

lular integument, or middle-coloured part, yields grs. 43 only of solid matter, of which 19 are tannin; and the epidermis furnished scarcely any quantity either of tannin or of extractive. The quantity of tannin, however, varies according to the size and age of the trees, and the season at which they are barked. Vauquelin discovered that the infusion of Oak bark does not precipitate tartarized antimony, or the infusion of Santa Fé Cinchona, which resembles the officinal red Cinchona, although both of these are precipitated by infusion of galls. I find, however, that infusion of Oak bark forms a precipitate with infusion of yellow Cinchona bark.

Medical properties and uses.—Oak bark is tonic and astringent. It has been given united with bitters and aromatics with seeming advantage in intermittents; but it is in every respect inferior to Cinchona, and cannot be depended on. It is, however, useful in obstinate diarrhœa and alvine hæmorrhages; and it is strongly recommended in the malignant coryza (*snuffles*) of infants, when in spite of keeping the bowels regular, and the use of cordials, the child becomes weak and pallid.* Its principal use is as a local astringent. (See *Decoctum Quercus*.)

The dose in substance may be from grs. xv to grs. xxx; but it is so difficultly pulverized that it is seldom given in this form.

Officinal preparation. *Decoctum Quercus*. L.

RHAMNUS. *Spec. Plant. Willd.* i. 1092.

Cl. 5. Ord. 1. Pentandria Monogynia. *Nat. ord.* Dumosæ Linn.

Rhamni Juss.

G. 405. *Calyx* tubular. *Corolla* scales defending the stamens inserted into the calyx. *Berry*.

* *Thorny*.

Species 1. *R. catharticus*. Purging Buckthorn. *Med. Bot.* 2d ed. 594. t. 210.

Officinal. RHAMNI BACCÆ. *Lond.* RHAMNI CATHARTICI SUCCUS. *Edin.* RHAMNUS CATHARTICUS; BACCÆ. *Dub.* Buckthorn Berries.

Syn. Nerprun (*F.*) Kreutz beeren (*G.*) Bacche del spino Cervino. (*I.*)

This is an indigenous shrub, growing in woods and hedges near brooks; flowering in May and June, and ripening its fruit in October. It rises with a strong rigid woody stem, sending off alternate round branches, which terminate in a spine. The leaves are in fascicles, on footstalks, ovate, serrated, nerved; and the younger one downy: the flowers come from the same buds as the leaves; they are peduncled, of a greenish yellow colour, four-cleft; and frequently, but not always, they are male and female upon different plants: the anthers are round, on short filaments which rise from the base of a small convex

* Underwood, *Diseases of Children*, 4th ed. i. 45.

scale: the germen is ovate, with a slender style and four-cleft stigma: the fruit is a small, round, black, four-seeded berry, about the size of a pea, compressed on one side.¹

These berries are said to be often mixed with those of the black-berried alder and of the dog-berry tree; but as the buck-thorn berry has four seeds, while the others have only two and one, it can be easily distinguished.

Qualities.—The odour of these berries is faint and unpleasant, the taste bitterish, acrid, and nauseous. They are very succulent, and yield by expression a deep green juice, or a purple juice, if they be gathered late in the autumn.

Medical properties and uses.—The berries, or their expressed juice, are briskly cathartic; but their operation is accompanied with thirst and severe griping, which is not altogether mitigated by the most plentiful dilution. They were formerly much used as a hydragogue purgative, but are now very seldom prescribed. The dose of the recent berries is ʒj; that of the expressed juice fʒj, or ʒj of the dried berries.

Official preparation. *Syrupus Rhamni.* L. E.

RHEUM.² *Spec. Plant. Willd.* ii. 488.

Cl. 9. *Ord.* 3. *Enneandria Trigynia.* *Nat. ord.* *Holoraceæ* Linn. *Polygoniæ* Juss.

G. 803. *Calyx* 0. *Corolla* six-cleft, persistent. *Seed* one, three-sided.

Sp. 2. *R. undulatum.* Wave-leaved Rhubarb. *Amaen. Acad.* iii. 212. *t.* 4.

Sp. 3. *R. palmatum.* Palmated Rhubarb. *Med. Bot.* 2d ed. 662.

t. 231. *Phil. Trans.* iv. 292. *t.* 12, 13.

