumina, potash, and sulphuric acid. It is found native in some places, either effloresced on bituminous schistus, as at Göttwig in Austria; or united with the soil in volcanic regions, as at the Solfatara near Naples, where the only processes requisite for its extraction are lixiviation and evaporation.[2] But the greater quantity of the alum of commerce is prepared by a peculiar management of schistose pyritic clays, usually denominated alum ores. At La Tolfa, near Civita Vecchia, where the best Roman alum is made, the ore is *alum stone* or sulphureted clay, found in large stratified masses among compact iron-shot argillaceous limestone[3]; but at other places, both on the continent and in Great Britain, it is manufactured from *pyritaceous clay*, which is in black, hard, brittle masses; *volcanic aluminous ores*, a white saline earth; *shale alum slate*, which occurs amorphous, or in concentric balls. At Hurlett, near Paisley, the largest alum

[1] Mucus differs from mucilage of gum arabic, in not being precipitated by silicated potash, nor affected by red or oxysulphate of iron. Bostock. *Nicholson's Journ.* xviii. 31.

[2] These processes are performed in pans sunk in the ground, the heat of which is sufficient to carry on the evaporation.

[3] An alum is found near Moscow which contains much sulphate of iron. *Mem. de la Soc. Imp. de Moscow*, t. i. p. 22.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0176-1

mine in this country, the schistus lies ten inches thick above coal. But the alum is in every instance the result of the decomposition of what is termed its ore; and a subsequent synthetical union of its components.

To prepare the alum, the ore is properly exposed to the atmosphere, when the sulphur of the sulphuret of iron, present in it, is oxigenized by the air and converted into sulphuric acid, which, combining with the alumina, produces an aluminous efflorescence. In general, however, the ore is first calcined with a low heat, so as to destroy the bituminous matter of the slate, and partly convert the sulphur into sulphuric acid: the oxigenizement is then completed by exposing the roasted ore to air and moisture, by which means a supersulphate of alumina is formed, which is extracted by lixiviation. To the solution concentrated, until it acquire the spec. grav. 1·35, is added the impure subcarbonate of potass of commerce, or supersulphate of potass, or putrid urine, or muriate of potass, after which it is run into coolers to be crystallized. After standing four days the mother waters are drained off, and the crystals being washed, are redissolved in boiling water to saturation, and then *roched*, that is, run into casks. On taking asunder the casks at the end of sixteen days, the alum exteriorly is found in a solid cake, but interiorly crystallized in large octahedral pyramids, inserted into one another.

The ancients were probably unacquainted with alum, for the στυπτηρία of the Greeks, and the *alumen* of the Romans, were merely vitriolic earths: and the first regular alum-works appear to have been established by the Asiatics, in the middle ages, particularly at Roccha, in Syria, whence the name *Roch alum*; and from them Europe was supplied till the fifteenth century. After this period, works were begun at Tolfa and Volterra in Italy, at Oberkaufungen and several other places in Germany, and at Almacoran in Spain. In England, in the reign of Elizabeth, Sir Thomas Chaloner established the first alum work at Gisborough, in Yorkshire. The largest alum works at present in this country, are those on the estate of Lord Glasgow at Hurlett, and those of Lords Dundas and Mulgrave, at Whitby, in Yorkshire.

The best alum is the Roman, which is in irregular, octahedral, crystalline masses, powdery on the surface. The English is in large, irregular, semitransparent, colourless masses, having a glassy fracture, not efflorescent, and difficult to pulverize; and that from the Levant, or Roch alum, is in small morsels, about the size of an almond, rather friable, and of a pale rose colour. The form of the regular crystal of alum is an octahedron. Its specific gravity is 1.7109. According to Vauquelin, its constituents are, acid 30.52, alumina 10.50, potass 10.40, and water 48.58, in 100 parts: but by a more

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0177-7

recent analysis, Berzelius makes them sulphate of alumina 36.85, sulphate of potass 18.15, and water 45: it also generally contains ammonia; and none of the alum of commerce, except the Roman, is free from a minute portion of iron.

Qualities. — Alum is inodorous, and has a sweetish, acidulous astringent taste. Its specific gravity is about 1.71. It reddens litmus and tincture of cabbage[1]; is in a small degree efflorescent; and soluble in six parts of water at 60°, and in three-fourths of its weight of boiling water. When exposed to a gentle heat it undergoes the watery fusion, and in a stronger heat swells, loses 44 per cent. of its weight, which is water, and becomes an opaque, white, friable spungy mass. It is decomposed by the alkalies and alkaline earths, which attract the greater part of its acid, and precipitate the alumina united with a small portion of acid and potass. According to the analysis of Mr. R. Phillips, alum is composed of sulphuric acid 34.94 parts, alumina 11.18, potassa 10.33. and water 43.55 in 100 parts. According to Dr. Thomson, its atomic composition is 3 atoms of alumina, 1 atom of sulphate of potass, and 25 atoms of water: or in numbers 60.875 grains contain 21.75 of alumina, 11 sulphate of potass, and 28.125 of water.[2] Gallic acid also precipitates its earth: hence the alkalies and their carbonates, muriate of ammonia, magnesia, lime, carbonate of magnesia, chalk, tartrate of potass, and infusions of galls and of cinchona, are incompatible in prescriptions with solutions of alum; as are also superacetate of lead, and the salts of mercury.

Medical properties and uses. — Alum is a powerful astringent. It is used both as an internal and external remedy for restraining violent hæmorrhages; and also in cases of obstinate diarrhœa, diabetes, and fluor albus; but we agree with Dr. Cullen, that it is not to be depended upon in the two latter diseases. It has been given as an auxiliary to Cinchona in intermittents, and in confluent small-pox when the pustules are bloody; and Dr. Percival regarded it as a prophylactic in colica pictonum, and a cure for slighter cases.[3] It is used locally in gargles, in cases of cynanche, relaxation of the uvula, and aphthæ; and as the basis of injections, in cases of gleet and leucorrhœa, and of eye-waters in chronic ophthalmia.

The dose in hæmorrhages is from grs. v. to ℈j., repeated every hour or two till the bleeding abate: in other cases, smaller doses are more advisable, larger being apt to nauseate

---

[1] Much of the English alum which we have examined strikes a green with syrup of violets, and most other vegetable colours, with the exception of the two above mentioned.

[2] *First Principles of Chemistry*, vol. i. p. 310.

[3] *Observations on Lead*, &c.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0178-3 DFG

the stomach, and occasion violent constipation. The addition, however, of an aromatic, prevents it, to a certain degree, from exciting nausea. It is sometimes administered dissolved in the serum of milk, in the form of whey, (*serum lactis aluminosum*,) which is prepared by boiling ʒij of powdered alum in a pint of milk, and straining. A small piece of alum, briskly agitated with the white of an egg, forms a coagulum, which, applied between two pieces of gauze or thin rag, proves very serviceable in ecchymosis, and some species of ophthalmia. The dose of alum in substance, is from gr. v. to ℈ji.; of the whey fʒij. or fʒiij.

Officinal preparations. *Alumen exsiccatum*, L. E. D. *Liquor Aluminis comp.* L. *Pulvis Aluminis comp.* E.

AMMONIÆ MURIAS, *Lond.* MURIAS AMMONIÆ, *Edin.* SAL AMMONIACUM, *Dub.* Muriate of Ammonia.

Syn. Sel Ammoniac (*F.*), Salmiak (*G.*), Salmiaken (*Dan. Swed.*), Sale Ammoniaco (*I.*), Sal Armoniaco (*S.*), Nosader (*H.*), Navacharum (*Tam.*), Urmiena (*Arab.*), Nowshader (*Pers.*), Vayvagarra Loonoo (*Cyng.*), Nuosadur (*Sans.*).

This salt, which is a compound of muriatic acid and ammonia, is found as a product of volcanoes;[1] but the greater part of that which is employed in medicine and the arts is artificially prepared.

Muriate of ammonia was originally manufactured in Egypt, by sublimation from the soot of fuel, formed of the dung of phytivorous animals kneaded with straw into clods, and dried in the sun. From this source all the European states were formerly supplied: but since the manufacture of it in Europe the importation of Egyptian sal ammoniac has been discontinued. The process differs in different places, and is generally kept secret; but the following is a sketch of the actual practice at a large establishment, which was carried on some years ago near London, and is probably the mode usually adopted in this country.[2]

Bones, chopped into small pieces, and boiled in order to extract the marrow and fat, were distilled from an iron cylindrical still into a leaden receiver, cooled by a refrigeratory, which was its cover, and contained about four inches in depth of water. Six parts of impure alkaline liquor and five of fœtid oil were thus procured; the oil was skimmed off, and the alkali mixed with pulverized gypsum. By double decomposition sulphate of ammonia and carbonate of lime were thus formed; the liquor which contained the former was then mixed with common salt (*muriate of soda*); and thus, by a se-

---

[1] The eruption of Etna in 1811 afforded as much Sal ammoniac as supplied all the manufactories and apothecaries' shops in Sicily. *Annales de Mines*, tom. v. p. 135. It is exhaled also from the solfatara of Pozzuola; from one of the great apertures of which it has been extracted for several years.

[2] *Aikin's Dictionary of Chemistry*, art. Sal ammoniac.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0179-1

cond decomposition, the sulphuric acid of the sulphate of ammonia uniting with the soda of the muriate of soda, and the muriatic acid with the ammonia; muriate of ammonia and sulphate of soda were formed in the liquor. This solution was clarified by subsidence and decantation; and by a skilfully managed evaporation in leaden boilers, the two salts were separated as they crystallized. The water of crystallization was then driven off from the muriate of ammonia, by exposing it to heat in a kind of oven; and the spongy, friable, ash-coloured mass, into which it changed, was put, while hot, into globular bottles, or glazed earthen jars furnished with a moveable perforated cover, in which the muriate was sublimed by exposing them to a heat of 320° in iron pots filled with sand. The cakes of salt produced, after being placed "for a day or two in a damp atmosphere," to soften their surface, and facilitate "the removal of any superficial impurities," were packed in casks for sale. As soot of coal affords, by maceration in water, a quantity of sulphate of ammonia, it is used in the Scotch manufactories instead of bones.

The cakes of muriate of ammonia are hemispherical, about an inch thick; elastic; and when broken are towards the convex surface white, striated, and opaque; but towards the concave have a more crystallized appearance, and are nearly semi-transparent. This salt is also, sometimes, crystallized in conical masses, that are deliquescent, owing to the presence of muriate of lime, which renders it unfit for medicinal purposes.

The greater part of the sal ammoniac in the London market is made in the north of England; but an inferior sort is imported in chests from the East Indies.

Qualities. — This salt is inodorous; has a salt, bitterish, acrid and cool taste; very slightly attracts moisture from the air; and has a specific gravity of 1·450. It is rather ductile, and therefore not very easily pulverized. It requires 3·25 times its weight of water at 60°, and its own weight at 212°, to dissolve it; and during its solution a great reduction of temperature takes place. It is also soluble in $4\frac{1}{2}$ parts of alcohol. At a high temperature it sublimes without melting, and is unchanged. When dissolved in boiling water, it forms, as the solution cools, in tetrahedral, or in flaky plumose crystals. Its components are 31·5 of ammonia, and 68·5 of acid, independent of the water of crystallization. It combines with oxymuriate of mercury, and increases its solubility in water. The sulphuric and nitric acids unite with its alkali, and set free the muriatic acid. Potass and its carbonate, carbonate of soda, barytes, strontites, lime, chalk, magnesia, carbonate of magnesia, combine with its acid, and set free the ammonia, which is rendered sensible by its odour. Superacetate of lead, when added to a solution of it, throws

down a precipitate of muriate of lead; it is decomposed also by nitrate of silver, the base of which forms an insoluble compound with muriatic acid: hence these salts are incompatible in prescriptions with muriate of ammonia: but it may be combined in solution with the sulphate of copper, or of zinc.

Medical properties and uses. — This salt was formerly considered a powerful aperient and attenuant of viscid humors, acting as a diaphoretic, diuretic, purgative, and emetic, according to the mode of exhibition, or the extent of the dose; but it is now scarcely ever ordered as an internal medicine. Externally, it is advantageously employed, when mixed with its weight of nitre, and dissolved in eight parts of water, on account of the cold produced during its solution, to abate the pain and heat of inflammation and to allay violent headache. It is useful, also, in cases of mania, plethoric apoplexy, and injuries of the head, and to assist in the reduction of hernial tumors; but when it is employed for this purpose the solution should be made immediately before applying it to the affected part. It is also a useful application in dropsy of the thyroid gland.[1] Owing to its stimulant qualities, it forms an excellent discutient, when dissolved in the proportion of ℥j of the salt, in f℥ix of water, with f℥j of alcohol, in indolent tumors, gangrene, scabies, and chilblains; in which cases it is better not to be too recently dissolved: and as a gargle, it is occasionally useful in cynanche. A plaster formed with ℥ss of the muriate, ℥j of soap, and ℥ij of acetate of lead, is highly recommended by Dr. Paris[2] as a rubefacient in pulmonary affections. Its efficacy depends on the extrication of ammonia by the decomposition of the muriate, on which account it should be renewed every twenty-four hours.

Officinal preparations. *Ammoniæ subcarbonas*, L. E. D. *Liquor Ammoniæ*, L. *Aqua Ammoniæ*, E. D. *Hydrarg. præcip. alb.*, L., *Alcohol ammoniatum*, E. D. *Ferrum ammoniatum*, L. E. D. *Aqua Cupri ammoniati*, D. *Sulphuretum Ammoniæ*, D. *Murias Ammoniæ et Ferri*, D.

AMMONI'ACUM. Vide *Heracleum gummiferum.*

AMY'GDALUS. *Species Plant. Willd.* ii. 982.

Cl. 12. *Ord.* 1. Icosandria Monogynia. *Nat. ord.* Pomaceæ, *Linn.* Rosaceæ, *Juss.*

G. 981. *Cal.* 5-cleft, inferior, *Pet.* 5. *Drupe* with a nut perforated.

Species 2. A. *communis*.[3] The Common Almond-tree. *Med. Bot. 2d edit. t.* 183.

Varieties. β. Amygdalus *sativa*. Sweet Almond-tree.
——— γ. Amygdalus *amara*. Bitter Almond-tree.

---

[1] *Burns on the Anat. of the Neck*, p. 191.
[2] *Pharmacologia.*
[3] Πάδος, Theophrasti.

Officinal. AMYGDALÆ AMARÆ.—DULCES, *Lond.* AMYGDALUS COMMUNIS, NUCLEI, *Edin.* AMYGDALÆ DULCES, *Dub.* Bitter and Sweet Almonds.

Syn. Amandes douces et ameres (*F.*), Bittere und Süsse Mandeln (*G.*), Amandel (*Dutch*), Mandel (*Dan.* and *Swed.*) Migdalowe (*Polish*), Mandorli dolce ed amare (*I.*), Almendra (*S.*), Amendo (*Portug.*), Bādāmie Parsie (*Hind.* and *Pers.*), Lowz (*A.*), Parsie Vadomcotta (*Tam.*), Lonzan (*Mala.*).

The almond-tree is a native of Syria and Barbary; but it is now naturalized in the south of Europe, and even in England [1]; where, however, the fruit seldom ripens. The flowers display themselves in March and April before the leaves are expanded. It rises to the height of twenty feet, and divides into many spreading branches, which are covered with a dark grey bark. The leaves stand upon short foot-stalks, are about three inches long, and three-fourths of an inch broad, elliptical, pointed at both ends, minutely serrated, with the lower serratures glandular, and of a bright green colour. The flowers, which are supported on very short peduncles, are of a pale rose or blush colour, varying to white: the calyx is tubular, with the lip divided into five blunt segments; the petals are five, oval, and convex; the filaments about thirty, inserted into the calyx, tapering, spreading, of unequal lengths, and furnished with orange-coloured, simple anthers: the germen is downy, with a simple style, supporting a round stigma. The fruit is of the peach kind, but flatter, with a tough coriaceous covering instead of the rich pulp of the peach, which opens spontaneously at the longitudinal furrow when ripe. The kernel or almond, which is inclosed in a tender, thick, brittle, spongy shell, is oblong, flattish, rounded at one end, and pointed at the other, and composed of two white cotyledons, enveloped with a thin, pale brown, veined, bitter skin, covered with an acrid meal.

These two varieties of the Amygdalus *communis* are not distinguished from each other, but by the taste of the kernel of their fruit. The *Valentia* almond is a sweet, large, flat almond, pointed at one extremity, and compressed in the middle as if with the thumb. The *Italian* are not so sweet, smaller, and less depressed in the middle. The *Jordan* almonds, which come from Malaga, and are the best sweet almonds brought to England, are said to be the produce of a distinct species of Amygdalus. They are longer, flatter, less pointed at one end, and less round at the other, and have a paler cuticle than those we have described.

Sweet almonds are imported in mats, casks, and cases: the bitter, which come chiefly from Mogadore, arrive in boxes.

---

[1] It was cultivated in England by Lobel before 1570.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0182-3

When the almond is not well preserved, it is preyed on by an insect that eats out the internal part; or, if this does not happen, the oil it contains is apt to become rancid.

Qualities. — The cuticle of both kinds of almonds has an unpleasant bitterish austere taste; but it is easily detached by putting the almonds into boiling water. When thus decorticated, they are said to be blanched.