1. RHEUM UNDULATUM.

Official. **RHEUM UNDULATUM; RADIX.** *Dub.* The root of Waved-leaved Rhubarb.

Syn. Rhubarb (*F.*) Rhabarber (*G.*) Rabarbaro (*I.*) Ruibarbo (*S.*) Rāwend (*Arab.*) Révand Chini (*H.*)

This species of rheum was supposed by Boerhaave to be the true Chinese rhubarb; and as it is not unlikely that foreign rhubarb is taken from several species, that which we receive by way of Canton, which certainly differs more than simply in the drying from that which comes through Russia, may be the produce of this plant; and the Dublin College is right in giving it a place in the list of materia medica. It is a native of China and Siberia, but grows well in this country. The root divides into a number of thick fibres, which run deep, and are extremely yellow within: the leaves, which appear early in the spring, are supported on moderately thick footstalks, channelled on their under side, and plain on their upper: the leaves are long, running to a point much waved on their edges, a little

¹ The pigment called sap green is the inspissated juice of this berry.

² *Pnæ*, Dioscoridis.

hairy on the upper surface, and very strongly veined on the under: the flower-stem is of a pale brownish colour, rising about four feet high, and dividing into several loose panicles, or bunches of white flowers, which appear in May, and are succeeded by triangular seeds that ripen early in the season.

2. RHEUM PALMATUM.

Official. RHEI RADIX. *Lond. Edin. Dub.* Rhubarb root.

This species, like the former, is a native of China and Tartary; and arrives at considerable perfection, when cultivated in this country. The root is perennial, thick, oval, branched, externally brown, and internally of a deep yellow colour: the stem, which rises eight or ten feet in height, is erect, round, hollow jointed, slightly furrowed, sheathed, and branching at the top: the lower leaves stand upon long smooth petioles; are numerous, large, rough, of a roundish shape, and deeply sinuated into lobes, which are irregularly pointed; those of the stem spring from the joints, are sheathing, and gradually lessen in size toward the top of the stem: the flowers surround the branches in numerous clusters, forming a kind of spike: they appear in May: the corolla is divided into six obtuse very small segments of a greenish white colour: the filaments are nine, slender, the length of the corolla, and furnished with oblong double anthers: the style is short, with three reflected stigmas; and the germen is a triangular seed, with membranous reddish margins.

This plant has been generally believed to be the species which yields the foreign rhubarb; and under this belief, a very excellent and correct description of it was given by Dr. Hope, professor of botany at Edinburgh, in the Philosophical Transactions for 1765. He had raised it from seed sent to him by Dr. Mounsey from Petersburg two years before, and found that the root possessed all the medicinal qualities of the best foreign rhubarb. Since that period many laudable attempts have been made to introduce the cultivation of rhubarb into this country, in sufficient quantity to supply our domestic consumption of this valuable drug: but although many individuals have reared large quantities, and some of it extremely good, yet so powerful is prejudice, that very little of it can be sold, and the efforts, therefore, of the cultivators have of late very much relaxed.¹ It is still, however, uncertain which of the species yields the foreign rhubarb; nor is it of very great importance, as the roots of the two species above described, and another, the *R. compactum*, accord so very closely in their me-

¹ For an excellent account of those different trials, and some very judicious observations on the mode of cultivating rhubarb, see *Millar's Dictionary*, edited by Dr. Martyn, article *Rheum*.

dicinal powers, that any of them may be used with equal certainty of success.

Three varieties of rhubarb are known in the shops, named from the places whence we receive them; *Russian* rhubarb, *Turkey* rhubarb, and *East Indian* or *Chinese* rhubarb. The two first resemble each other in every respect, appearing to be the root of the same species of plant, prepared in the same mode; and although the *East Indian* is seemingly the root of a different species, yet we are informed by Dr. Rehman¹, that it is the same, only prepared with less care.

All the rhubarb of commerce, known under the names *Turkey* or *Russian*, grows on the declivities of the chain of mountains in Tartary, which stretches from the Chinese town Sini to the lake Kokonor, near Thibet. The soil is light and sandy; and the Bucharrians assert that the best grows in the shade on the southern side of the mountains. Rhubarb, however, is also cultivated in China, in the province of Shen-see, where it is called *Hai-houng*. In Tartary the roots are taken up twice a year in spring and in autumn², and after being cleansed, and decorticated, and the smaller branches cut off, the body of the root is divided transversely into pieces of a moderate size, which are placed on tables, and turned three or four times a day, during five or six days. A hole is then bored through each piece, by which it is hung up to dry exposed to the air and wind, but sheltered from the sun. In about two months the roots have lost seven parts in eight of their weight³, and are fit for the market. In China the roots are not dug up till winter⁴; and the cultivators, after cleaning, scraping off the bark, and cutting them, dry the slices by frequently turning them on stone slabs heated by a fire underneath; after which the drying is completed by hanging them up in the air exposed to the greatest heat of the sun.⁵ As soon as the rhubarb has been dried where it is grown, it is conveyed to Si-ning, where it is again cleaned and aired, and after being cut into smaller pieces and sorted, a large hole is drilled through that intended for the Russian market, in virtue of the

¹ The best Treatise on the Commerce of Rhubarb, and from which much of the information contained in this article has been taken, is from the pen of Dr. Rehman. Vide *Mem. de la Société Imperiale des Nat. de Moscou*. 1809. t. ii. p. 126.

² *Bell's Travels*.

³ *Bath Papers*, iv. 175.

⁴ *Bath Papers*, li. 249.

⁵ It is in the process of drying the roots that the British rhubarb cultivators are supposed to fail. Baumé proposes to steep the roots in water, to deprive them of their gummy matter, before drying them; then to lay them upon twigs in the open air for twelve hours, and lastly to place them in a stove heated to 120°, till they are dried. When sufficiently dry the wrinkles must be rasped out, and the pieces shaken together in a barrel turned on an axis, for half an hour, which covers them with a fine yellow powder formed by their attrition.

contract made with the Russian Government, for the examination of the heart of the pieces. It is then packed up in camel's-hair sacks, and conveyed to Mac-ma-tchin, where it is examined previously to its being transported to Kiachta. The whole of the trade in rhubarb, in China, is carried on by one Bucharian family, which has enjoyed the monopoly since 1772; and it is even by the agents of this family, that it is sold to the English at Canton. This Bucharian family resides at Sin-ning Fu, a town on the frontiers of Thibet, about 3000 verstes from Kiachta, the town on the Russian frontier, where the rhubarb is purchased on the account of the Russian Government. Part of the Tartarian rhubarb is carried to Turkey through Natolia; but the greater part is conveyed by the Bucharians to Kiachta, where it is examined by a Russian apothecary. The best pieces only are selected and sent to Petersburg. It is in roundish pieces perforated with a large hole, of a yellow or reddish colour on the outside, somewhat soft and friable, and when broken exhibiting many diverging streaks of a beautiful bright red colour. Agreeably to the contract with Russia, all which is rejected must be burnt: and even that which is approved undergoes another cleaning before it is finally packed up for St. Petersburg. The Chinese rhubarb, at least what we receive under that appellation, is conveyed to Canton, and there purchased by the East India Company's agents, who purchase all qualities; whence it is brought to this country by sea. It is in oblong, sometimes flat pieces, seldom perforated; considerably heavier, more compact, and less friable than the former kind; of a brownish yellow colour on the outside; and which when broken appear of a dull colour, variegated with yellow and white. Both kinds are brought to this country in cases and chests.

Qualities. — Good *Russian* or *Turkey* rhubarb has a peculiar, somewhat aromatic odour, and a bitter, slightly astringent, subacid taste; feels gritty between the teeth when chewed, and tinges the saliva of a bright yellow colour. It breaks with a rough hackly fracture, is easily pulverized, and affords a powder of a bright buff yellow colour. It should not be porous, but rather compact and heavy. Water at 212° takes up 24 parts in 60; the infusion is of a brown colour nearly clear, and reddens litmus paper. Alcohol extracts 2·7 from 10 parts, and gives a tincture of a rich golden colour, which reddens tincture of litmus; is not altered in its transparency by the addition of water; and strikes a blackish olive hue with solution

* At this examination each piece is struck with a small mallet, to detach from it any impurities, or decayed parts.