The blanched *sweet-almond* is inodorous; has a sweet, pleasant, bland taste, and consists chiefly of fifty-four parts of fixed oil, three of mucus, six of saccharine matter, and twenty-four of albumen. When eaten as food, it is not very digestible, probably owing to the albumen; and requires to be well masticated. The *bitter-almond* is also inodorous when entire, but when triturated with water it has the odour of the peach blossom; and the taste is the pleasant bitter of the peach kernel. It contains less fixed oil and more albumen than the sweet almond; and a portion of Prussic, or Hydrocyanic acid, upon which its narcotic power is supposed to depend. This variety of the almond is said to operate as a poison on dogs and some other animals, but not generally on the human species. The distilled water, however, of the bitter almond exerts an action not less deleterious than that of laurel water on the human frame. It produces vertigo, head-ache, or rather a sense of weight at the summit of the head, tinnitis aurium, dizziness of sight, and vomiting, when taken to the extent of thirty drops only; and a drachm of it has killed a stout dog.[1] When a large dose is taken, a paralytic state of the extremities supervenes, the pupil remains unalterably dilated, and the excitability of every organ of sense is diminished; indeed, death almost instantly follows. In order to counteract its poisonous effects, when that can be done, we must have recourse to diffusibles, as brandy and ammonia; or three or four spoonsful of oil of turpentine may be given at intervals of half an hour. The essential oil of bitter almonds which contains the Prussic acid, is prepared from the cake remaining after the expression of the fixed oil, by submitting it to distillation with water. One hundred weight of the cake generally yields from two ounces to two and a half ounces of the essential oil. From the experiments of Mr. Hennel it appears, that the Hydrocyanic acid may be separated from this oil by digesting it with red oxide of mercury, which is converted into a cyanuret. The fixed oil, which both varieties of

[1] Much information on this subject may be obtained from the works of Fodere, Langrish, Heberdeen, Watson, and a recent Treatise on Hydrocyanic Acid, by Dr. Granville. See also the *Appendix* to this work.

the almond yield by expression in large quantity, is insipid and inodorous when heat has not been employed.

Medical properties and uses. — Sweet almonds are used more as food than as medicine; but they afford little nourishment. Heartburn is said to be relieved by eating six or eight of them decorticated. When triturated with water, milky mixtures or emulsions are formed, which shall be afterwards noticed; and they are also used in pharmacy for assisting, by trituration, the combination of some substances, such as camphor and the resins, with water. Bitter almonds are scarcely ever used medicinally, although Bergius[1] mentions a case of intermittent having been cured by them, when the Peruvian bark had failed; and reflecting on the effects which have been found to result from the use of the Hydrocyanic acid, I have employed the bitter almond in pulmonary and dyspeptic affections, hooping cough, and asthmatic complaints, with the best success. As a local application, I have found the emulsion extremely beneficial when used as a lotion in acnè rosacea, and in impetigo. Owing to a peculiar idiosyncrasy of some habits, the smallest quantity of the bitter almond taken into the stomach produces urticaria, and other unpleasant effects.

Officinal preparations. *Oleum Amygdalæ*, L. E. D. *Emulsio Amygdalæ comp.* E. D. *Emulsio Acaciæ arabicæ*, E. D. *Emulsio Camphoræ*, E. *Confectio Amygdalarum*, L.

AMY'LUM. Vide *Triticum hybernum.*

AMYRIS. *Spec. Plant. Willd.* ii. 333.

Cl. 8. *Ord.* 1. Octandria Monogynia. *Nat. ord.* Terebintaceæ, *Juss. G.* 755. *Cal.* four-toothed. *Pet.* four oblong. *Stig.* four-cornered. *Berry* drupaceous.

Species 2. Amyris *elemifera.* Elemi tree.

——— 6. Amyris *gileadensis.* Balsam of Gilead tree. *Med. Bot. 2d edit.* 603. *t.* 214. *Bruce's Abyssinia*, vol. v. p. 16. t. 2, 3.

1. AMYRIS ELEMIFERA.

Officinal. ELEMI, *Lond.* ELEMI; RESINA, *Dub.* Elemi.

Syn. Eleme (*F. G. I.*), Goma de Limon (*S.*).

The Elemi tree, of the botanical characters of which we know very little, is a native of Carolina and the Brazils. It does not, according to Catesby, rise to a great height; and the trunk is small, and covered with a grey bark. The leaves are opposite, on footstalks; ternate, and sometimes pinnate; with stiff, pointed leaflets, of a bright green colour, shining, and downy underneath. The flowers are in terminal corymbs; small, white, with the petals inflex at the tips. The fruit is the size and figure of an olive.

The resin is obtained by making incisions in the bark in dry weather, and is left to dry in the sun as it exudes. It

[1] *Mat. Med.* art. *Amygdalus.*

used to be brought from Turkey in long roundish cakes, wrapped in flag-leaves; but the elemi now brought, comes in mats and chests, each containing from four to six pounds' weight.

Qualities. — True elemi has a fragrant aromatic odour, not unlike that of fennel seeds, but stronger. The taste is very slightly bitter, and warm. The cakes are of a pale yellow colour, semitransparent, brittle on the outside, soft and tenacious within, and very fusible. Spec. grav. 1.0182. When distilled with water, it affords $\frac{1}{10}$th of a thin pale-coloured essential oil, on which its fragrance and softness depend; and the residue is a brittle, inodorous resin. Alcohol dissolves the greater part of elemi; but a white, flaky, inodorous matter remains, which is almost entirely soluble in water; hence we may consider the constituents of elemi to be gum, and an intimate combination of resin and essential oil. But no true elemi is now to be found in the shops.

Medical properties and uses. — This resin is stimulant, but is very rarely used as an internal remedy, being chiefly employed for forming the mild digestive ointment which bears its name.

Officinal preparation. *Unguentum Elemi compositum*, L. D.

2. AMYRIS GILEADENSIS.[1]

Officinal. ——, RESINI LIQUIDA, *Edin.* Balsam of Gilead.

Syn. Balsamier de la Mecque (*F.*), Opobalsamo (*I.*), Balsamo (*S.*), Akooyeelarsemoonroome (*Arab.*), Roghen Bulsan (*Pers.*).

This species of amyris is a native of Abyssinia, growing, according to Bruce, among the myrrh-trees behind Azab, all along the coast to the Straits of Babelmandel.[2] It appears, however, to have been transplanted into Judea 1730 years before Christ: and as it was from Gilead in Judea that the merchants brought its resinous product, in early times, to Egypt, it thence derived its appellation *Balasan*, or *Balsam of Gilead.*

This tree rises above fourteen feet in height; has a flat top and stunted aspect, with many spreading crooked branches going off nearly at right angles; the wood is light, open, and covered with a smooth bluish white bark. The leaves are thinly scattered, small, composed of one or two pair of opposite leaflets, with an odd one; these are obovate, entire, veined, and of a bright green colour. The flowers are white, appearing upon the young shoots, three upon one stalk; but two generally drop, and one only produces fruit. The calyx

---

[1] Βαλσάμου δένδρον, Theophrasti et Dioscoridis.

[2] *Bruce's Abyss.* App. p. 16. The whole of Mr. Bruce's account of this tree is highly interesting, and we regard his authority undoubted.

is permanent, divided into four expanded sharp teeth: the petals are four, oblong, concave, spreading; the filaments eight, erect, supporting oblong anthers: the germen is superior, ovate, with a thick style, the length of the filaments crowned with a quadrangular stigma. The fruit opens with four valves, and contains a smooth nut.

The ancients held the balsam obtained from this tree in great esteem, but it does not appear that they were well acquainted with the tree itself. To obtain the balsam, the bark is "cut by an axe, when the juice is in its strongest circulation, in July, August, and the beginning of September. It is then received into a small earthen bottle, and every day's produce gathered and poured into a larger, which is kept closely corked." The first that flows, called opobalsamum[1], "is of a light yellow colour, apparently turbid." It afterwards becomes clear, fixed, and heavier; and the colour, by degrees, deepens to a golden yellow. The opobalsamum of the ancients was the green liquor found in the kernel of the fruit: the carpobalsamum, the next in esteem, was made by the expression of the ripe fruit; and xylobalsamum, or the worst kind, by the expression or decoction of the small twigs. The real balsam rarely finds its way into this country, dried Canada balsam being generally substituted for it; but it wants the peculiar odour of the true balsam.

Qualities.—The odour is at first strongly pungent; but the pungency is lost by exposure to the air, and by age; and the balsam gradually acquires the consistence of turpentine. The colour is yellowish exteriorly, and paler in the inside; the taste is acrid, rough, and pungent. When pure, it dissolves easily in water.

Medical properties and uses.—This balsam was esteemed in the earlier ages as a medicine possessed of almost universal virtues; and at the present day the Arabs use it "in all complaints of the stomach and bowels," reckoning it a powerful antiseptic, and preventive of the plague. Its chief use, however, is as a cosmetic by the Turkish ladies. It is never brought genuine to this country, and we know not why the Edinburgh College retain it in the list of Materia Medica.

ANCHUSA.[2] *Spec. Plant. Willd.* i. 756.

Cl. 5. *Ord.* 1. Pentandria Monogynia. *Nat. ord.* Asperifoliæ, *Linn.* Borragineæ, *Juss.*

G. 277. *Corolla* funnel-shaped: the throat closed with arches. *Seed* engraved at the base.

---

[1] Willdenow has a distinct species under the name Amyris *opobalsamum*; but, in a note, says—"sunt forte non distinctæ species, sed varietates ab ætate vel solo ortæ." *Spec. Plant.* vol. ii. p. 334.

[2] Ἄγχουσα ab ἀγχω *strangulo, suffoco*; the ancients believing that this species of plants choked and destroyed serpents. Vide *Bod. in Theophrast.* p. 835.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0186-7 DFG

Species 7. Anchusa *tinctoria*. Dyer's Alkanet. Lobel. *Icon.* 578.
Officinal. ——, RADIX, *Edin.* ANCHUSA; RADIX, *Dub.* Alkanet root.
Syn. Orcanette (*F.*), Alcanna (*I.*)

This species of anchusa is perennial, a native of the south of Europe, where it is cultivated in great abundance, particularly near Montpelier. It is found in our gardens as an ornamental plant; but its roots do not acquire in Britain the beautiful colour for which the foreign are prized. It flowers from June until October. The root is long, round, fibrous, white within, and covered with a purplish red bark. The stem rises eighteen inches in height; is round, rough, hairy, and branched; with long, alternate, sessile, lanceolate, obtuse, hairy leaves. The flowers are of a reddish purple colour, and terminate the branches in close clusters. The calyx is persistent, divided into five oblong erect segments; the corolla funnel-shaped, consisting of a cylindrical tube the length of the calyx, and a five-tooth expansion, closed by five scaly leaflets. The filaments are shorter than the corolla, bearing simple anthers; the germens four, with filiform styles the length of the filaments, each crowned with an obtuse notched stigma.

Alkanet root is brought to this country chiefly from France. It is in twisted pieces, with a withered, dusky red bark, easily separated. The smaller roots are the best, as they have proportionally more bark than the larger.

Qualities. — It has a very faint odour, and a bitterish astringent taste when fresh; but the dried root is inodorous and insipid. It imparts a fine, deep-red colour to alcohol, ethers, oils, fats, and wax; but to water, even when hot, it yields only a brown colour. Sulphate of iron strikes a black with the watery infusion; and sulphate of zinc throws drown a copious dark-coloured precipitate.

Medical properties and uses. — Alkanet root was formerly prescribed as an astringent in several diseases; but it is properly rejected from modern practice, and is used as a colouring matter only for oils, ointments, and plasters.

ANE'THUM.[1] *Spec. Plant. Willd.* i. 1469.
Cl. 5. *Ord.* 2. Pentandria Digynia. *Nat. ord.* Umbellatæ.
G. 560. *Fruit* nearly ovate, compressed, striated. *Pet.* involuted entire.
Species 1. A. *graveolens*. Common Dill. *Med. Bot. 2d ed.* 125. *t.* 48.
Species 3. A. *fœniculum*. Sweet Fennel. *Med. Bot. 2d ed.* 127. *t.* 49. *Smith Flor. Brit.* 329.

1. ANETHUM GRAVEOLENS.

Officinal. ANETHI SEMINA. *Lond. Edin.* Dill seed.
Syn. Fenouil puant, ou persil odorant (*F.*), Dill (*G.*), Dille (*Belg.*), Dil (*Dan.*), Dill (*Swed.*), Kopr (*Polish*), Endro (*Portug.*), Eneldo de olor pesado

[1] Ανηθον, Dioscoridis.

(*S.*), Appio palustre, sellano, Sellero (*I.*), Sadăcoopei (*Tam.*), Sowa, (*Hind.*), Moongsi (*Javanese*), Buzralshibbet (*Arab.*).

This plant is an annual, a native of Spain and Portugal, growing generally in corn-fields, and flowering in June and July. It is cultivated in this country.[1] The root is fusiform and long, striking deep into the ground; and sending up several erect, striated, jointed stems, about two feet in height, and branched. The leaves are glaucous and odorous, upon sheathing foot-stalks; doubly pinnated, with the pinnæ linear and pointed. The flowers are in large, flat, terminal umbels, without either universal or partial involucrum; the corolla consists of five ovate, obtuse, concave, yellow petals, with the apexes inflected: the filaments yellow, and longer than the corolla: with an inferior germen, covered by the nectary, and supporting two short styles, terminated by obtuse stigmas.

The seeds of dill, which are the parts of the plant medicinally used, are scarcely the length of a caraway seed, but broader and flatter. They are oval, concave on one side, convex and striated on the other; of a brown colour, and surrounded with a dull pale-yellow or straw-coloured membranous expansion. When good they are heavy, of a bright colour, and an aromatic odour.

Qualities. — The dried seeds have an aromatic, sweetish odour, not very agreeable, nor yet unpleasant; the taste is moderately warm and pungent. These qualities depend on an essential oil, which is extracted by distillation with water, (according to Mr. Brande, in the proportion of 2 lb. to 1 cwt.[2]) and imparted to alcohol by digestion. The bruised seeds yield their flavour to boiling water by infusion.

Medical properties and uses. — Dill seeds are carminative and stomachic. They are scarcely ever employed except in hiccough and the flatulent colic of infants. The dose of the powdered seed is from grs. xv. to ʒj.

Officinal preparations. *Aqua Anethi*, L.

2. ANETHUM FŒNICULUM.[3]

Officinal. FŒNICULI SEMINA, *Lond. Edin.* FENICULUM DULCE; SEMINA, *Dub.* The seed and root of Sweet Fennel.

Syn. Fenouil ou Anis douce (*F.*), Fenchelsamen (*G.*), Venkel (*Dutch*), Fennikel (*Dan.*), Fänkol (*Swed.*), Kopo Wlosky (*Pol.*), Eneldo hinojo (*S.*), Finocchio (*I.*), Hinojo (*S.*), Funcho (*Port.*), Razecanuj (*Arab.*), Badeeyan (*Pers.*), Perumsiragam (*Tam.*), Mayuri (*Hind.*), Adas (*Javanese*).

Fennel is a biennial plant, originally found in the south of Europe only, but now growing abundantly on our chalky soils and cliffs, and flowering in July and August. The root is fusiform, elevating a stem about four feet in height, erect, branching, leafy, striated, and smooth. The leaves are alternate, tripinnate, composed of long, smooth, depending, linear leaf-

[1] It was first cultivated by Gerarde in 1597.
[2] *Manual of Pharmacy.*
[3] Μάραθρον, Hippocratis et Dioscoridis.

lets, of a very deep green colour. The flowers are in large, terminal, many-rayed, flat umbels: the petals five, ovate, emarginate, with their points turned inward; and of a yellow colour: the filaments shorter than the petals, spreading, also yellow, and bearing double anthers. The germen is similar to that of *dill:* the seed ovate, very little compressed, of a brownish olive colour when ripe, three-ribbed, and encircled with a membranous margin.

There are three varieties of fennel; the root of the first of which, the *common fennel*, and the seed of the second, the *sweet fennel*, are officinal. The roots found in the shops are the produce of our own country, and are taken up in the spring; but the seeds are generally imported from Italy.

Qualities.—The roots are covered with a brown bark, are woody and white within, have scarcely any odour, and only a slightly sweetish taste, with very little aromatic warmth; but the *seeds* have a fragrant odour; and a sweet, warm, aromatic taste. These qualities depend on an essential oil, which is dissipated by decoction in water, and separated by distillation: they are completely imparted to alcohol, but only imperfectly to boiling water, by infusion. The seeds contain also a fixed inodorous, insipid oil.

Medical properties and uses.—Fennel was formerly esteemed as a remedy; and supposed to be resolvent, diuretic, carminative, and stomachic; but even as a carminative it is not superior to anise-seed and caraway; and it is therefore now seldom employed. The dose of the bruised seed may be from ℈j to ʒj.

Officinal preparations. *Aqua Fœniculi*, L. D. *Oleum Seminum Fœniculi dulcis*, D.

ANGELICA. *Spec. Plant. Willd.* i. 1428.

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

G. 343. *Fruit* roundish, angular, solid, with reflected styles. *Corollas* equal. *Petals* bent inward.

Species I. Angelica *archangelica*, Garden Angelica. *Med. Bot.* 2*d ed.* 86. *t.* 35. *Smith Flor. Brit.* 1. 311.

Officinal. ———, RADIX, *Edin.* The root of Angelica.