of sulphate of iron, but no immediate precipitate falls. Sulphuric ether takes up 1·5 in 10 parts of this rhubarb; the tincture is of a golden yellow hue, and when evaporated on water, leaves a thin pellicle of yellow resin and abundance of extractive dissolved in the water, combined, however, with tannin. *East Indian* or *Chinese* rhubarb has a stronger odour, and is more nauseous to the taste than the Turkey; breaks with a more compact and smoother fracture; and affords a powder of a redder shade. Water takes up 30 parts in 60; the infusion is not so deep-coloured as that of Russian rhubarb, is more turbid, and reddens also litmus paper. Alcohol extracts 4 parts in 10; the tincture is of a much deeper colour, and brownish; gives a deeper red to litmus tincture; is rendered slightly turbid by the addition of water; and strikes a green, not black, olive with sulphate of iron, which it also quickly and copiously precipitates. Ether takes up 2 parts in 10; the tincture is deeper coloured, and when evaporated on water affords the same results as the former kind, except that the compound of tannin and extractive is more soluble.

The infusion of Chinese rhubarb is more copiously precipitated by solution of isinglass than that of the Russian. Infusion of yellow cinchona throws down a copious greenish precipitate from infusion of Russian rhubarb, and a less copious, but more dense bright yellow precipitate from that of Chinese rhubarb.

The following Tables show the effects of re-agents on the aqueous infusions of the two varieties of rhubarb.

TABLE I. Precipitates formed by Acids, Alkalies, and Neutral Salts.

Variety of Rhubarb.	Sulphuric Acid.	Nitric Acid.	Muriatic Acid.	Oxymuriatic Acid.	Solution of Potash.	Solution of Subcarbonate of Potash.	Lime Water.	Muriate of Barytes.	Silicated Potash.
Russian.	copious, greenish yellow.	scanty, flocculent, pale yellow.	scanty, very slowly formed, yellow.	slowly formed, pale olive.	none, but strikes a deep lake colour.	none, but strikes reddish brown.	scanty, slowly formed, brown.	scanty, olive green.	none, but strikes a deep brown.
Chinese.	more copious, brownish yellow.	less scanty, pale yellow.	scanty, quickly formed, brownish yellow.	slowly formed, orange yellow.	none, a deeper lake.	none, but renders it turbid, and deep reddish brown.	copious, quickly formed, brown.	less scanty, orange yellow.	none, but strikes a deep brown.

TABLE II. Precipitates formed by Solutions of Metallic Salts.

Variety of Rhubarb.	Solution of Oxysulphate of Iron.	Solution of Nitrate of Silver.	Solution of Nitrate of Mercury.	Solution of Nitrate of Lead.	Solution of Muriate of Mercury.	Solution of Acetate of Lead.	Solution of Tartarized Antimony.
Russian.	copious, nearly black.	scanty, pale greenish yellow.	copious, olive yellow.	scanty, slowly formed, yellow.	scanty, slowly formed, pale olive.	scanty, greenish yellow.	scanty, slowly formed, whitish.
Chinese.	copious, deep olive green.	copious, orange yellow.	copious, heavy, bright yellow.	scanty, slowly formed, deeper yellow.	copious, quickly formed, heavy yellow.	copious, yellow.	scanty, still more slowly formed.

When the residue, after the action of water, is digested in muriatic acid, and solution of ammonia added in excess, the liquid becomes milky, and deposits oxalate of lime. What remains consists of woody matter, a small portion of alumen, and silex. Of the specimens which I examined, one drachm of Russian rhubarb yielded twenty-six grains of the oxalate, while the same weight of East Indian yielded only eighteen grains.

From the results of the above experiments, rhubarb appears to contain a large portion of *extractive matter*, a small portion of *resin*, *mucus*, *tannin*, *gallic acid*, a *colouring matter*, much *oxalate of lime*, and minute proportions of *alumen* and *silex*. They show that the two varieties differ from each other in several respects. The Russian contains more tannin, oxalate of lime, and resin; the Chinese more extractive and gallic acid. But the purgative principle is still unascertained, although it appears to be combined with the extractive, and hence is soluble in water.

Medical properties and uses. — Rhubarb is stomachic and astringent or purgative, according to the extent of the dose in which it is administered. With a view to the first-mentioned properties, it is usefully given in dyspepsia, hypochondriasis, and in a weakened relaxed state of the bowels, combined with ginger, nutmeg, soda, or bitters.