Syn. Angelique (*F.*), Angelikawurzel (*G.*), Tamme Engelwortel (*Belg.*), Angelik (*Dan.*), Angelikerot (*Swed.*), Dziegiel ogrodni (*Polish*), Djajilnik (*Russian*), Angelica domestica (*I.*), Anjelica (*S.*).

This species of angelica is a native of the more northern parts of Europe; but although it has been found growing wild in England, as at Broadmoor near Birmingham, and some other parts, yet it is uncertain whether it be indigenous. It is however abundantly cultivated for medicinal and other purposes; flowering in June and August.[1] The root is biennial, thick, fleshy, and resinous; the stem erect, hollow, round,

[1] It was first described by Joann. Jacob. *de Manlüs*, a writer of the 15th century; and was cultivated in England before 1568.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0189-7

smooth, furrowed, of a purplish hue, rising upwards of five feet in height, and sending off many branches, which terminate in globular many-rayed umbels, composed of dense, hemispherical umbellets. The leaves are numerous, petiolated, large, pinnated; with the leaflets ovate, pointed, cleft, and acutely serrated, smooth, somewhat decurrent, and the terminal ones three-lobed: the petioles membranous at the base, nerved, greatly dilated, and bellying. The involucres are deciduous; the involucels short, consisting of five linear lanceolate leaves. The calyx is five-cleft, minute: the corolla small, of a greenish-white colour; petals five, with the points turned inward: the stamens spreading, longer than the petals; and the germen inferior, supporting two reflected styles with obtuse stigmas. The seeds are large, elliptical, flat on one side, convex on the other, emarginate at both ends, and acutely three ribbed.

The roots of angelica, when wounded in the spring, yield an odorous yellow juice, which being slowly desiccated, proves an elegant gum-resin, very rich in the qualities of the plant. For medicinal purposes, the roots should be dug up in the autumn of the first year; in which case they are more easily preserved; but when gathered in the spring, they become mouldy, and are preyed on by insects. They should be thorougly dried, and kept in a well-aired, dry place: and in order to secure their preservation, Lewis suggests "the dipping them in boiling spirit, or exposing them to steam, after they are dried." The leaves and seeds do not retain their virtues when kept. The stems are cut, when tender, in May, and made into an agreeable sweatmeat by the confectioners.[1]

Qualities.—The odour of every part of the recent plant is fragrant and aromatic; the taste sweetish at first, then aromatic, warm, and slightly bitter. The dried root is corrugated, and of a greyish-brown colour externally; breaks short with a starchy fracture, and presents a firm interior, whitish, with many resinous brown and yellow points. It has the same odour and taste as the recent plant; and yields these qualities to alcohol, and in some degree to boiling water.

Medical properties and uses.—The leaves and seeds when recent, and the root both in the fresh and dried state, are tonic and carminative; but although the most elegant aromatic of northern growth, yet they are scarcely ever prescribed in modern practice. The dose in substance is from ʒss to ʒj, which may be given three or four times a-day.

ANISI SEMINA. Vide *Pimpinella Anisum.*

ANTHEMIS. *Spec. Plant. Willd.* iii. 2174.

---

[1] The Icelanders eat the stems and roots of angelica raw with butter. Vide *Sir Geo. Mackenzie's Travels in Iceland,* 4to. p. 255.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0190-0

Cl. 19. *Ord.* 2. Syngenesia Superflua. *Nat. ord.* Compositæ Discoideæ, *Linn.* Corymbiferæ, *Juss.*

G. 1517. *Receptacle* chaffy. *Seed down* none, or a membranaceous margin. *Calyx* hemispherical, nearly equal. *Florets* of the ray more than five.

* *With a colourless or white ray.*

Species 15. A. *nobilis.* Common Chamomile. *Med. Bot.* 2*d ed.* 47. *t.* 19. *Smith Flor. Brit.* 904.

—— 25. A. *Pyrethrum.* Pellitory of Spain. *Med. Bot.* 2*d ed.* 50. *t.* 20.

1. ANTHEMIS NOBILIS.[1]

Officinal. ANTHEMIDIS FLORES, *Lond. Edin.* CHAMÆMELUM; FLORES, *Dub.* Chamomile Flowers.

Syn. Camomille Romaine (*F.*), Roemische hamiller (*G.*), Romische Kamille (*Dutch*), Romerske Kamulblomster (*Dan.*), Romerske Kamillblommer (*Swed.*), Camomilla Romana (*I.*), Manzanilla de Botera (S.), Marcella Romana (*Portug.*), Chāmaindoopoo (*Tam.*), Baboeneh (*Pers.*), Ehdaklmerza (*Arab.*).

This species of anthemis is an indigenous perennial plant, growing in dry pastures, and flowering in August and September. The greater part of the chamomile, however, which is medicinally used, is cultivated by the growers of physical plants.[2] The roots are woody, fibrous, and spreading: the stems trailing, about a span in length, foliaceous and downy: the leaves verticillately bipinnate, the pinnæ distant, and the leaflets small, threadlike, sharp, generally cleft into three segments; odorous, and of a pale green colour. The flowers are on solitary, terminal, unifloral, naked, striated, hairy peduncles. The calyx is common to all the florets, hairy, with broad membranaceous edges: the disc is yellow and convex; the florets of the radius white, spreading, long, and somewhat elliptical, three-toothed, and turned down; and the seed obscurely crowned.

Both the single, and the double-flowered varieties are cultivated; but as the sensible qualities of the flower reside chiefly in the disc florets, the single kind is preferred: and, as these qualities are also stronger before the tubular florets are blown, the flowers are then picked, and carefully dried for use. Those which are large and whitish are to be preferred.

Qualities. — The whole of the plant is gratefully odorous. The smell of the flowers is strong and fragrant; their taste bitter and aromatic, with a slight degree of warmth; and both the odour and the taste are extracted by water and alcohol. By distillation with water, they yield a small quantity of brownish yellow essential oil,[3] on which the odour and the antispasmodic powers of the plant seem to depend. Hot water takes up nearly one-fourth of the weight of the dry flowers, and when

---

[1] Ανθεμις, Dioscoridis. Ανθεμην, Theophrastis.

[2] Much of what is brought to the London market is grown about Mitcham in Surry. The soil best adapted for it is a dry sandy loam. A wet summer weakens the flavour of the flowers. — *Stevenson's Survey of Surry*, 379.

[3] The quantity obtained is about ʒjss. from 1 cwt. of the flowers. *Brande's Manual.*

the infusion is evaporated, a bitter extractive matter and a small portion of resin remain. The active principles, therefore, of chamomile flowers appear to be bitter extractive, resin, and essential oil.

Medical properties and uses. — Chamomile flowers are tonic, carminative, and slightly anodyne: yet when a strong infusion of them is taken in a tepid state, it proves powerfully emetic. When given in substance, united with opium and astringents, if the bowels be easily affected, they have been successfully used for the cure of intermittents: and the infusion, in combination with ginger, or other aromatics, and the alkalies, is an excellent stomachic in dyspepsia, chlorosis, gout, flatulent colic and chronic debility of the intestinal canal.[1] The tepid strong infusion is a ready emetic, and is often employed to promote the operation of other emetics. By coction in water the essential oil is dissipated; chamomile flowers, therefore, ought never to be ordered in decoctions. Externally they are used as fomentations in colic, intestinal inflammation, and to phagedenic ulcers: and their infusion is also found to be an useful addition to emollient anodyne glysters in flatulent colic, and in irritations of the rectum producing tenesmus. The dose of the powdered flowers is from ʒss to ʒj, twice or thrice a day.

Offi. preparations. *Decoctum Anthemidis nobilis*, E. D. *Infusum Anthemidis*, L. *Extractum Anthemidis*, L. E. *Oleum Anthemidis*, L.

2. ANTHEMIS PYRETHRUM.[2]

Officinal. PYRETHRI RADIX, *Lond. Edin.* PYRETHRUM; RADIX *Dub.* Pellitory root.

Syn. Pyrèthre (*F.*), Bertram Wurtzel; Zahn wurtzel (*G. Dutch, Dan., Swed.*), Zebne Ziele (*Pol.*), Piretro (*I.*), Anthemis pelitri (*S.*), Akākrācārum (*Tam.*), Akurkurha (*A.*), Akkaraputta (*Cyng.*).

This is a perennial plant, a native of the Levant, Barbary, and the south of Europe. It is sometimes cultivated in Britain[3]; flowering from June to July. The root is long, tapering, about the thickness of a finger, with a brownish cuticle, sending off several lateral fibres; and throwing up many trailing stems, more commonly simple and unifloral than branching. The leaves are doubly pinnate, with narrow linear segments of a pale green colour. The flowers are large, with the florets of the radius white on the upper, and purple on the under side, and those of the disc yellow. In form they resemble the flowers of Anthemis *nobilis*.

Pellitory root is brought into this country from the Levant, and the coast of Barbary, packed in bales. It is frequently mixed with other roots, from which, however, it is easily distinguished.

---

[1] Selle's celebrated Pulvis Ecphracticus consisted of equal parts of chamomile flowers, rhubarb, carbonate of potass, magnesia, sulphur, and oleo-saccharum of fennel.—*Selli lib. de Cur. Stom. Morb.* vol. i. p. 131. (quoted in Med. Rep. vol. i.)

[2] Πυρεθρον, Dioscoridis. [3] It was cultivated in England by Lobel in 1570.

Qualities.—The dried root, as we receive it, is inodorous. When chewed it appears at first insipid, but after a few seconds, excites a glowing heat, and a pricking or thrilling sensation on the tongue and lips, which remains for ten or twelve minutes. The pieces break with a short resinous fracture; the transverse section presenting a thick brown bark studded with black shining points, and a pale-yellow, radiated inside. The pungency appears to depend on a fixed oil, which is deposited in vesicles in the bark. M. Gautier describes it as solid, having a reddish colour and strong odour.[1] It is completely extracted by alcohol and sulphuric ether.

Medical properties and uses.—Pellitory root possesses powerful stimulant properties. Its chief use is as a sialagogue, to stimulate the excretories of the salivary glands, and excite an increased flow of saliva; by which inflammations and congestions of the neighbouring parts are relieved. Hence it has been found useful when chewed in some kinds of head-ache, apoplexy, chronic ophthalmia, rheumatic affections of the face, and tooth-ache; and by its direct stimulus in paralysis of the tongue and muscles of the throat. A gargle made by boiling ℥ss of the bruised root in Oj. of water until the fluid is reduced one-half, and to the strained liquor adding f℥ii. of Liq. Ammoniæ has been long employed in St. Bartholomew's Hospital, in cases of relaxation of the uvula and soft palate.

ANTIMO'NIUM. Στιμμι. *Stibium.* Antimony.

Syn. Antimoine (*F.*), Spiessglanzmetall (G.), Antimonie (*I.*), Antimónio (*S.*).

The term antimony was formerly given to an ore, in which antimony was combined with sulphur; but it is now solely appropriated to express the pure metal. It is found in various parts of the world in different states of combination.

A. Metallic. (at Stalberg, Sweden, and Allemont in France.)
g. i. combined with silver and iron. Sp. 1. *Native antimony.*
ii. ——— with sulphur. - - - - - - - 1. *Grey sulphuret of antimony.*
Var. *a.* compact.
b. foliated.
c. striated.
d. plumose.
2. *Nickeliferous sulphuret.*
B. Oxidized - - - - - - - - - { 1. *White antimony.* 2. *Antimonial ochre.*
iii. combined with oxide of iron. - { 3. *Red antimony.*

The grey sulphuret is the ore in which it is most abundantly procured, and from which the pure metal is generally obtained. Pure antimony is of a white colour, with a bluish shade, brilliant, and very slowly tarnished in air of a low

[1] *Ann. de Chim. et Phys.* viii. p. 101.

temperature. The texture is foliated; moderately hard; brittle and pulverulent. It is fusible at 809°: in a higher temperature it volatilizes in close vessels; but, if exposed to the air, is very rapidly oxidized. It decomposes water when ignited, and is oxidized by, and combines with, the sulphuric, nitric, and muriatic acids; but the other acids unite with its oxides only. It readily combines with sulphur and phosphorus. Its specific gravity, according to Brisson, is 6·702. The pure metal when rubbed between the fingers communicates to them a peculiar taste and smell, but it exerts no action on the body, nor is it used for officinal purposes.

Officinal. ANTIMONII SULPHURETUM, *Lond.* SULPHURETUM ANTIMONII, *Edin. Dub.* Sulphuret of Antimony.

Syn. L'Antimoine sulfure (*F.*), Spiessglanz (*G.*), Spiesglas (*Belg.*), Spidseglas (*Dan.*), Rã Spetsg'ans (*Swed.*), Szpiglas (*Polish.*), Urjienakulloo (*Tam.*), Sulfuro d'Antimonio (*I.*), Antimonio (*Portug.*), Kohul (*Arab.*), Surmeh (*H. Pers. Duk.*), Sauvira (*San.*).

Sulphuret of antimony is commonly sold in loaves, under the name of *crude antimony;* and is the *grey ore*, separated from the stony matter and other gross impurities with which it is naturally combined. It is the *striated variety*, the most common of all the antimonial ores, found both in masses and crystallized in Hungary, Saxony, France, Tuscany, Spain, Cornwall in England, and Dumfrieshire in Scotland; generally "in micaceous schistus and clay porphyry, mixed with pyrites and oxides of iron." In its natural state, its colour is light lead grey; its internal lustre splendent; its fracture radiated, affording splintery fragments. It is soft; not very brittle; but easily frangible.

Sulphuret of antimony is fitted for the market by the following process. The ore is separated from the greater part of the stony gangue by hand, and then placed in the bed of a reverberatory furnace, covered with charcoal powder. As it is brought to a low red heat, the sulphuret of antimony is fused, while the earthy parts float on the surface, and are taken off with a rake or ladle: and the fluid portion, when cast into the form of loaves or large cakes, is fit for sale, and forms the *crude antimony* of commerce.[1] Sometimes the ore is broken into small pieces, then washed and put into a pot perforated with holes, which is let into the mouth of another pot, so that the fluid sulphuret flows into the undermost, while the infusible matter remains in the uppermost. These loaves are dark-grey externally, but internally they have a striated structure, and considerable brilliancy. Their goodness depends on their compactness and weight, the largeness and distinctness of the striæ, and the volatility of

[1] *Journal des Mines, Aikin's Dictionary of Chemistry.*

the sulphuret. When carelessly prepared, they contain lead, sometimes arsenic, and occasionally manganese and iron. When they contain much lead, the structure is more foliated, and less distinctly striated, while, at the same time, the volatility is so much diminished that a portion, which is the lead, remains fixed; arsenic is discovered bythe garlic odour emitted when the sulphuret is thrown on live coals; manganese and iron, by their not being volatilized when it is exposed to a red heat, and iron in particular by the brown colour produced by deflagrating them with Nitre. The specific gravity of the sulphuret is about 4·368; and its constituents are antimony 73·8, sulphur 26·2, in 100 parts; or, according to the atomic doctrine, 1 atom of antimony = 45, and 1 atom of sulphur = 16, the weight of an atom of the sulphuret being = 61.[1] The greater part of the sulphuret used in this country is imported from Germany and Holland. It should never be purchased in the form of powder.

Qualities.— Sulphuret of antimony is inodorous, insipid, of a leaden grey or steel colour, staining the fingers; has a rough spicular fracture, and is insoluble in water and alcohol. Its brilliancy is dulled by long exposure to the air; in a red heat it melts, and is partly dissipated along with its sulphur in the form of a white smoke; and what remains in the crucible is a grey, ash-coloured oxide. It is slightly acted upon by the vegetable acids[2]; and decomposes the sulphuric and nitric acids when assisted with heat; the metallic part of the sulphuret is oxydized, and sulphureous acid and nitrous gases are disengaged, the muriatic, even in the cold, decomposes it, and sulphuretted hydrogen is extricated. The fixed alkalies combine with it, and form compounds used in medicine.[3]

Medical properties and uses. — Sulphuret of antimony is not an active medicine when taken into the stomach, unless it meets with acid in that viscus and the bowels, when it acts with extreme violence; before it is prescribed, therefore, the bowels should be opened. It was not employed internally until the middle of the fifteenth century; and now, owing to the uncertainty of its operation, its occasional violent action, and

[1] Dr. Thomson's proportions, are antimony 100, sulphur 35·572; nearly a mean of all the other analyses that have been published: Vauquelin stated them to be antimony 100, sulphur 33·333; Wenzel, antimony 100, sulphur 29·870; Proust, antimony 100, sulphur 33·333; Dr. J. Davy, antimony 100, sulphur 34·960; Berzelius, antimony 100, sulphur 37·000; Bergman, antimony 100, sulphur 35·035. *Thomson's Chemistry*, 5th edit. i. 536.

[2] Wine was formerly put into cups made of sulphuret of antimony, and owing to the acid acting upon sulphuret, it acquired an emetic quality.

[3] The sulphuret was used by the Greek ladies, and is still employed by the Turkish ladies for staining the eyelashes black, which softens the appearance of the eye. It was a custom among the Jews also; for, although in our translation of the Bible, Jezebel is described as having "painted her face," (2 *Kings*, ix. 30.) yet the expression in the Hebrew means, literally, "put her eyes in painting."

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0195-0

the difficulty of obtaining it perfectly free from other noxious metals, as copper, lead, and arsenic, it is almost entirely discarded from modern practice. It has been given in gouty and rheumatic affections, in scrofula, and other glandular obstructions, and in chronic cutaneous eruptions.

It produces perspiration; and in a few instances in which it was given in large doses, Dr. Cullen found that some nausea, and even vomiting were excited. It is freely used in veterinary practice, and is given to horses, mixed with their food, to produce a smooth coat. Its chief use is for the preparation of the other antimonial remedies.[1]

The dose of the sulphuret may be from ten grains to one drachm, or more if the stomach can bear it.

Officinal preparations. The table drawn up by Dr. Black has generally been given as presenting the best view of the officinal preparations of which antimony is the basis; but as many of those mentioned in it have been long since disused, and the nomenclature of all is changed, we have altered it so as to present, on the same plan, a distinct view of the preparations now found in the British Pharmacopœias.

Medicines are prepared from SULPHURET of ANTIMONY.

I. By trituration in the metallic state united with sulphur.
  1. *Sulphuretum Antimonii præparatum*, E. D.

II. By the action of heat; (*oxidized.*)
  2. *Antimonii vitrum*, L.
     Oxidum Antimonii cum sulphure vitrificatum, E.
  3. *Oxidum Antimonii vitrificatum cum cera*, E.

III. By the action of heat with phosphate of lime; (*oxidized.*)
  4. *Oxidum Antimonii cum phosphate Calcis*, E.
     Pulvis antimonialis, L. D.

IV. By the action of alkalies; (*oxidized.*)
  5. *Antimonii Sulphuretum præcipitatum*, L. E.
     Sulphur antimoniatum fuscum, D.

V. By the action of acids; (*oxidized.*)
  6. *Oxydum Antimonii nitro-muriaticum*, D.
     Murias Antimonii, E.
  7. *Antimonium tartarizatum*, L.
     Tartras Antimonii, olim *Tartarus emeticus*, E.
     Tartarum antimoniatum, sive *emeticum*, D.
  8. *Vinum Antimonii tartarizati*, L.
     Vinum Tartratis Antimonii, E.

ANTIMONII VITRUM, Lond. *Glass of antimony.*

This is a vitrified protoxide of antimony, combined with a small portion of the undecomposed sulphuret, from which it is prepared. The sulphuret, reduced to a coarse powder, is

---

[1] It is an ingredient in *Spilsbury's Drops*, which, according to Dr. Paris, consist of *Corrosive Sublimate* ʒij., *prepared Sulphuret of Antimony* ʒj., *Gentian root* and *Orange-peel*, of each, ʒij., *Shavings of red Saunders* ʒj., made into a tincture, with *a pint of proof Spirit* digested and strained.

exposed to the action of a gentle heat, which is gradually augmented so as to drive off a large proportion of the sulphur, which rises in vapours of a white colour and sulphureous odour. The heat is then much augmented, until the powder, when brought to a red heat, exhales no more vapours. During the roasting, the powder is continually stirred to prevent it running into lumps; and, when this part of the process is finished, it is melted with an intense heat. As soon as it has assumed the appearance of fused glass, it is poured on a heated brass plate.

It may be more readily prepared, in a small way, by deflagrating sulphuret of antimony with twice its weight of nitrate of potass, and melting the protoxide, thus obtained, in a crucible, with less than one-eighth of its weight of sulphur. In this process, the protoxide of antimony, in melting, partially loses its oxygen; and this deoxygenized portion, uniting with the sulphur and being converted into sulphuret, combines, at the moment of its formation, with the remaining undecomposed protoxide, and forms the glass of antimony.

Glass of Antimony, thus prepared, is sold in small flat fragments, glazed on one side and dull on the other, heavy, and having a metallic character.

Qualities.—Glass of Antimony is inodorous, insipid, semitransparent, and by transmitted light of a fine hyacinthine colour. Its specific gravity is 4·95.[1] It is fusible in the flame of a candle, and soluble in the mineral acids. On dissolving it in muriatic acid, sulphuretted hydrogen gas is given out. According to Proust, it consists of eight parts of protoxide of antimony, and one part of sulphuret of antimony. Thenard has shown that 100 parts of this oxide contain 16 parts of oxygen. The glass always contains silicious earth; generally, according to Vauquelin, in the proportion of from 9 to 10 parts in 100, an ingredient of the product which is probably derived from the crucible, during the vitrification of the protoxide. In a late analysis, M. Soubeiran has stated the following to be its constituents — protoxide of antimony 91·5, silica 4·5, peroxide of iron 3·2, sulphuret of antimony 1·9.

Medical properties and uses. — Glass of Antimony is so acrid, harsh, and uncertain in its operation, that it is never medicinally employed; and is retained in the Pharmacopœia merely for the purpose of preparing some other antimonial preparations.

Officinal preparations. *Antimonium Tartarizatum*, L. *Oxidum Antimonii vitrificatum cum cera*, E.

[1] The sp. grav. of *glass of lead* is 6·95, which offers an easy mode of detecting it when mixed with glass of antimony.

All the preparations of antimony contained in the table, have one general mode of action, and possess, therefore, the same medicinal virtues. Their general operation is evacuant, either by the stomach, the bowels, or the skin; but their determination to these particular parts depends more on the dose, and the constitution and state of the patient, than on the nature of the preparation. In small doses they produce nausea, and diaphoresis; in larger doses, vomiting and purging.

Antimonials, prior to the time of Basil Valentine, were used only in veterinary medicine: but ever since they were introduced by that learned Benedictine[1] into the Materia Medica, they have been very generally employed for the cure of febrile and inflammatory diseases, when the excitement is great. In the latter stage of fever, however, when much debility prevails, their use is contraindicated. Some have imagined that the preparation which produces the least sensible evacuation, the antimonial powder of the London College, or its prototype James's powder, is to be preferred in typhus, and the tartarized antimony in synochus; believing that the benefit in the first disease is greater when no sensible evacuation is produced: but as this implies some inexplicable specific action of that preparation, we are not inclined to admit the distinction.

ARBUTUS. *Spec. Plant. Willd.* ii. 616.

Cl. 10. *Ord.* 1. Decandria Monogynnia. *Nat. ord.* Bicornes, *Linn.* Ericæ, *Juss.*

G. 871. *Cal.* five-parted. *Corolla* ovate, the mouth pellucid at the base. *Berry* five-celled.

Species 7. A. *Uva Ursi.* Trailing Arbutus, or Bearberry. *Med. Bot. 2d edit.* 287. *t.* 100. *Smith's Flora Britan.* i. 403.

Officinal. UVÆ URSI FOLIA, *Lond. Dub.* ARBUTI UVÆ URSI FOLIA, *Edin.* Leaves of Uva Ursi, Bearberry, or Trailing Arbutus.

Syn. Bousserole; Raisin d'ours (*F.*), Baerentraube; Sandberren (*G.*), Beerendruif (*Dutch*), Mulbär-riis (*Dan.*), Mjölonris (*Swed.*), Borowekowe (*Pol.*), Uva Orsina (*I.*), Madronna Uva de Orso; Guaynha (*S.*), Uva de Urso (*Port.*), Kleh (*Chipewyan*), Attoonagaweeat, (*Esquimaux*).

This shrub is a native of the north of Europe and is found growing wild on the heathy mountains of Scotland, flowering in June. It is a low shrub, with the branches nearly trailing; woody, and the bark smooth. The leaves are not unlike those

---

[1] BASIL VALENTINE was a Benedictine monk at Erford in Germany. He was born in the year 1394, and was the first person who applied chemistry, which prior to his time was considered merely as the art of making gold, to the purposes of medicine. He was the discoverer of the virtues of antimonial preparations as medicines; and has celebrated them in his "*Currus Triumphalis Antimonii*," a work written in high Dutch: but of which there is an elegant Latin translation by Kirkringius. To Basil Valentine we are also indebted for the discovery of *Ammonia*, and of *Ether*. He recommended a *fixed alkali*, made from the shoots of the vine, cut in the beginning of March, for the cure of the gout and gravel. He was the chief of the medical alchymists.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0198-8

of the myrtle, thick, evergreen, alternate, obovate, or wedge-shaped, on short petioles; with a net-work of veins on the under surface, which is pale green, whilst the upper is of a very deep green colour, and glossy. The flowers are in small clusters, each supported on a red pedicel. The calyx is small and obtusely five-toothed; the corolla tubular, oval, flesh-coloured, or whitish with a red lip, divided at the margin into five minute, obtuse, reflex segments: containing ten short, downy filaments crowned with erect reddish anthers; and an oval germen, bearing a style longer than the anthers, with a simple stigma. The fruit is a small, round, smooth, glossy, red berry, with a depressed umbilicus, five-celled, of an austere taste, and containing five angular seeds.

The plant should be procured in autumn; and "the *green* leaves alone selected and picked from the twigs, and dried by a moderate exposure to heat."[1] The leaves are sometimes adulterated with those of Vaccinium *Vitis Idæa*, which however are easily detected by wanting the reticulated surface of the Uva Ursi leaves, and by their infusion not yielding either tannin on the addition of a solution of isinglass, nor displaying the presence of gallic acid on the addition of sulphate of iron.

Qualities. — The fresh leaves are inodorous, and have a slightly bitter, astringent taste, leaving a sweet sensation in the mouth. When properly dried and powdered, they acquire an odour similar to that of Hyson tea; but the taste remains the same, the degree of bitterness only being increased. The colour of the powder is a light brown, with a shade of greenish yellow. Both water and alcohol extract its virtues, and the watery infusion strikes a deep black colour with sulphate of iron. According to the analysis of Melandri and Moretti, the leaves yield tannin, mucus, bitter extractive, gallic acid, some resin, lime, and an oxygenizable extract.

Medical properties and uses. — Uva Ursi possesses astringent properties[2], on which account it was employed by the ancients in several diseases; but it was not till after the middle of the last century that the attention of modern practitioners was directed to it, as a remedy for calculous complaints, and ulcerations of the urinary organs, by De Haen. His observations were confirmed by Cullen; who, however, referred the good effects it produced to its action on the stomach. It has also been employed in menorrhagia, cystirrhœa, diabetes and other fluxes; and Dr. Bourne has lately recommended it in phthisis pulmonalis. He combined it with Cinchona and Opium, but

[1] *Cases of Pulmonary Consumption, &c. by Robert Bourne, M.D.* 8vo. *Lond.* 1806.
[2] It is used in Russia for tanning leather.

the cases he published were scarcely sufficiently decisive to confirm its use in this complaint. The dose of the powdered leaves is from ℈j. to ʒj. to be taken two or three times a-day.

ARCTIUM.[1] *Spec. Plant. Willd.* iii. 1630.

Cl. 19. *Ord.* 1. Syngenesia Æqualis. *Nat. ord.* Compositæ Capitatæ, *Linn.* Cinarocephalæ, *Juss.*

G. 1429. *Receptacle* chaffy. *Calyx* globular; the scales at the apex with inverted hooks. *Seed-down* bristly chaffy.

Species 1. Arctium *Lappa.* Common Burdock. *Med. Bot. 2d edit.* 32. *t.* 13. *Eng. Bot.* 1228. *Smith's Flora Britan.* ii. 844.

Officinal. ARCTII LAPPÆ SEMINA ET RADIX, *Edin.* BARDANA; RADIX, *Dub.* The root of Burdock.

Syn. Bardane *(F.)*, Bardana *(I.)*, Bardána *(S.)*

This is an indigenous biennial plant, common on the sides of roads and in waste places; flowering in July and August. It is so well known as scarcely to require a description. The root is spindle-shaped, simple, externally of a brown colour, and internally white; the stem succulent, rising three or four feet in height, with spreading branches; and very large, undulated, cordate leaves, of a dark green colour above, and whitish underneath, supported on long footstalks. The flowers are in terminal panicles; the calyx is common, globular, composed of imbricated scales, with hooked extremities, by which they adhere to clothes, and the fur of animals; the corolla is compound, with purple uniform florets, tubular, five-cleft, and all fertile. The receptacle is punctured; the seed downs are rough and prickly, and the seeds quadrangular.

Qualities. — The roots of Burdock are inodorous, the taste sweetish, with a slight degree of bitterness and astringency. The seeds, which are sometimes used, are aromatic, bitterish, and subacrid.

Medical properties and uses. — The seeds and roots of this plant possess some diuretic powers, and are said to determine also to the surface, without exciting nausea, or increasing irritation. They have been employed, and, as far as report can be credited, with advantage, in scurvy, arthritic affections, lues venerea, phthisis, and nephritic complaints. We have no experience of their efficacy; but are ready to believe that the remedy is at least safe. A decoction, made by boiling two ounces of the fresh root in three pints of water to two, should be taken, in divided doses, in twenty-four hours.

ARGENTUM, *Lond. Edin.* ARGENTUM; IN LAMINAS EXTENSUM, *Dub.* Silver. Silver Leaf.

Syn. Argent *(F.)*, Silber *(G.)*, Silwer *(Swed.)*, Argento *(I.)*, Pláta *(S.)*, Villie *(Tam.)*, Rupáh *(H.)*, Fezzeh *(A.)*, Nokra *(Pers.)*, Perak *(Malay)*, Peddie *(Cyng.)*, Rajata *(Sans.)*, Im-root *(Esquimaux)*.

---

[1] Αρκτιον, Dioscoridis.

Silver exists native, and mineralized, in different parts of the globe, at Barnaoule in western Siberia; but not in any very great abundance. It is found,

A. In its metallic state;	
a. pure, crystallized.	Sp. 1. *Native silver.*
b. alloyed with gold.	2. *Auriferous silver ore.*
c. ——— with antimony.	3. *Antimonial silver.*
d. ——— with iron and arsenic.	4. *Arsenical silver.*
e. ——— bismuth.	5. *Bismuthic silver.*
B. Sulphurets;	
f. combined with sulphur.	1. *Sulphuret of silver.*
g. ——— with lead, antimony, and iron.	2. *White silver ore.*
C. Oxidized;	
h. combined with antimonial sulphuret of silver.	1. *Red silver ore.* Subsp. *a.* dark red. *b.* light red.
D. Salts;	
i. combined with muriatic acid.	1. *Horn silver, common and earthy.*
k. ——— with carbonate of antimony.	2. *Carbonate of silver.*

Besides these ores, there are many metallic ores which contain silver in sufficient quantity to render the extraction of it profitable. In its native state, it is in small lumps, or crystallized in cubes, hexahedrons, octahedrons, or dodecahedrons; and occasionally assumes the form of leaves, threads, or twigs.[1] Its colour is white, its lustre metallic, and fracture hackly. Its specific gravity is from 10 to 10·338. It is not perfectly pure, but contains from ·03 to ·05 of gold, or arsenic or antimony. But silver is obtained in its pure metallic state generally either by fusion or by amalgamation. By the first process the ore is roasted to expel the sulphur, antimony, arsenic, or other volatile principles; the residuum is then fused with lead, and exposed in a cupel, (a vessel made of bone or of wood ashes,) to a strong heat in the hearth of a refining furnace: when the lead and the foreign metals being thus oxidized, are in part absorbed by the porous cupel and in part volatilized and driven off by the current of air from the bellows or the blast pipe. An experienced eye knows when the silver is sufficiently pure; but in general it requires a second cupellation at a higher temperature to purify it completely from the lead with which it is combined. By the second process, the ore is first roasted, then ground to a fine powder, washed, and formed into an amalgam with mercury, by being mixed in small barrels made to revolve very rapidly on their axes by means of machinery. The silver is then separated from the mercury by distillation.

[1] It is found in this form in the famous mine of *Potosi*, and is called *dendrites*.

Qualities. — Pure silver is a brilliant-white, insipid, inodorous, sonorous metal, with a very rich lustre, which it loses when long exposed to the air, owing to sulphureted hydrogen being almost always present in the atmosphere. It is in hardness between iron and gold, of considerable malleability, the finest silver leaf being only one-third thicker than gold leaf. It is of inferior ductility to gold, platina, and iron. Its specific gravity is 10·47. Silver is fusible at 28° Wedgwood; volatilized by a stronger heat: but difficult of oxidizement by the action of heat and air. It is oxidized by several of the acids, and combines with them; but none of the compounds, except that produced with the nitric acid, are used in medicine.

Medical properties and uses. — Metallic silver has no action on the human body; but when combined with nitric acid, it forms a very powerful remedy. Many of the instruments used by the surgeon require to be made of silver.

Officinal preparation. *Argenti Nitras*, L. E. D.

ARISTOLOCHIA.[1] *Spec. Plant. Willd.* iv. 151.

Cl. 20. *Ord.* 4. Gynandria Hexandria. *Nat. ord.* Sarmentaceæ, *Linn.* Aristolochiæ, *Juss.*

G. 1609. *Cor.* of one petal, strap-shaped, ventricose at the base. *Cap.* six-celled, inferior, containing many seeds. *Stem* twining, frutescent.

Species 27. A. *serpentaria.* Virginia Snakeroot, or Birthwort. *Med. Bot. 2d edit.* 152. *t.* 59. *Veg. Mat. Med. of the United States*, pl. 25.

Officinal. SERPENTARIÆ RADIX, *Lond.* —— RADIX, *Edin.* SERPENTARIA VIRGINIANA; RADIX, *Dub.* Serpentaria Root.

Syn. Serpentaire (*F.*), Virginische Schlangenwurzel (*G.*), Slangenwortel (*Dutch*), Slangrod (*Danish*), Ormrot (*Swed.*), Serpentaria de Virginia (*I. S. Port.*).