As a purgative it operates mildly, and may be given to the youngest infants. Its operation is quickened by the addition of neutral salts and calomel, the purgative powers of which it also reciprocally augments; so that a compound formed of small portions of rhubarb and a neutral salt or calomel, acts with more certainty and quicker than large doses of either separately taken. Rhubarb is particularly adapted for the majority of cases of diarrhoea, as it evacuates any acrid matter that may be offending the bowels, before it acts as an astringent. Externally its powder is sometimes sprinkled over ulcers, to assist their granulation and healing.

The Chinese use it medicinally; but they chiefly employ it to colour a spirituous liquor.

Rhubarb is given in a variety of forms (see Preparations), but its purgative properties are most powerful in substance. From ʒj to ʒss of the powdered root opens the bowels freely; and from grs. vi to grs. x may be given for a dose, when its stomachic properties only are required.

Officinal preparations. *Infusum Rhei*. L. E. *Vinum Rhei*. E. *Tinctura Rhei*. L. E. D. *Tinctura Rhei composita*. L. *Tinctura Rhei et Aloes*. E. *Tinctura Rhei et Gentianæ*. E. *Pilulæ Rhei compositæ*. E.

RHODODENDRON. *Spec. Plant. Willd.* ii. 603.
Cl. 10. Ord. 1. Decandria Monogynia. Nat. ord. Bicornes Linn.
Rhododendra Juss.

G. 867. *Calyx* five-parted. *Corolla* nearly funnel-shaped. *Stamens* declined. *Capsule* five-celled.

Species 7. *R. chrysanthum*. Golden-flowered Rhododendron. *Med. Bot.* 2d edit. 299. t. 103. *Pall. Ross.* i. p. 44. t. 30.

Official. RHODOENDRI CHRYSANTHI FOLIA. *Edin.* The leaves of Rhododendron.

Syn. Rosage (*F.*) Gelber Alpbalsam (*G.*) Rhododendro Aureo (*L.*)

This beautiful shrub is a native of the mountainous parts of Siberia, flowering in June and July. It rises a foot in height, and sends off spreading branches which are covered with a brown bark. The leaves are terminal, oblong, ovate, and attenuated to the petiole; few, smooth, stiff, with the margin entire and bent in; the upper surface reticulated, rugged, and of a deep green colour; and the under ferruginous or glaucous. The flowers are large, yellow, and terminate the branches, forming umbels: the calyx is persistent; the corolla monopetalous, inclining, and irregularly divided into five spreading segments: the filaments are slender, nearly as long as the corolla, supporting oval anthers; and the germen is pentagonal, bearing a long slender style, crowned with a five-lobed stigma. The capsule is ovate, somewhat angular; and contains many small gray irregular seeds, like sawdust.

Qualities.—The leaves of this plant are inodorous, and have an austere, astringent, bitterish taste. Water extracts their virtues either by infusion or decoction.

Medical properties and uses.—Yellow rhododendron leaves are stimulant, narcotic, and diaphoretic. When taken, they first increase the arterial action and the heat of the body, producing diaphoresis; and these effects, according to Dr. Home's observations, are followed by a proportional diminution of excitement, the pulse in one case having been reduced thirty-eight beats. In large doses they produce nausea, vomiting, purging, delirium, and all the symptoms of violent intoxication. Both the plant and its effects were first described by ¹Gmelin and Steller, in 1747, as a Siberian remedy for rheumatism; but it was not much noticed till after 1779, when Kœlpin strongly recommended it in this disease, and also in gout and lues venerea. Besides the effects we have already mentioned, it is said to excite a creeping sensation in the pained parts, which after a few hours subsides, and at the same time the pain is relieved. It has not been much used in this country, but, from the result of some trials of it in Scotland, it has obtained a place in the Edinburgh Pharmacopœia.

It is given in the form of decoction, made by boiling ʒiv of the leaves in fʒx of water, in a close vessel, over a slow fire for

¹ *Flora Sibirica*, iv. 121.

twelve hours. The dose of the strained liquor is from f3j to f3ij given twice a day, and gradually increased.

RHUS.¹ *Spec. Plant. Willd.* i. 1479.

Cl. 5. Ord. 2. Pentandria Digynia. Nat. ord. *Dumosæ Linn.* *Terebintaceæ Juss.*

G. 566. *Calyx* five-parted. *Petals* five. *Berry* with one seed.

** with ternate leaves.

Species 17. R. *Toxicodendron*. Poison Oak. Sumach. *Kalm's Travels*, ii. 318.