This plant is a native of North America, from Pennsylvania to Florida; flowering in May and June, and ripening its seeds in September. The root is perennial, consisting of bundles of fibres, of a yellow-ochre colour, which changes to brown on drying, attached to a contorted horizontal trunk; from which several stems rise about ten inches in height, slender crooked, and jointed; supporting on long footstalks at each knot, thin, cordate, entire, pointed, trinerved leaves, of a yellowish green colour. The flowers proceed from the joints near the root, and stand upon long sheathed articulated peduncles, which bend down and almost bury the flowers beneath the decayed leaves near the roots. There is no calyx; the corolla is of a brownish purple colour, globular at the base, contracted and bent in the middle, and terminating in a triangular lip. The anthers are sessile, attached to the under-side

[1] The Αριστολοκια Dioscoridis gives name to the genus; but is not the officinal plant, which was introduced only since the settlement of Europeans in America.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0202-3

of the stigma, which is roundish, divided into six parts, and almost sessile, rising from an oblong, angular, hairy, inferior germen. The seeds are flat, and contained in a six-celled hexagonal capsule.

Dried serpentaria root is imported into this country in bales, each containing from two to five hundred weight. It is frequently mixed with the roots of Collinsonia *præcox*.

Qualities. — The dried root has an aromatic odour, not unlike that of valerian; and a sharp, warm, bitter, pungent taste, resembling in some degree that of camphor. Water extracts all the sensible qualities of the root, affording a yellowish brown infusion, which is not altered by sulphate of iron or zinc, nitrate of silver, oxymuriate of mercury, tartarized antimony, the mineral acids, and the alkalies, nor is it precipitated by gelatine or tannin. The superacetate of lead throws down a floculent precipitate, which is not soluble in acetic acid, shewing the presence of mucus. With alcohol, it affords a bright greenish tincture, which is rendered turbid by the addition of water. The active principles of Serpentaria, therefore, appear to reside in a bitter resin, and an essential oil.

Medical properties and uses. — Serpentaria root is a stimulating diaphoretic and tonic. It is beneficially employed in typhoid and putrid fevers, whether idiopathic, or accompanying the exanthemata, to excite diaphoresis, and support the powers of the system; and is found frequently to increase the efficacy of Cinchona in removing protracted intermittents. It is also an excellent remedy in dyspepsia, particularly when the skin is dry and parched; and is sometimes used as a gargle in putrid sore throat. On account of its stimulant properties, it is contraindicated in the inflammatory diathesis: and, previous to its exhibition, the bowels should be well evacuated.

It may be given in substance, or in infusion made by macerating ℥j. of the bruised root in f ℥xij. of boiling water, in a covered vessel for two hours, and straining. Decoction is a bad form of preparation of Serpentaria, as the boiling dissipates the essential oil, on which the virtues of the remedy chiefly depend. The dose of the powdered root is grs. x. or grs. xx., increased to ʒss.; that of the infusion f ℥jss. to f ℥ij. given every fourth hour.

Officinal preparations. *Tinctura Serpentariæ*, L. E. D. *Tinctura Cinchonæ composita*, L. D. *Electuarium opiatum*. E.

ARMORACIÆ RADIX. Vide *Cochlearia Armoracia*.

ARNICA. *Spec. Plant. Willd.* iii. 2106.

Cl. 19. *Ord.* 2. Syngenesia Superflua. *Nat. ord.* Compositæ Discoideæ, *Linn.* Corymbiferæ, *Juss.*

G. 1491. *Recep.* naked. *Seed-down* simple. *Cal.* with equal leaflets. *Corol.* of the ray have more frequently five filaments without anthers.

Species 1. A. *Montana*, Mountain Arnica. *Med. Bot. 2d edit.* 41. *t.* 17. *Flor. Dan. t.* 728. *Nuttall. Gen. Aus.* ii. p. 164.

Officinal. ARNICÆ MONTANÆ FLORES ET RADIX, *Edin.* ARNICA; FLORES, RADIX, *Dub.* The flowers and root of Arnica.

Syn. Arnique (*F.*), Arnika, Wohleverleih, Falkraut (*G.*), Valkruid (*Belg.*), Wolverley (*Dan.*), Häst sibler, St. Hansblomster (*Swed.*), Arnica (*I.*).

This species of Arnica is a native of the northern parts of the continents of Europe, and America, and of Siberia; flowering in July. It is also found on the Pyrennees, and is cultivated in our gardens.[1] The root is perennial, brown, woody, præmorse, with bundles of long fibres attached to it: the stem, which rises about a foot in height, is obscurely angular, striated, rough, hairy, and terminated by two or three upright peduncles, each bearing one flower. The radical leaves are ovate, entire, ciliated, and more obtuse than those of the stem, which are in opposite pairs, and lance-shaped. The flowers are of a deep copper-yellow colour, tinged with brown; the calyx is a dirty green, composed of fifteen or sixteen lancet-shaped hairy scales, with purple points: the ray consists of about fourteen ligulate flowers, twice as long as the calyx, striated, three-toothed, and hairy at the base; the disc of tubular florets, with a five-lobed margin. The seeds are oblong, striated, hairy, and crowned with a russet-coloured down.

The herbaceous part of the dried herb, which is used equally with the flowers and root, seems as if covered with a hoary powder.

Qualities. — The dried plant has a pleasant, weak, aromatic odour, and excites sneezing. The taste of the *leaves* and *flowers* is slightly aromatic, bitter, and pungent; that of the root, bitter and acrid. The leaves and flowers, macerated in boiling water, yield an olive-brown infusion, which has an odour not unlike that of senna, and a bitter, hot taste. It reddens tincture of litmus; but does not precipitate glue, nor alter solutions of tartarized antimony and of oxymuriate of mercury. With sulphate of iron and of zinc, it strikes a deep green colour, and gives dark precipitates. Superacetate of lead coagulates it. The mineral acids render it muddy, and of a dirty white colour, occasioning brown precipitates; but the alkalies only deepen its proper colour. Both alcohol and sulphuric ether take up from the flowers and leaves a resinous matter, which can be separated from the alcohol by water, and

[1] It was introduced by Mr. P. Miller in 1759.

from the ether by evaporation. Hence we may conclude, that Arnica contains a peculiar acid,[1] resin, a nauseous bitter matter, tannin, and mucus; and that sulphates of iron and of zinc, superacetate of lead, and the mineral acids, are incompatible in prescriptions with infusions of its leaves and flowers.

Medical properties and uses. — The *leaves* and *flowers* of Arnica are narcotic, stimulant, and diaphoretic; and in large doses, emetic and cathartic: the *root* is tonic and aromatic. The former have been used with advantage in paralytic affections, amaurosis, gout, rheumatism, and chlorosis. They have been extolled also in convulsive diseases, diarrhœa, and dysentery; but in the latter, their stimulant properties prove often hurtful. In paralysis, their good effects are generally preceded by a pricking sensation in the affected part; but in general they do not produce any sensible operation, unless when exhibited in too large doses: in which case they produce great anxiety, pain, vomiting, and the other deleterious effects of powerful narcotics. The *root* has been much extolled in Germany, as a succedaneum for Cinchona in intermittents, putrid fevers, and gangrene; particularly by Dr. Collin of Pazman; but in the hands of British practitioners it has not deserved the high encomiums which he has bestowed on it in these cases. It is regarded by the French practitioners as an excellent tonic in paralysis.[2]

Externally the powdered leaves may be used as an errhine.[3]

Arnica may be exhibited in substance; or in an infusion, made by macerating ʒjss. of the leaves and flowers, or ℈ij. of the bruised root, in fʒxij. of boiling water, and straining through linen. The infusion soon ferments. A dose of the powder is from grs. v. to grs. x.; that of the infusion, fʒjss. twice or thrice a day.

ARSENICUM[4], Arsenic.

Syn. Arsenic (*F.*), Arsenick (*G.*), Arsenico (*I.*), Arsénico (*S.*).

This metal is found in most parts of the world, accompanying other metals, and occasionally uncombined, forming distinct and peculiar veins. The following are the states in which arsenic is found: —

---

[1] Bouillon la Grange thinks it is the Gallic acid.

[2] Vide *Nouv. Elemens de Therapeutique*, par I. L. Alibert, 2d ed. vol. i. p. 141.

[3] The Savoyards, and the inhabitants of the Vosgeses, both snuff and smoke the leaves; and thence the plant is known on the Continent by the name of *Tabac de Savoyards et de Vosges.*

[4] From αρσενικον, Dioscoridis, which, however, is not the metal, but realgar, one of the species of the sulphuret; σανδαραχη of the other Greeks.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0205-1

A. In its metallic state:
i. Alloyed with iron, or silver, or gold. *Sp.* 1. *Native arsenic.*
B. United with sulphur and iron.
ii. sulphurets. 2. *Arsenical pyrites.*
3. *Orpiment.* Var. *a.* Realgar.
b. Yellow orpiment.
C. United with oxygen:
iii. oxide. 4. *Native oxide.*
D. Acidified; and
iv. Combined with lime. 5. *Arseniate of lime. Pharmacolite.*
v. ——— copper. 6. ——— *copper.*
Var. *a.* Foliated,
b. Lenticular,
c. Oliven ore.
vi. ——— iron. 7. ——— *iron. Cube ore.*
vii. Combined with lead. 8. *Arseniate of lead.*
viii. ——— cobalt. 9. ——— *cobalt. Red cobalt ore.*
Var. *a.* Cobalt crust.
b. ——— bloom.

As metallic arsenic is not used in the arts, it is not extracted from its ores, but is prepared for the purposes of experiment or of curiosity from the white oxide, which is commonly procured in roasting the arseniate of cobalt. It is necessary, however, to be acquainted with the appearances and properties of metallic arsenic, as one mode of ascertaining whether the white oxide has been used as a poison, in cases of suspected death, is to reduce the oxide.

Its colour is bluish gray, something like that of steel, with much brilliancy. It is quickly tarnished by exposure to the air, becomes black, and falls into powder. It is extremely brittle, and pulverulent. Its specific gravity is 5·763. It volatilizes at a heat of 356° Fahrenheit, in dense white fumes, which have the odour of garlic, although the solid metal is inodorous. In its metallic state, Arsenic exerts no action on the animal system; but when oxydized it is a virulent poison.

Officinal. ARSENICUM ALBUM, *Lond.* OXIDUM ARSENICI, *Edin.* ARSENICUM (*Oxydum album*), *Dub.* White Arsenic.

Syn. Arsenic oxydé natif (*F.*), Naturlicoer Arsenickhalk (*G.*), Arsenik (*Dan. Swed. Polish*), Muschjak (*Russian*), Arsenico iixneo (*I.*), Arsenico Turabulhalik (*Arab.*), Samuel-k'har (*H.*), Sanc'hya (*San.*), Vallay Paskanum (*Tam.*), Sumulfar (*Pers.*), Wrangon (*Malay.*).

The greater part of the white oxide of Arsenic of commerce is obtained in Bohemia and Saxony, in roasting the cobalt ores, in making zaffre, and sometimes by sublimation from arsenical pyrites. The roasting is performed in furnaces with long flues, in which the impure oxide is condensed, and this is purified by sublimation in the following method. Large square boxes of cast iron, furnished with conical heads, which

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0206-6

are closely luted to them with clay, are disposed in a brick area, heated by the flues of two furnaces placed a little beneath them. When these boxes are red-hot, the impure arsenic, by fifteen pounds at a time, is put into them, where it melts, and soon sublimes in the conical head. Successive additions are thus submitted to the action of heat, till about 150 pounds have been used to each vessel; and then the apparatus is allowed to cool. The conical head is now separated from the box, and carried with its contents into another place, where the workmen break off with hammers the sublimed oxide, separating the impurities for a second operation.[1]

The oxide, or *arsenious acid*, thus obtained is a dense, semi-transparent, solid cake; which becomes opaque, of a snowy whiteness, and pulverulent, when exposed to the air. It is met with in both these forms in the shops; and often is sold in powder, in which state it is sometimes adulterated with white sand, chalk, and gypsum; but the fraud is easily detected by heating a small portion of the suspected powder; by which the oxide is entirely dissipated, and the impurities are left behind.

The greater quantity of the oxide of arsenic used in this country is brought from Germany, in casks, each containing from two to five hundred weight.

Qualities. — White oxide of arsenic is inodorous; has an acrid taste, leaving on the tongue a sweetish impression; and is highly corrosive.[2] When pure, if it has not been freely exposed to the action of the air, it is in semi-transparent, colourless, shining masses, which break with a conchoidal fracture. It is soluble in 400 parts of water at 60°, and in 13 parts of boiling water; and the latter solution, on cooling, retains three parts of the white oxide for every 100 of water, and deposits the remainder in tetrahedrous crystals.[3] Both solutions redden infusion of litmus, and combine with the alkalies. It is soluble also in solution of pure potass, in alcohol and in oils. When heated in the open air, this oxide is volatilized in a temperature of about 383° Fahr., and the vapour has no odour: but if it be heated in contact with any substance, which has a strong affinity for oxygen, the vapours have an alliaceous colour, owing to the partial reduction of the oxide.[4] The

---

1 *Journal de Physique*, tom. i. p. 44.

2 The majority of Chemists now regard it as an acid.

3 Klaproth, *Schweigger's Journal*, vol. vi. p. 932; and *London Med. Repository*, vol. ii. p. 250.

4 The smelters of copper in Cornwall and Wales, although much exposed to the vapours of arsenic, yet suffer very little from them; but they are sometimes attacked with cancer in the scrotum. Dr. Paris (*Pharmacologia*) remarks, that they rely upon oil being an antidote; and are consequently supplied with it by their employers.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0207-2

specific gravity of the oxide in its ordinary state is 3·706, that of the glass 3·699. According to the average of the experiments by different chemists, 100 parts of the oxide consist of 74·6 of arsenic, and 25·4 of oxygen.[1] On the simple watery solution of the oxide, no change is produced by a solution of sulphate of iron, of oxymuriate of mercury, tartarized antimony, the mineral acids, or the alkalies: but nitrate of silver throws down a yellowish precipitate, which gradually passes to a brown colour; and a white precipitate is produced by superacetate of lead. Lime water also precipitates it white; sulphurets of the alkalies, pale yellow; and sulphuretted hydrogen gas, golden yellow.

Medical properties and uses. — Although White Oxide of Arsenic is the most virulent of the mineral poisons, yet when properly administered, it is a medicine of great efficacy; and is employed internally as a tonic, and externally as an escharotic. It had been long used as an internal empirical remedy in cancer, and some cutaneous affections, both in Europe and the East Indies; and for the cure of intermittents in Hungary; and in Lincolnshire under the name of "the ague drop:" but its effects were not clearly understood, nor the proper mode of administering it known, till Dr. Fowler of Stafford published his Observations on its use in the cure of remitting fevers and periodic head-aches.[2] Since that time the authority of many respectable practitioners has been brought forward in confirmation of its efficacy in these diseases; and in lepra, chronic rheumatism, intermittent hemicrania or *megrim*, scirrhus, and some local painful affections "of the ends of the bones, cartilages, or ligaments, or of all three together." It has also been used in dropsy, hydrophobia, syphilis, visceral and glandular obstructions, and in many other diseases, in which, however, its efficacy is by no means established.[3] In the East Indies the native physicians employ arsenic (*sanc'hya*) made into pills with six parts of black pepper, for the cure of confirmed lues (*Persian fire*), and a species of elephantiasis (*Judham*).[4] It is also used in cases of the bite of the hooded snake, *cobra del capello*.

The internal use of white oxide of arsenic is contraindicated

---

[1] Proust, Davy, and Dr. Thomson's proportions are, arsenic 100 × 34·930 oxygen. *Annals of Phil.* iv. p. 176.

[2] It is a curious fact that previous to the introduction of copper-works in Cornwall, agues were very frequent; but since that period the disease is extremely rare. "I have heard it," says Dr. Paris (*Pharmacologia,*) "remarked by the men in the works, that the smoke kills all fevers." Is this owing to the arsenical fumes?

[3] For a list of these diseases see a paper by Mr. Hill of Chester. *Edinburgh Med. Journal,* v. 19. 312. and vi. 55.

[4] Asiatick Researches, 8vo. 5th edit. vol. ii. p. 158.

in all cases attended with strong arterial action; and where there are any pulmonary symptoms: and should a cough even intervene during its use, it should be instantly discontinued. When it is exhibited in proper cases, and with necessary precaution, the effects it produces must be carefully observed: "the feeling of swelling and stiffness of the palpebræ and face, heat, soreness and itching of the tarsi, or tenderness of the mouth,[1]" are indications that the dose of the remedy has been carried to its full extent, and should then be diminished. If erythema or salivation appear, the use of it must be suspended: and it should be altogether abandoned if pain of the stomach, or nausea, vomiting, head-ache, vertigo, or cough be induced.

The white oxide is exhibited either in substance or in solution. The best mode of giving it in substance is in the form of pills, formed by rubbing one grain of the oxide with ten grains of sugar, and then beating the mixture with a sufficient quantity of crumb of bread, so as to form ten moderately-sized pills; one of which is a dose. The solution, however, is more manageable. The most common form of it is that of the London College; (vide *Liquor arsenicalis*), but the simple solution in distilled water, in the proportion of four grains to a pint, is also given according to M. Le Febvre's method. A table spoonful of the solution, mixed with a little syrup of poppies and half a pint of milk, is directed to be taken in a morning fasting, and the frequency of the dose increased until six spoonsful be daily taken.