Official. TOXICODENDRI FOLIA. *Lond.* RHUS TOXICODENDRI FOLIA. *Edin.* Sumach leaves.

Syn. Toxicodendron; Herbe à la Puce (F.) Rus Tossicodendro (I.)

This shrub is a native of North America. It seldom exceeds three feet in height; the root sending up many stems, which divide into slender woody branches, and are covered with a brownish bark. The leaves are placed alternately, supported on long petioles; and are composed of three oval leaflets, about three inches long, and one inch and a half broad, angularly indented, hoary on the under surface, and of a deep shining green colour on the upper: the two lateral leaflets are nearly sessile, and the terminal one is considerably the largest of the three: the male flowers, which are on a distinct plant from the female, spring from the sides of the stalks in close short spikes, and are of an herbaceous colour; the female, which are larger, are produced in loose panicles, and embosom a roundish germen supporting three very short styles: the fruit is a striated berry.

The stems, if cut or broken, exude a milky juice, which was supposed to inflame the skin wherever it touched; but this is not the case, although the plant exudes a deleterious vapour.² The juice becomes black when it is exposed for a short time to the action of atmospheric air.³

Qualities.—The leaves of *Toxicodendron* are inodorous, and have a mawkish subacid taste. Their virtues are completely extracted by water, and partially by alcohol. The aqueous infusion reddens litmus paper; precipitates the solution of sulphate of iron black; that of nitrate of silver brown; and throws down a precipitate with gelatine. Hence it contains gum, resin, gallic acid, and tannin; but a narcotic principle is also present, on which its effects principally depend.

¹ *Pous* Dioscoridis.

² Vans Mons has proved that the acrimonious matter of the plant is exhaled during the night, combined with carbonated hydrogen gas. He collected a jar full of the gas, and on his brother, who was very susceptible of the poison of this species of rhus, plunging his arm into it, the skin was quickly inflamed and blistered. *Actes de la Soc. de Med. de Bruxelles.*

³ This juice forms an indelible black stain on linen cloth; and is used in Japan, where the shrub is a native, as a varnish. *Phil. Trans.* xlix. 158.

Medical properties and uses. — The leaves are stimulant and narcotic. In the hands of Dr. Alderson of Hull, who introduced them as a remedy, they proved successful in several cases of paralysis; but we believe their efficacy in this disease has not been confirmed by the observations of other physicians. They excite a sense of heat and pricking, and irregular twitchings in the affected limbs. We believe some advantage has been found from their use in herpetic eruptions. They have also been found useful in the form of tincture, in cramp of the stomach.

The dose of the powdered leaves may be gr. fs, given twice or thrice a day, and gradually increased to grs. iv, in the form of a bolus.

RICINUS. *Spec. Plant. Willd.* iv. 564.

Cl. 21. *Ord.* 8. Monœcia Monadelphia. *Nat. ord.* Tricoccæ Linn. Euphorbiæ Juss.

G. 1720. *Male.* Calyx five-parted. *Corolla* 0. *Stamens* numerous.

Female. Calyx three-parted. *Corolla* 0. *Styles* three, bifid.

Capsule three-celled. *Seed* one.

* with palmated leaves.

Sp. 1. *R. communis.*¹ Common Ricinus or Palma Christi. *Med.*

Bot. 2d ed. 625. t. 221. *Rheede Hort. Malab.* ii. 57. t. 32.

Official. RICINI SEMINA ET OLEUM. *Lond.* RICINI COMMUNIS

SEMINA; ET OLEUM FIXUM. *Edin.* RICINUS; OLEUM SEMINIBUS

EXPRESSUM. *Dub.* The seeds, and the fixed oil of the seeds of

the Ricinus. Castor oil.