As an external application the oxide of arsenic has been long employed in cases of cancer: and has certainly done more to improve the ulceration, and give it a disposition to contract and heal, than any other external application. It has been sprinkled, in the form of powder, upon the sores; but the most violent pain follows this mode of applying it; and in some instances, probably from its absorption, the general system has been dangerously affected. The more usual mode of using it is in the form of a lotion, composed of eight grains of the oxide, and the same quantity of subcarbonate of potass, dissolved in four fluid ounces of water; or as an ointment, formed by rubbing together one drachm of the oxide and twelve drachms of spermaceti ointment. These applications produce little pain and irritation, cause the diseased parts to slough off, and amend the fetid discharge; but, although, to a certain extent they produce the most beneficial effects, yet, the instances in which a cure has been effected are very rare.

---

[1] Dr. Kellie, *Edin. Med. Journ.*

The white oxide of arsenic is not unfrequently the cause of death; from accidents occurring to those artists who use it in their manipulations; as glass-makers, dyers, and workers in gold: or from ignorance of the proper dose of its preparations when medicinally used; or from the employment of it as a poison. The symptoms which occur are those of inflammation of the stomach, incessant vomiting, purging, and pain of the stomach[1]; constriction of the throat, an increased flow of saliva and great heat of the mouth; rapid sinking of the pulse, which is at first full, hard and frequent, cold sweats, convulsions, and death: but if the quantity be not sufficient to produce speedy dissolution, the first-mentioned symptoms are succeeded by paralysis, hectic, and other symptoms of extreme debility.[2] When death takes place, symptoms of putridity are said soon to present themselves; but this is not always the case, although the body is often marked with livid stripes, and covered with enchymoses; and on dissection the stomach often, although not always, appears either abraded, or completely eroded in several parts; with appearances of inflammation extending through the whole abdominal viscera: but from M. Brodie's experiments there is great reason for supposing that death is less the consequence of inflammation than of a peculiar and immediate influence of the poison upon the nervous system. Particles of the arsenic are occasionally found adhering to the abraded parts of the villous coat of the stomach.

Various methods of counteracting the poison of arsenic have been recommended. Whatever antidote is adopted, the stomach should, in all cases, be immediately evacuated: and the best mode of doing this is by administering large draughts of tepid mucilaginous fluids. In order to render the Arsenic inert, solutions of the alkaline sulphurets, and vinegar, have been advised; but the experiments of Renault have demonstrated how little reliance is to be placed on these articles. Hahneman orders one pound of soap to be dissolved in four pounds of water, and a cupful taken, tepid, every three or four minutes; and as this is the antidote most readily procured, if lime-water or chalk and water cannot be at hand, it should always be the first employed. Lime-water proves useful by coating the particles of the arsenic with an arseniate of lime, which is insoluble, and consequently inert.[3] Dr. Yelloly,

---

[1] In a case detailed by Dr. Yelloly, no pain of the stomach, convulsions, nor delirium occurred, although it terminated fatally. *Edin. Med. and Surg. Journ.* v. 389.

[2] On this subject our readers will find much practical information in the *London Medical Repository*, vol. v. p. 97.

[3] See our experiments on this subject, in the *London Med. Repos.* vol. viii. 157.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0210-7 DFG

reasoning on the probability that the inflammation induced is often the cause of death, even after the stomach is freed from the whole of the poison, suggests the propriety of early blood-letting in these cases.[1] Opium, camphor, and ether may be employed to quiet the nervous irritability, and ammonia to stimulate the heart.

As medical men are often called upon in courts of law to establish the fact of White Oxide of Arsenic having been used as a poison, it is necessary to know the best tests by which it may be recognised. If on searching in the stomach, or among its vomited contents, any considerable quantity of the suspected poison be discovered, a little of it must be mixed with three times its weight of black flux, composed of one part of finely-powdered charcoal, and two parts of dry carbonate of potass; or, to a grain of the poison add half a grain of charcoal, and a grain of dried carbonate of potass. These must be put into a thin glass tube, about eight inches in length and 1-4th inch in diameter, hermetically closed at one end. The open extremity must then be slightly plugged with a piece of paper (taking care to clean the upper portion of the tube by means of a feather), and the tube kept for a quarter of an hour in a well-burnt coal fire; or the flame of a spirit-lamp: when, if the powder introduced into the tube contain Arsenic, metallic Arsenic will sublime and be found lining the inside of the tube with a brilliant crust. That it was Arsenic may be further proved by volatilizing a small portion of the reduced metal on a red-hot iron, and observing whether it present the garlic odour peculiar to the vapour of metallic Arsenic. The white oxide may also be detected in the following manner: Mix some of the suspected matter with the black flux; place the mixture between two pieces of polished copper; and after binding them tightly together with iron wire, place them in an ordinary fire: if Oxide of Arsenic be present, a white stain will be left on the surface of the copper, which is an alloy of metallic Arsenic and the copper.

When the poison is found in very small quantity only, let it be dissolved in two drachms of hot rain or distilled water, with three grains of subcarbonate of potass, or, what is to be preferred, the subcarbonate of ammonia; then add to this a warm solution of five grains of sulphate of copper, which will produce a lively grass-green precipitate if Arsenic be present, which, if heated in a test-tube with a little wax will sublime in the form of metallic Arsenic. When no powder is discovered in the stomach, its contents and the vomited matter

---

[1] *Edinburgh Med. and Surg. Journal*, v. 392.

must be washed with hot water, and filtered, carbonate of potass added to the filtered fluid, and then a warm solution of the sulphate of copper, as above described. Mr. Phillips, however, has shewn that if the sulphate contain any peroxide of iron, it will afford a green precipitate, although no Arsenic be present. To prevent this fallacy, he directs the potass to be added to the sulphate of copper first, and to a part of this the suspected solution, when the blue precipitate will become green, if arsenious acid be present. A still more delicate test than any of those already mentioned has been proposed by Mr. Hume[1]: one part of the suspected poison, and three parts of subcarbonate of potass, are to be dissolved in a sufficient quantity of rain or distilled water at 212°; and the surface of this solution slightly touched with a piece of nitrate of silver. If Oxide of Arsenic be present, a sulphur-yellow coloured precipitate will be seen falling rapidly from the point where the nitrate is applied. In our experiments we have found that the sixtieth part of a grain of the oxide is clearly discovered in two ounces of water by this test. This precipitate should afford, when heated with wax, indications of metallic Arsenic, as in the former case. All these experiments should be performed in the day-time, and the precipitated fluid examined by reflected, not transmitted light.[2] — Objections have been raised against this test, because the presence of the alkaline phosphates in the suspected fluid would produce precipitates of a similar colour with nitrate of silver; and if muriate of soda, or of any other alkali, were present, the test could not be employed, on account of the copious precipitates which these produce with the nitrate. The first objection is obviated by making the trial on paper, as recommended by Dr. Paris: Drop a little of the suspected fluid on writing-paper, and draw several times over it a stick of lunar caustic; which, if arsenic be present, will leave a streak of colour, that becomes a very bright queen's yellow, if brushed with some liquid ammonia, which continues unchanged; but if no arsenic be present, and only alkaline phosphates, the streak will be uniform, and in a few minutes fade into a sad green, and gradually become black. Dr. Marcet has shown us how to obviate the difficulty with regard to the muriates, by adding to the suspected fluid dilute nitric acid, and then to apply the nitrate of silver to its surface until no more precipitation is produced; by which means the whole of the muriatic acid is removed: and as the arseniate of silver re-

[1] *Philosophical Mag.* May 1809.
[2] Bostock, *Edin. Med. and Surg. Journ.* v. 170.

mains in solution, it is rendered evident by a yellow precipitate being instantly formed on the addition of ammonia. — But the great difficulty is to detect the presence of the poison in the stomach. Besides examining the contents of this viscus by filtration and dilution, if no Arsenic can be detected, Orfila advises the viscus to be cut in pieces and then separately examined[1], by boiling them in water and testing the decoction. In this case, the best test is a current of sulphuretted hydrogen gas passed through the filtered decoction, which will diffuse a fine yellow colour in the fluid if any Arsenic be present. If no colour appear, which may occur, although Arsenic be in the decoction, owing to the presence of phosphate of soda, the addition of very dilute pure nitric acid will produce it.[2]

When any of the vehicle in which the poison has been exhibited can be procured, more satisfactory results will be obtained from the examination of it, than from that of the contents of the stomach. If a white powder be found in it, the most satisfactory proof is that of reducing this to the metallic form, as already described; but, if the whole of the arsenic be dissolved, it must then be tested by different reagents. One of the simplest methods which I have tried is the following. Into the suspected solution stir a moderate quantity of charcoal powder; allow it to settle; then pour off the clear supernatant fluid, or filter the mixture; and when the powder which remains on the filter is dry, sprinkle some of it on a red hot poker: if the solution contain arsenic, the odour of garlic will be rendered sensible. This effect becomes more obvious, if a few grains of dried subcarbonate of potass be added to the dried charcoal powder.[3] The results from no

---

[1] *Traité des Poisons*, &c. par M. P. Orfila, vol. ii. p. 169.

[2] Vide *An Essay on Chemical Analysis*, &c. By J. G. Children. Lond. 8vo. 1817. p. 393.

[3] To ascertain the delicacy of this test, the following experiments were made.— Ex. 1. Half a drachm of white oxide of arsenic being boiled in two ounces of water, and the fluid filtered when cold, it was found to retain twenty-eight grains of the white oxide in solution. Exp. 2. One drachm of this solution being mixed with two ounces of water in a cylindrical glass vessel, so as to form a solution which contained about one part of the oxide for 592 parts of water, a scruple of finely-powdered charcoal was added, and the mixture being well agitated with a glass rod, and allowed to settle, was filtered. The powder, when dry, on being thrown upon a red hot shovel, emitted a *very faint* odour of garlic. Exp. 3. The same as the former, except that two drachms of the solution were employed, making the proportion of the white oxide to the water in the diluted solution, as 1 to 286, the garlic odour was *very perceptible*. Exp. 4. Four drachms of the arsenical solution being employed, making the proportion of the white oxide to that of the water in the diluted solution as 1 to about 143, the garlic odour was *extremely strong*. From these experiments it is evident that this test will detect arsenic in any solution strong enough to act as a poison.

single test should, however, be relied upon: and as a knowledge of the appearances produced by the four principal reagents usually employed for the detection of arsenic, must greatly facilitate such an examination, we have constructed the following table from actual experiments; comparing the results obtained from solutions of arsenic with those from solutions of corrosive sublimate, tartarised antimony, and muriate of barytes, which are the only substances likely to be mistaken for arsenic. It is necessary to remark, that the broth employed was made with beef, and contained a moderate proportion of carrots, turnips, and onions, and that the coffee and the tea contained milk and sugar in the usual proportions employed in these beverages.

COMPARATIVE TABLE of the Precipitates obtained from Solutions of White Arsenic, of Oxymuriate of Mercury, of Tartarized Antimony, and of Muriate of Barytes, with different Tests.

1st TEST.—WATER SATURATED WITH SULPHURETTED HYDROGEN GAS.				
Solvents.	Precipitates from Solutions of WHITE ARSENIC.	Precipitates from Solutions of CORROSIVE SUBLIMATE.	Precipitates from Solutions of TARTAR EMETIC.	Precipitates from Solutions of MURIATE of BARYTES.
Water - - - -	Bright golden yellow, which was deepened by the addition of a few drops of strong acetic acid.[1]	Yellow at the instant of its formation, but soon becoming blackish. On shaking the tube it changes to a dirty white.	Orange, curdy, partly suspended, partly thrown down. Ultimately bright orange.	Heavy, and of a dirty, dark brown colour.
Broth - - - -	Scarcely any at first, but on adding a few drops of strong acetic acid, a pale yellow.	Whitish yellow at first, quickly changing to mixed clots of yellow, black and white.	Pale orange at first, soon changing to a deeper bright orange.	Dirty pale brown, heavy.
Milk - - - - -	Little change, but on the addition of a drop of strong acetic acid, a straw-coloured precipitate.	Light ochre, requiring for its formation a large quantity of the test.	Golden yellow, with a shade of orange.	Dirty nankeen, with a shade of brown.
Tea - - - - -	At first, very pale yellow; after some time, a pale greenish yellow. The precipitate was curdy.	Brownish white and yellow, mixed.	Deep orange, curdy, slowly formed: the supernatant fluid yellow.	Dirty light brown, deepening as it fell.
Madeira Wine	Turbid, pale yellow, the colour of the wine destroyed.	Muddy, gradually displaying small floating black flocculi.	Pale orange, long suspended	The muriate mixed with white wine is milky.—Not tested.
Port Wine -	Turbid, paler yellow: the precipitate in both is very slowly formed.	Nearly as in the white wines, like clouds through the purple of the wine.	Dark, dirty brown.	Pale brown, heavy.
Coffee - - - -	A deep golden yellow.	Brownish black.	Deep orange brown.	Not tried.
Gruel - - - -	Pale yellow suspended.	Light brown, slowly formed.	Pale orange.	Not tried.

[1] This precipitate, dried upon a filter, and heated with some caustic potash in a slender test tube, is decomposed in a few seconds, forming a sulphuret of potash, whilst the arsenic is volatilized in its metallic form, and adheres to the sides of the tube. (*Orfila.*)

Universitäts- und Landesbibliothek Düsseldorf
urn:nbn:de:hbz:061:2-135391-p0215-6

II. HYDRO-SUPHURET OF POTASH.

Solvents.	Precipitates from Solutions of White Arsenic.	Precipitates from Solutions of Corrosive Sublimate.	Precipitates from Solutions of Tartar Emetic.	Precipitates from Solutions of Muriate of Barytes.
Water - - - -	White, with the faintest tint of sulphur yellow, when a large quantity of the test was used.[1]	Black, mottled with yellow.	Bright orange.	Deep olive green.
Broth - - - -	Pale, but bright, sulphur yellow.	Clotted, heavy, black, mottled with gray.	Dull orange, heavy.	Lt. brown, partially suspended
Milk - - - -	Bright golden yellow.	Black, clotted.	Orange.	Brown, greenish when the mixture was shaken.
Tea - - - - -	A beautiful yellow.	Brownish black.	Reddish orange, flocculent.	Not tried.
Coffee - - - -	A deep golden yellow.[2]	Nearly black.	Deep brownish orange.	Not tried.
Madeira Wine	Sulphur yellow.	Dirty white, or slate colour.	Beautiful bright orange.	Vide 1st Table.
Port Wine -	Fawn colour.	Slate colour, with violet supernatant liquor.[3]	Dark brown, with a tinge of orange.	Violet, heavy.
Gruel - - -	Bright queen's yellow.	Black dense clots.[4]	Orange-clotted.	Dusky yellowish green.

III. SOLUTION OF SULPHATE OF COPPER, with the addition of Ammonia in excess.

Water - - - -	Beautiful grass green. It completely disappeared on the addition of a few drops of strong acetic acid.[5]	White thick, and heavy.	Pale whitish blue, very little thrown down.	Copious whitish blue.
Broth - - - -	Beautiful pale green, suspended.[6]	White, curdy, partly suspended, partly thrown down.	Pale whitish blue, with a tint of green.	Opaque, glaucous.
Milk - - - - -	Pale greyish green.	Blueish white, curdy.	Whitish blue.	Curdy white, with a tinge of blue.
Tea - - - - -	Obscure olive, but scarcely a precipitate.	Dirty yellowish white, curdy.	Muddy, pale blueish green.	Greyish, heavy, supernatant fluid, yellowish green.
Coffee - - - -	Dark grass green.[7]	Dirty white.	Dirty blueish green.	Not tried.
Madeira Wine	Grevish, with a slight tinge of green.	Heavy clotted white, with a tint of green.	Æ inous bue.	Vide 1st Table.
Port Wine -	Clotted, heavy, dark greenish grey.	Heavy, clotted, blueish grey.	Heavy, dirty slate blue.	Dirty violaceous grey.
Gruel - - - -	Beautiful grass green.	Pale blueish white.	Pale blueish green.	Pale blueish green.

IV. NITRATE OF SILVER; a drop or two of Ammonia being previously added to the solutions.

Solvents.	Precipitates from Solutions of WHITE ARSENIC.	Precipitates from Solutions of CORROSIVE SUBLIMATE.	Precipitates from Solutions of TARTAR EMETIC.	Precipitates from Solutions of MURIATE of BARYTES.
Water - - -	Copious bright sulphur yellow, falling in flocculi from the point of contact.[8]	Dull yellowish white, clotted, changing to dirty white.	Pale brown.	White, heavy; soon blackening.
Broth - - -	White, (owing to the muriate of soda) but yellow when treated with nitric acid.	White, copious.	Brownish, mixed with much muriate of silver.	White, dense, curdy.
Milk - - - -	White, with a tint of yellow.	Dirty white.	Very pale, scarcely visible brown.	Not tried.
Tea - - - -	Yellowish white, which soon blackens.	Dirty white.	Dirty brown.	Not tried.
Coffee - - -	Yellow, remaining unchanged.	White, changing to black.	Not tried.	Not tried.
Madeira wine	Pale sulphur yellow.	Dirty white, changing to black.	White.	Vide 1st Table.
Port Wine	White, becoming brown on exposure to the light.	Ibid.	Dirty white.	Heavy, dirty white.
Gruel - - -	Yellowish.	Dense, dirty white clots.	Not tried.	Dense, clotted, white.

[1] The hydrosulphuret, added to a solution of the phosphates, throws down a greenish yellow precipitate, the supernatant fluid being yellow and turbid.

[2] Lime water, also, added to coffee containing arsenic, throws down a yellow precipitate; although it precipitates the watery solution of arsenic white. (*Orfila.*)

[3] Corrosive sublimate cannot be exhibited in port wine with an intention to commit murder, (except by a self-murderer,) as it changes the colour of the wine to pale violet.

[4] All the precipitates by the sulphuret, when dried, and heated in a tube with iron filings, afford metallic mercury, which is volatilized, and shews itself in globules upon the sides of the tube.

[5] This test is capable of detecting arsenic in a solution containing $\frac{1}{110000}$ of its weight. (*Orfila.*)

[6] It has been suggested, that onions boiled in broth, or eaten so as to impregnate with their peculiar qualities the contents of the stomach, might produce the same effects on sulphate of copper, as if arsenic were present; but although a green colour is produced, yet no precipitate falls as when arsenic is present.

[7] Dr. Porter, of South Carolina, says that sulp. of copper with ammonia produced the same coloured precipitate in coffee, which contains no arsenic? *American Journ. of Science*, vol. iii. p. 354.

[8] A similar precipitate is formed by nitrate of silver, in a solution of any of the phosphates; and with chromate of potass; but the fact of the precipitate being occasioned by arsenic, is easily ascertained by testing a fresh portion of the solution with lime water. If it contain arsenic, a copious white precipitate will be thrown down; if a phosphate only, there is scarcely any change, or at the most a translucent flocculent precipitate, which remains long suspended. A new method of employing this test was suggested by Dr. Paris. It is to put upon a piece of clean white paper a broad streak of the suspected fluid; and then run lightly over it a stick of lunar caustic. This is an excellent test, when modified as I have elsewhere (*London Med. Repository*, vol. viii. p. 178.) suggested, by brushing the streak lightly over with liquid ammonia, immediately after the application of the caustic. If arsenic be present, a bright queen's yellow is instantly produced, which remains permanent for nearly an hour: but, when the lunar caustic produces a bright yellow before the ammonia is applied, we may suspect the presence of some phosphate rather than arsenic.

Universitäts- und Landesbibliothek Düsseldorf
urn:nbn:de:hbz:061:2-135391-p0217-8

ARTEMISIA. *Spec. Plant Willd.* iii. 1815.

Cl. 19. *Ord.* 2. Syngenesia Superflua. *Nat. ord.* Compositæ Nucamentaceæ, *Linn.* Corymbiferæ, *Juss.*

G. 1473. *Receptacle* subvillous or almost naked. *Seed-down* none. *Cal.* imbricate, with roundish converging scales. *Cor.* without rays.

* *Shrubby.*

Species 8. A. *Abrotanum*, Southernwood. *Med. Bot. 2d edit.* 52. *t.* 21.

*** *Herbaceous, with the stem somewhat branching, the flowers in panicles, the leaves compound.*

Species 26. A. *santonica*, Tartarian Southernwood. *Med. Bot. 2d edit.* 61. *t.* 23.

——— 42. A. *maritima.* Sea Wormwood. *Med. Bot. 2d edit.* 60. *edit.* 24. *Smith Flora Brit.* 864.

——— 63. A. *Absinthium.* Common Wormwood. *Med. Bot. 2d edit.* 54. *t.* 22. *Smith's Flora Brit.* 864.

1. ARTEMISIA ABROTANUM.[1]

Officinal. ABROTANUM; FOLIA, *Dub.* Southernwood leaves.

Syn. Citronelle Auronne (*F.*), Eberaute, Stabwurz (*G.*), Averoon (*Dutch*), Abröd (*Dan.*), Abrodd (*Swed.*), Bozedrzwkko (*Polish*), Abrotano (*I.*), Limbriguera (*S.*).

This a perennial undershrub, a native of the south of Europe, Siberia, China, and Cochinchina. In England, where it is abundantly cultivated, it resists the winter, but very rarely flowers. It rises about three feet in height, with a shrubby branching stem covered with smooth brown bark. The leaves are alternate on long footstalks, irregularly doubly pinnate; the pinnæ linear, concave on the upper surface, convex below, tomentose, and of a pale green colour. The flowers are compound, of a greenish yellow colour, and produced on one-flowered peduncles in axillary spikes at the extremities of the branches. The seeds are naked and solitary.

Qualities. — Southernwood has a strong fragrant odour; and a warm, bitter nauseous taste. Both water and alcohol extract these qualities; but the alcohol more perfectly than the water, the infusion having scarcely any bitterness. The tincture is of a beautiful green colour, the infusion of a pale olive. The latter strikes the black with sulphate of iron and precipitates acetate of lead. A small quantity of essential oil is procured by distillation; on which, and a bitter resinous matter, the qualities of the plant appear to depend.

Medical properties and uses. — Southernwood is said to pos-

---

[1] Ἀβροτόνον, Dioscoridis, ab ἄβροτον inhumanum; vel ἄβρωτον cibo inutile. Vide *Alston's Mat. Med.* ii. 65.

[2] Dr. Burdach of Wiebal, near Serase, and Professor C. G. Huffeland have used the root of Artemisia *vulgaris*, Mugwort, taken up in October, and administered in powder in doses, of from gr. l. to gr. lxx., with great success in epilepsy. *Journ. der Pract. Heilkunde.* 1824.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0218-4

sess tonic, diaphoretic, anthelmintic, and deobstruent properties. It was formerly much used in debilities of the stomach, chlorosis, and jaundice. Externally it has been employed as a discutient and anodyne fomentation for inflammations, pains, tumours and gangrenous ulcers. But it is very rarely used in modern practice. The dose may be from ℈j. to ʒj. of the leaves in substance; or, of an infusion made with ʒvj of the leaves and fʒx of water, a cupful, taken twice or thrice a-day.

2. ARTEMISIA SANTONICA.

Officinal. ARTEMISIÆ SANTONICÆ CACUMINA, *Edin.* SANTONICUM[1]; CACUMINA, *Dub.* The tops of Tartarian Southernwood.

Syn. Sementine (*F.*), Tartarisches Beyfus (*G.*), Santonico (*I.*).

This species of artemisia is a native of Tartary and Persia; but it is cultivated in our gardens, flowering in September. The root is perennial; and the plant has the habits of indigenous field southernwood, but is erect. The stem is panicled, rising two feet in height, and rather hoary. The lower leaves are pinnate, much cut, linear, and hoary. The branches are wand-like, with alternate racemes, recurved, and having flowers all looking the same way. The flowers are solitary, and cylindrical. In the fruiting plant all the stems are erect, and lose their hoariness. The leaves on the branches are very small, linear, and undivided. The receptacle is naked.[2]

The *qualities* and *medical properties* of this plant are nearly the same as those of the former species of artemisia; and it may be used for the same purposes. The worm seeds (*semina Santonici*) of the former pharmacopœias, which were supposed to be the production of this plant, are now properly rejected, as their place can be well supplied with anthelmintics of more certainty.

3. ARTEMISIA MARITIMA.[3]

Officinal. ABSINTHIUM MARITIMUM; CACUMINA, *Dub.* The tops of Sea Wormwood.

Syn. Absinthe Maritime (*F.*), Seebeifuss (*G.*), Zeealsem (*Dutch*), Vild Cypress (*Danish*), Svenski marum (*Swed.*), Assenzio Maritimo (*I.*).

This is an indigenous, perennial plant, growing near the sea shores, and in salt marshes, flowering in August. The root is fibrous, and somewhat woody. The stems rise two or three feet in height. They are erect, leafy, furrowed, and hoary. The inferior leaves are pinnate, with three-cleft pinnæ; the upper ones variously divided; the highest simple, and the whole entire in the margin, downy on both sides. The flowers are ovate, of a brownish-yellow colour, in nodding racemes. The calyx is woolly on the outside, with a scaly margin; the receptacle is naked, and the ray florets are very few.

---

[1] Σαντονιον, Dioscoridis. [2] Willdenow, iii. 1827. [3] Σεριφιον, Dioscoridis.

Qualities. — The odour is slightly fragrant, and the taste bitter and weakly aromatic. Like the first described species, its activity seems to depend on a bitter resin and essential oil.

Medical properties and uses. — These are in every respect the same, in a diminished degree, as those of the next species. It is scarcely ever used.

4. ARTEMISIA ABSINTHIUM.[1]

Officinal. ABSINTHIUM, *Lond.* ARTEMISIÆ-ABSINTHII FOLIA, SUMMITATES, *Edin.* ABSINTHIUM VULGARE; FOLIA, CACUMINA. The leaves and flowering tops of Wormwood.

Syn. Absinthe commun (*F.*), Wormuth (*G.*), Alsem (*Dutch*), Malurt (*Danish*), Malert (*Swed.*), Piolun (*Polish*), Polin (*Russian*), Assenzio (*I.*), Artemisio axenjo (*S.*), Losna (*Portug.*).

Common wormwood is an indigenous perennial plant, growing in dry waste places, and flowering in August. The greater part, however, of that which is used for medicinal purposes is cultivated in the physical gardens.[2] The root is somewhat woody, and branched. The stems rise nearly erect to the height of two or three feet; are branching, angled, and furrowed, with the summits pannicled. The lower leaves are bipinnate; the upper pinnatifid or digitated; with oblong obtuse very entire segments. The racemes are erect, and the flowers pedicellated, nodding, hemispherical, and of a brownish-yellow colour. The florets of the disk are numerous, but those of the ray few: and the receptacle is covered with white silky hairs, shorter than the calyx.

Qualities. — The odour of common wormwood is strong, and although fragrant, yet to many persons it is very disagreeable: the taste is intensely bitter, slightly pungent, and nauseous. These qualities are given out both to water and alcohol: and a dark-green essential oil, on which the odour depends, is obtained by distillation with water. The watery infusion of the plant has a pale olive colour: sulphate of iron, and of zinc, slowly deepen it to a black; and superacetate of lead throws down a yellowish-green flocculent precipitate: but it is not affected by Tartarized Antimony. The active parts of the plant seem to be extractive, an essential oil which is not in the least bitter, and a small portion of resin. Kunsmuller[3] found in the residue of 12 ounces of the plant after infusion, besides other things, 59 grains of corbonate of lime.

Medical properties and uses. — Common wormwood is tonic, and anthelmintic; and, when externally applied, is said to be

---

[1] Ἀψινθιον, Dioscoridis.

[2] A good deal is cultivated at Mitcham in Surry, chiefly for the seed, which is sold to the rectifiers of British spirits at about 30s. per cwt. —*Stevenson's Survey*, p. 378.

[3] *Ann. de Chim.* vi. p. 35.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0220-3

discutient and antiseptic. It has been used with advantage in intermittents, gout, scurvy, and dropsy; and although modern practitioners will scarcely rely on its efficacy in these complaints, yet it is undoubtedly of some value as a stomachic in dispepsia and hypochondriacal affections. When it is desirable to free the remedy from its narcotic property, it should be given in decoction, as the boiling dissipates the essential oil on which this depends. The dose in substance is ℈j. to ℈ij. and of the infusion, made by macerating ʒvj. of the plant in fʒxij. of boiling water, fʒj. to fʒxij., which may be given three or four times a-day.[1]

Officinal preparations. *Extractum Absinthii*, D.

ARUM. *Spec. Plant. Willd.* iv. 477.

Cl. 21. *Ord.* 7. Moncœcia Polyandria. *Nat. ord.* Piperitæ, *Linn.* Aroideæ, *Juss.*

G. 1705. *Spathe* one-leafed, cowled. *Spadix* naked above, female below, stamineous in the middle.

* *Stemless with compound leaves.*

Sp. 17. A. *maculatum.*[2] Arum, or Cuckow-pint. *Med. Bot. 2d edit.* 728. *t.* 249. *Eng. Bot.* 1298. *Smith Flora Britan.* iii. 1024.

Officinal. Arum; RADIX RECENS. *Dub.* The recent root of Arrum.

Syn. Gouet (*F.*), Aronswurzel (*G.*), Arro manchado (*S.*), Iurro (*Port.*), Gwlakt kalfsvort (*Dutch*), Tydsk ingefaer (*Dan.*), Dansk Ingefarra (*Swed.*), Aronowa broda (*Polish*), Aro (*I.*).

This is a perennial indigenous plant, growing under hedges and on the sides of banks in many parts of Britain[3]; flowering in May, and ripening its berries in August. The root is tuberous, about the size of the first joint of the thumb, with many radical fibres issuing from every side. The leaves, which seldom exceed four in number, are radical, supported on grooved sheathing petioles about nine inches long: they are triangular and barbed, five inches in length, and two in breadth at the base, smooth, glistening, of a deep green colour above, and often sparsely spotted with dark brown or black blotches. The flower stem is a simple, erect scape, from eight to twelve inches high, and obscurely channelled. The spathe is erect, bellied, pointed above, of a pale green colour, sometimes spotted, withering, and covering the fruit till it is nearly ripe, when it drops. The spadix is enclosed in the sheath, is club shaped, obtuse, of a purple colour above, and whitish below; collared towards the middle with many sterile filaments; a little lower with numerous sessile anthers; and at the base with many roundish germens, crowned with sessile, simple stigmas. The berries are succulent, of a bright scarlet colour when fully ripe, and contain two or more hard seeds.

---

[1] Purl is an infusion of wormwood in ale.

[2] Ἄρον μέγα, Hippocratis.

[3] There is great abundance of it in the lanes near Ewell and Dorking in Surry.

For medical use the roots of arum should be dug up in autumn, after the leaves are completely decayed. They may be preserved fresh for nearly a year if buried in sand in a cool cellar.

Qualities.—The arum root is white, and inodorous. When chewed the taste is at first sweetish and soft, but it soon excites a burning, pricking sensation on the tongue and in the mouth, which continues many hours, and is attended with great thirst. Butter, milk, and oily fluids allay these unpleasant sensations. The sliced root applied to the skin, reddens, and excoriates or vesicates it. The acrimonious matter, however, can be washed off from the bruised root by water; is completely dissipated by drying; and abstracted by a mixture of water and alcohol by distillation, although the fluid receive no sensible impregnation; so that it may be regarded as a vegetable principle sui generis. The recent expressed juice reddens vegetable blues; and has been found to contain malate of lime.[1] The dried root is chiefly fecula, perfectly inert, and saponaceous; and is used in France as a cosmetic, under the name of Cypress powder.

Medical properties and uses.—Arum root in its recent state is stimulant, diaphoretic, and expectorant. It has been employed in cachetic, chlorotic, and rheumatic cases; and in humoral asthma. Bergius says, he found it a never-failing remedy for cephalæa sympathica, which resisted all the other means he employed. But the difficulty of procuring Arum root always in a state to be depended on, prevents it from becoming a remedy of general utility.

The dose of Arum, in substance, may be from grs. x. to ℈j, three or four times a day, combined with any thing which can sheath its acrimony, as mucilage, milk, or thick barley-water; or triturated with gum and water, so as to form an emulsion.

ASARUM. *Spec. Plant. Willd.* ii. 858.

Cl. 11. *Ord.* 1. Dodecandria Monogynia. *Nat. ord.* Sarmentaceæ, *Linn.* Aristolochiæ, *Juss.*

G. 925. *Calyx* three or four-cleft, placed on the germen. *Corolla* none. *Capsule* coriaceous, crowned.

Spec. 1. A. *Europæum.*[2] Asarabacca. *Med. Bot. 2d edit. t.* 66. *Eng. Bot. t.* 1083. *Smith. Flora Brit.* 509.

Officinal. ASARI FOLIA. *Lond. Edin.* ASARUM; FOLIA. *Dub.* Asarabacca leaves.

Syn. Asaret; Cabaret (*F.*), Hazelwurtzel (*G.*), Hazelwort (*Dutch*), Hasselurt (*Dan.*), Kopytnik (*Polish*), Asaro, la bacchera (*I.*), Asaro de Europa (*S.*), Haselört (*Swed.*), Asāroon (*Arab.*), Tuckir (*Hind.*), Mootriennjavia (*Tam.*).

---

[1] *Ann. de Chimie.* xxxv. 153.

[2] Ασαρον, Dioscoridis. The Arabic word *Asāroon* signifies *astringency.*

This is a perennial plant, the geographical limits of which extend from 60° to 37° N. latitude; and is consequently a native of several parts of England, particularly Lancashire and Westmoreland: growing in woods and shady places; and flowering in May. The root is creeping, fleshy, and fibrous. The stem short, round, simple, pubescent, generally bearing two leaves only, and one flower. The leaves are opposite, on footstalks three inches long, of a kidney shape, entire, somewhat hairy, and of a deep shining green colour. The flower is on a short terminal peduncle of an herbaceous colour on the outside, and dusky purple within; and is in some degree hid under the leaves: the calyx is bell-shaped, and three-cleft, with the points of the segments, which are erect, turned inwards: there is no corolla: the filaments are produced beyond the anthers into a hook or little horn; and the style is a cylindrical column crowned with a six-parted reddish stigma. The seeds are few, contained in a six-celled, inferior, coriaceous capsule, egg-shaped, and crowned with a persistent calyx.

As a great deal of the acrimony of Asarabacca is lost with keeping, the leaves should be used in as recent a state as possible; and dried without the application of much heat.[1]

Qualities. — The recent leaves are nearly inodorous; their taste slightly aromatic, bitter, acrid, and nauseous. The decoction is inert, but the watery infusion, which has the colour of brandy, possesses the sensible qualities of the leaves. Sulphate of iron changes the colour to a deep olive, throwing down a greyish precipitate. The recent root when distilled yields a volatile oil which smells like camphor; but this is not obtained from the dried root. The recent root possesses, also, emetic properties.