Syn. Le Noix et l'huile du Ricin (*F.*) Rizinuskorner; Rizinushhl (*G.*) I semi e Pollio di Ricino (*L.*) Palmoel; Ricin soel (*S.*) Erunda (*San.*) Khirwa (*Arab.*) Sittamoonka unnay (*Tam.*)

This species of Ricinus is an annual plant, a native of the East and West Indies, South America, and Africa.² It is of very quick growth, and sometimes attains to the height of sixteen feet.³ The stem is round, thick, jointed, furrowed, glaucous in the lower part, but of a purplish red colour towards the top: the leaves are petiolate and subpeltate, large, deeply divided into seven pointed serrated lobes, and of a blueish green colour: the calyx of the male flower is composed of five oval, pointed, purplish segments, inclosing many long stamens united at the base; the female is at the upper part of the spike, and is composed of a three-cleft, reddish calyx: the styles are three, slender, and forked at the apex: the capsule is a trilocular nut, covered with rough spines, and bursting elastically to expel the seeds, which are generally three, and of an oblong flat figure, and white colour.

The oil, which is more frequently used than the seeds, is ob-

¹ *Kixi* Dioscoridis.

² It was first cultivated in Britain in 1562.

³ It has been asserted that this plant is in some places perennial, becoming a large tree. Willdenow, however, says, "Planta semper annua, nunquam fruticosa vel arborea, nec in calidissimis terræ plagis lignescit." *Spec. Plant.* iv. 564.

tained from the seeds both by coction and expression. The former method was generally used till lately; and was performed by tying up the seeds, previously decorticated and bruised, in a bag, which was suspended in boiling water till all the oil was extracted and rose to the surface, when it was skimmed off. This mode of preparation is still preferred by many of the West Indian practitioners; but as the oil is apt to get soon rancid when thus prepared, it is now obtained, both at home and abroad, by subjecting the seeds to the press, in the same manner as almonds to procure almond oil. The oil obtained is equal to one-fourth of the weight of the seeds employed.

Qualities. — Good expressed castor oil is nearly inodorous and insipid: but the best leaves a slight sensation of acrimony in the throat after it is swallowed. It is thick, viscid, transparent, and colourless, or of a very pale straw colour; that which is obtained by coction has a brownish hue; and both kinds, when they become rancid, thicken, deepen in colour to reddish brown, and acquire a hot, very nauseous taste. It has all the chemical characters of the other expressed oils, except that it is almost completely soluble in sulphuric ether.

Medical properties and uses. — The seeds are drastic cathartics, but are scarcely ever ordered. The oil is mildly purgative, operating very quickly, and with so little irritation, as to render it peculiarly fitted for cases in which the stimulating purgatives would prove hurtful; as in ileus, colica pictorum, (in which it may be advantageously joined with henbane,) calculous affections, piles, and after surgical operations in which the abdominal viscera are concerned. In dysentery, in which this oil is particularly indicated, the stomach will seldom retain it; but when this is the case it may be efficaciously exhibited per anum. It is also an excellent purgative for infants, even of the tenderest age, and for women in child-bed.

The dose is from $\mathfrak{z}\text{iv}$ to $\mathfrak{z}\text{j}$, either floated on a little water, and covered with a small quantity of any ardent spirit; or diffused in a cup of coffee; or in water, by means of mucilage of acacia gum, or the yolk of egg. The addition of some aromatic tincture is generally necessary to make this oil remain on the stomach.

ROSA. Spec. Plant. Willd. ii. 1063.

Cl. 12. Ord. 5. Icosandria Polygynia. Nat. ord. Senticosæ Linn. Rosaceæ Juss.

G. 997. Petals five. Calyx pitcher-shaped, five-cleft, fleshy, contracted at the neck. *Seeds* numerous, hispid, affixed to the inner side of the calyx.

*** with ovate germens.*

Species 15. R. centifolia. Hundred-leaved Rose. Med. Bot. 2d ed. 495. t. 178.

Species 16. *R. gallica*. Red Rose. *Med. Bot.* 2d edit. 497. t. 179.
Species 31. *R. canina*. Dog Rose, or Hep Tree. *Med. Bot.* 2d ed.
 493. t. 177. *Smith Flor. Brit.* 540. *Gärtner*, i. 347. t. 73.

1. *ROSA CENTIFOLIA*.

Official. *ROSÆ CENTIFOLIÆ PETALA.* *Lond. Edin.* *ROSA DAMASCENA*; *PETALA.* *Dub.* The petals of the Hundred-leaved Rose.