Medical properties and uses.—The leaves of Asarabacca are emetic, cathartic, and diuretic; but in modern practice they are never used except as an errhine; and, perhaps, as Dr. Cullen has remarked, they form the most useful species of this genus of local stimulants. A proper dose snuffed up the nose for a few successive evenings at bed-time, occasions a copious discharge from the nostrils, which continues to flow for several days. They have been found particularly beneficial in cephalæa, obstinate tooth-aches, chronic opthalmia, and lethargic affections. The dose of the powdered leaves is grs. iij. to grs. v., which should be repeated every night untill the full effect is produced, avoiding exposure to cold during its use.

---

[1] The roots, which are not ordered in the British pharmacopœias, contain the same acrid principle as Arum; and are violently emetic and cathartic. Their odour, which is not unlike that of Valerian, is said to prove fatal to moles. *St. Hilaire, Expos. des Fam. Nat.* vi. 174.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0223-0

Officinal preparation. *Pulvis Asari compositus.* E. D.

ASSAFŒTIDÆ GUMMI RESINA. Vide *Ferula Asafœtida.*

ASPIDIUM. *Flora Britannica, Smith,* 1118.

Cl. 24. *Ord.* 1. Cryptogamia Filices. *Nat. ord.* Filices *Linn.* G. 429. (*Smith.*) *Fructification* in roundish points, scattered, not marginal. *Involucre* umbilicated, open almost on every side.

** *Frond. nearly bipinnate.*

Species 4. *A. Filix mas.*[1] Male Fern root. *Med. Bot.* 1*st edit. t.* 49. (*Polypodium Filix mas.*) *Eng. Bot.* 1458.

Officinal. FILICIS RADIX. *Lond.* ASPIDII FILICIS MARIS RADIX. *Edin.* FILIX MAS; RADIX. *Dub.* Root of the Male Fern.

Syn. Fougère (*F.*), Johanniswurtzel (*G.*), Felie Maschia (*I.*), Polypodio heleeho masculino (*S.*).

This is a common indigenous, perennial plant, growing in woods and shady places, and flowering in June and July. The root consists of many matted fibres, forming a turfy or cespitose head, of a blackish colour and scaly. The leaves or fronds grow in circular tufts, from a foot to four feet in height, with the stype and mid-rib chaffy. They are of a bright green colour, lanceolate and pinnate. The pinnæ are at first alternate, increasing in size from the base towards the middle, then decreasing towards the summit of the leaf; each being deeply subdivided into linear obtuse parallel lobes, crenate on the edges. The fructification is like small dots on the back of each lobe, placed in two rows near the base, and distant from the edges; composed of a kidney-shaped shield or involucre, and a pale brown capsule, with a saffron-coloured elastic ring.

Qualities. — The dried root is nearly inodorous; the taste at first sweetish, then slightly bitter, subastringent; and mucilaginous when chewed. By a late analysis of M. Mirca it was found to contain a fatty substance of a nauseous odour and disagreeable taste, heavier than water; — gallic and acetic acids, uncrystallizable sugar, tannin, starch, and a variety of gelatine soluble in water and alcohol. He found that it also contained subcarbonate, sulphate, and hydrochlorate of potass, corbonaté et *phosphate* of lime, alumine, silex and oxide of iron.[2] The internal part of the root, which yields a reddish powder, is the portion that is medicinally used.

Medical properties and uses. — This root is astringent, and has been celebrated both by the ancients and the moderns as a powerful anthelmintic. It appears to have been used as such by Theophrastus, Dioscorides, and Galen; but although recommended by Hoffman, yet it was neglected by the moderns, until the publication of Madame Noufer's specific for the tape worm, by the French government, again brought it into notice.

[1] Θηλυπτερις, Dioscoridis.

[2] *Ann. de Chim.* xxvi. 219

According to her plan of administering it, from one to three drachms of the powdered root are to be taken in a large cupful of water, in the morning while the patient was in bed: and, two hours afterwards, a strong cathartic of calomel and gamboge, proportioned to the age and strength of the patient, is to be given; and, if necessary, the further operation promoted by a dose of purging salts; nothing but broth being taken till the worm come away. If this, however, did not happen on the same day, the process was ordered to be repeated on the next day.

Nothwithstanding the celebrity of this remedy, there is every reason for ascribing more efficacy to the cathartic than to the fern root; and it may now be rejected altogether from the materia medica, oil of turpentine being a more certain remedy for expelling tænia.

ASTRAGALUS. *Spec. Plant. Willd.* iii. 1256.

Cl. 17. *Ord.* 4. Diadelphia Decandria. *Nat. ord.* Papilionaceæ or Leguminosæ *Linn.*

G. 1379. *Legume* generally two-celled, gibbous.

Species. — A. *verus.* True Astragalus. *Olivier, Voy. dans l'Empire Ottoman,* v. 342. *pl.* 44.

Officinal TRAGACANTHA. *Lond.* ASTRAGALI TRAGACANTHÆ GUMMI. *Edin.* Tragacanth.

Syn. Gommi Adraganti (*F.*), Traganth (*G.*), Gom Drangant (*Dutch*), Draganti (*I.*), Gomo Tragacantho (*S.*), Alcatira (*Port.*), Sumégh ulkassael (*Arab.*), Xuttivah (*H.*), Vaeberno cottuy pisin (*Tam.*).

This shrub is a native of the north of Persia, where it is called Kurn, flowering in July and August. It rises two or three feet only in height, on a stem about an inch in thickness; with many branches closely crowded together, and covered with imbricated scales and spines, formed from the petioles of the former year. The leaves, which scarcely exceed half an inch in length, are composed of six, seven, or eight pairs of opposite, villous, stiff, pointed leaflets; and the mid-rib is terminated with a sharp yellowish point. The flowers are small, yellow, and proceed from the axilæ of the leaves, with cottony bractes. The calyx is five-toothed, and shorter than the corolla, which is papilionaceous.[1]

The gum exudes in summer, more or less copiously according to the heat of the weather, in tortuous filaments, which are allowed to dry on the plant before being collected. A large portion of the Tragacanth collected in Persia is sent to

[1] Before Oliver discovered that the species of *Astragalus* above described yields the Tragacanth of commerce, this gum was supposed to be yielded by the *A. Tragacantha* of Linnæus, on the authority of Tournefort; or the *A. gummifera*, on that of M. de la Billardière. Perhaps all these species yield it, although the *A. verus* be that from which it is more generally procured. The Kuttirah gum from India has been found not to answer the purposes of the ordinary Tragacanth.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0225-2

India, Bagdad, Bussorah, and Russia. But what we receive is sent to Aleppo, whence it is exported, packed in cases.

Qualities. — Good Gum Tragacanth is inodorous; impressing a very slightly bitter taste as it dissolves in the mouth. It has a whitish colour, is semitransparent, and in very thin, wrinkled, vermiform, pieces: brittle but not easily pulverized, except in frosty weather, or in a warmed mortar. It swells and softens in water, but does not form a homogeneous fluid-mucilage, unless triturated after digestion with a large portion of water: but when the water is acidulated with any of the mineral acids, a small portion of it is dissolved. It is also insoluble in alcohol and ether. Dr. John has given the name of *Cerasin* to this species of Gum, from its being exuded pure from the Cherry-tree, Prunus *cerasus*. Its mucilage differs from that of acacia gum in being precipitated by the super-acetate of lead and oxymuriate of tin; and not by silicated potass [1], or the oxysulphate of iron.

Medical properties and uses. — Gum Tragacanth is demulcent; and may answer the purposes of the Acaciæ gum; being even better adapted for allaying tickling cough, and sheathing the fauces in catarrhal affections, owing to its greater viscidity. It is chiefly, however, employed for pharmaceutical purposes. The dose is grs. x. to ʒ j. or more.

Officinal preparations.—*Mucilago Astragali Tragacanthæ.* E. D. *Pulvis Tragacanthæ comp.* L.

ATROPA. *Spec. Plant. Willd.* i. 1016.

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

G. 381. *Cor.* bell-shaped. *Stam.* distant. *Berry* globular, 2 celled.

Species 2. A. *Belladonna.* Deadly Nightshade, or Dwale. *Med. Bot.* 2d *ed.* 230. *t.* 82. *Eng. Bot.* 592. *Smith. Flor. Brit.* 253.

Officinal. BELLADONNÆ FOLIA, *Lond. Dub.* ATROPÆ BELLADONNÆ FOLIA. *Edin.* Deadly Nightshade leaves.

Syn. Balladone (*F.*), Tollkraut (*G.*), Doodkruid (*Dutch*), Wargbar (*Dan. Swed.*), Belladonna (*I. S. Portug.*), Psinki (*Pol.*), Sug-ungger (*H.*), Robuturbuc (*Pers.*), Inubus salel (*Arab.*).

Belladonna is an indigenous perennial, found in many parts of Great Britain, particularly in shady places where the soil is calcareous, flowering in June, and ripening its berries in September. The root is thick, fleshy, and creeping; sending up several erect, purple-coloured, herbaceous, annual stems, about three feet in height, branching, leafy, round, and somewhat fleshy. The leaves are lateral, in pairs of unequal size, decurrent, on short petioles, egg-shaped, pointed, entire; of a dusky green colour above, and paler below; soft and fatty to the touch. The flowers are supported on one-flowered, soli-

[1] Bostock, *Nicholson's Journ.* lviii. 30.

tary, axillary peduncles; large, drooping, and having a faint narcotic odour: the calyx is green, persistent, and deeply divided into five ovate segments; the corolla bell-shaped, of a lurid hue externally, and within dusky or brownish violet, with a yellow variegated base, inclosing five filaments shorter than the corolla, nodding, and bearing large anthers; with a pyramidal germ, supporting a long simple style and two-lobed stigma. The ripe berry is large, seated within the calyx, roundish, with a longitudinal furrow on each side, shining, smooth, and of a deep purple colour; containing many seeds, and a sweetish, violet-coloured juice.

Qualities. — The leaves of Belladonna are inodorous; the taste is slightly nauseous, sweetish, and subacrid. They do not lose their active properties by drying. Vauquelin found that they contain a substance resembling animal albumen, salts with a base of potash, and a bitter principle, on which their narcotic quality depends; which has since been ascertained by M. Brandes to be an alkali, which he has named *Atropia*[1]. Every part of the plant is poisonous; and children and the ignorant have often suffered from eating the berries, the beautiful appearance and sweet taste of which render them very alluring. The symptoms which they induce are those of intoxication, accompanied with fits of laughter and violent gestures[2]; great thirst, difficulty of deglutition, nausea, dilatation of the pupil, with the eyelids drawn down; redness and tumefaction of the face, stupor or delirium, a low and feeble pulse, paralysis of the intestines, convulsions and death. Dissections show that the stomach and intestines have been inflamed; and after death the body swells, blood flows from the nose, mouth, and ears; and the most rapid decomposition

---

[1] To obtain it boil the dried leaves in distilled water, press the decoction out and filter, after the albumen has been thrown down by a little sulphuric acid; then add potash as long as a precipitate is produced: wash this precipitate in pure water, redissolve it in muriatic acid, and again precipitate by ammonia. This is Atropia. It is in white acicular crystals, insipid, little soluble in cold water, or even alcohol, but very soluble in boiling alcohol, from which, however, it is deposited on cooling. — *Ann. of Phil.* vol. i. p. 2, 3. new series. *Schweigger's Journ.* vol. xxviii. p. 1. M. Runge, however, asserts that Atropia is destroyed by alkalies, and consequently they cannot be used to obtain it. He recommends hydrate of magnesia, procured by decomposing the sulphate by potash. This hydrate just precipitated is added to the aqueous infusion of Belladonna; and the whole evaporated to dryness. The residue is then pulverized, and treated with alcohol. The crystalline mass obtained from the spontaneous evaporation of the alcoholic solution filtered, is *Atropia*. *Ann. de Chim.* xxvii. p. 32.

[2] Buchanan, the Scottish historian, states that the victory of Macbeth over the Danes was obtained chiefly by mixing this plant in a donation of wine and ale, which was sent by the Scots to Sweno during a truce. He describes very accurately the botanical characters of the plant, and adds "vis fructui, radici, ac maxime semini somnifera, et quæ in amentiam si largius sumantur, agat." — *Rerum Scot. Hist.* lib. vii. sect. 6.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0227-4

ensues. The best mode of averting these fatal effects is by exhibiting emetics of sulphate of zinc, or of copper, and assisting their operation by irritating the fauces; then evacuating the bowels by active purgatives and glysters; and following these by large doses of vinegar and other vegetable acids. The recovery is always slow. If M. Runge's experiments be correct, lime water should be the antidote for poisoning by Belladonna.

Medical properties and uses. — The deleterious effects we have enumerated demonstrate that Belladonna is a very powerful narcotic. It is besides diaphoretic, and diuretic. When injudiciously or incautiously given, or when it is taken for a considerable length of time, even in small doses, it is apt to induce a dryness and stricture of the pharynx and adjoining parts of the œsophagus, sickness, vertigo, and dimness of sight; symptoms sufficiently indicative of the necessity of suspending its use for some time, and giving it in smaller doses when it is resumed. The internal administration of Belladonna appears to have been suggested by the advantages resulting from its external application. Cullen, De Haen, Junker, and others, found it very serviceable in scirrhous and cancerous affections; and it has also been given with advantage in obstinate intermittents, chronic rheumatism, gout, paralysis, amaurosis, and pertussis, in which we can speak of its efficacy from our own experience. Hufeland asserts that it has the power of allaying convulsions arising from scrophulous irritation; and its beneficial effects in neuralgia facialis have been well ascertained.[1] Its narcotic powers are certainly great; but they have not been found sufficiently constant and permanent to insure its general use. Externally, used either as a fomentation, or the dried leaves powdered and sprinkled over the parts, it is of singular efficacy in diminishing the pain of cancerous and ill-conditioned sores: and as the infusion, when dropped into the eye, produces a great dilatation of the pupil, it was proposed by professor Reimarus, for dilating the pupil previous to the extraction of the cataract, and the extract is now commonly used in this country, for the same purpose.[2] M. Runge[3] ascertained that this power is destroyed by alkaline solutions. "Its operation appears to be limited to the radiated fibres of the iris."[4] By continued use it loses its effect: but regains it after the application has been, for a short time, suspended. Professor Koreff has stated that Belladonna given during the prevalence of

[1] *Observations on the use of Belladonna, &c.* by John Bailey, 8vo. 1817.
[2] *Med. and Phys. Journal*, No. xxxii.
[3] *Ann. de Chim.* xxvii. 32.
[4] *Adams's Practical Observations on Ectropium, &c.* 8vo. p. 44.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0228-0

Scarlatina, has the power of protecting the individual who takes it from the infection.

Belladonna may be given in substance, beginning with one grain of the dry leaves powdered, and gradually increasing the dose to 12 or 14 grains; or of an infusion, made with one scruple of the dried leaves in ten fluid ounces of boiling water, two ounces may be given daily, and the dose cautiously increased. From what has been stated regarding the effect of alkalies on Belladonna, these bodies are incompatible in formula with it.

Officinal preparations.— *Extract. Belladonnæ*, L. *Succus spissatus Atropæ Belladonnæ*, E.

AURANTII BACCÆ. Vide *Citrus urantium.*

AVENA. *Spec. Plant. Willd.* i. 443.

Cl. 3. *Ord.* 2. Triandria Digynia, *Nat. ord.* Gramina, *Linn.*

G. 142. *Calyx* two-valved, many-flowered; with a twisted awn on the back.

Species 13. A. *sativa.*[1] Common Oat.

Off. AVENÆ SEMINA. *Lond. Edin.* The seeds of the Oat decorticated, called Grits.

Syn. Gruau d'avoine (*F.*), Habergriize (*G.*), Gewoone haver (*Dutch*), Havre (*Dan.*), Hafra (*Swed.*), Avena (*I.*), Avena (*S.*), Avea (*Portug.*).

The oat was found by Anson growing wild upon the island of Juan Fernandez, on the coast of Chili; but the place whence it was first brought to Europe has never been satisfactorily ascertained. The root is annual and fibrous, pushing up a culm 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 of the glumule: both seeds are fertile.

There are many varieties of this species of grain cultivated in the north of Europe.[2] In this country that which is called *the potatoe 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

[1] Βρῶμος, Dioscoridis.

[2] In Scotland, some parts of England, a part of Siberia and in the northern parts of Norway, and Sweden, oats form the chief part of the vegetable nutriment of the inhabitants.

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 acescent 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, diarrhœa, 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.

BALSAMUM PERUVIANUM. Vide *Myroxylon Peruiferum.*

BALSAMUM TOLUTANUM. Vide *Toluifera Balsamum.*

BARYTA. Barytes.

Syn. Baryte (*F.*), Baryterde, Schwerede (*G.*), Barite (*I.*).

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]

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. Davy[3], and oxygen, in unknown proportions.

1. CARBONATE OF BARYTES.

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

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

This fossil is found native in Sweden, Scotland, and Cumberland, but, in greatest abundance at Anglesark, in Lanca-

---

[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 sieve to separate the undissolved part of the grits from the gruel.

[2] So named by Werner, after Dr. Withering, who discovered it native on Alston moor in Cumberland, in 1783.

[3] Mr. Murray proposes *barytum* instead of barium. *Sys. of Chem.* ii. 205.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-135391-p0230-8