Syn. Wurd (*Arab.*) Gooläbu-poo (*Tam.*)

Although this species of rose be commonly cultivated in almost every garden in Europe, yet the place whence it was originally brought is still undetermined, notwithstanding Loureiro's assertion that it is a native of China. In the Dublin Pharmacopœia it is improperly confounded with the damask rose, which is altogether a different species.¹ The bush rises with prickly stems about three feet in height. The leaves consist of two or three pair of leaflets, with a terminal one, attached on very short petioles to a rough common footstalk: the leaflets are oval, broad, smooth, of a deep green colour on the upper surface, hairy on the under, and serrated, with purple edges. The flowers, which appear in June, are large, supported on peduncles beset with brown, bristly hairs. The segments of the calyx are semipinnate; the petals large, of a beautiful pale red colour, fragrant, and very numerous.

The varieties of this species of rose are very many; but for medicinal purposes they may be indiscriminately used. The petals only are employed.

Qualities. — Their odour is extremely fragrant, and their taste sweetish, subacidulous, and at last very slightly bitter. In distillation with water, a small portion of a butyraceous oil is obtained; and the water is strongly impregnated with the odour of the rose.

Medical properties and uses. — The petals of this species of rose are slightly laxative; and as such are ordered, combined with sugar, in the form of a syrup, as an adjunct to oil and other purgatives in infantile diseases: but they are chiefly employed for the distillation of rose-water.

Official preparations. *Aqua Rosæ.* *L. E. D.* *Syrupus Rosæ.* *L. E.*

2. *ROSA GALICA.*

Official. *ROSÆ GALICÆ PETALA.* *Lond. Edin.* *ROSÆ RUBRÆ PETALA.* *Dub.* The petals of the Red Rose.

Syn. Fleurs des Roses rouges (*F.*) Essig-rosen (*G.*) *Rosa domestica* (*L.*)

This species is a native of the south of Europe, cultivated in our gardens, and flowering in June and July. The stalks rise about three feet in height, are erect, and almost destitute of prickles. The foliage resembles that of the *centifolia*; but the leaflets are not so large, scarcely tomentose below, and subacute.

¹ See *Hort. Kew. Willdenow*, &c. Gerarde cultivated this species in 1596.

The flowers also are less doubled; the petals large, widely spread open, of a deep rich crimson colour, fragrant, and displaying an abundance of yellow anthers, on thread-like filaments; with the papillary stigmas of numerous connected villose styles, rising from the germen. The petals of the unblown buds are the parts medicinally used. They are cultivated in abundance in the neighbourhood of London for medicinal purposes.

Qualities. — The odour of this rose is less fragrant than that of the former species, but it is improved by drying: the taste is pleasantly bitter, and austere. Water at 212° extracts both its odour and taste; and the infusion strikes a black with sulphate of iron; and also forms a precipitate of a dark colour with sulphate of zinc.

Medical properties and uses. — The red rose is astringent and tonic. It forms an elegant and useful vehicle for the exhibition of mineral acids, nitrate of potash, and other neutral salts, in hæmorrhages, and many other diseases. (See the Preparations of it.)

Official preparations. *Confectio Rosæ.* L. E. D. *Infusum Rosæ.* L. E. D. *Mel Rosæ.* L. D. *Syrupus Rosæ.* E.

3. ROSA CANINA.

Official. *ROSÆ CANINÆ PULPA.* Lond. *ROSÆ CANINÆ FRUCTUS.* Edin. The pulp of the Dog-rose fruit, or Hep.

Syn. Le fruit d'Eglantier de Chien (F.) Hagebutten (G.) La polpa di fruti di Rosa canina (I.)

This species is a common but beautiful ornament of our hedge-rows, flowering in June, and exhaling a very fragrant perfume. It rises to the height of eight or ten feet, has a smooth stem; with two alternate, compressed, conical-hooked, bright red internodial prickles; and elongated branches spreading from the upright. The leaves are pinnate, composed of seven ovate, pointed, inodorous leaflets, naked and smooth on both sides, but the upper shining, and of a deeper green than the under. The petioles are prickly and glandular. The floral peduncles generally form a kind of corymb; but are sometimes solitary and smooth. The calyx is pubescent within, and on the margin: the petals are inversely cordate, generally five, of a pale flesh colour, often white, and odorous. The fruit is an ovate, fleshy, smooth, red-berried calyx, with the apex sometimes open, sometimes shut, containing about thirty long angular seeds, embedded among white silky bristles.

Qualities. — The fruit is inodorous, and has a pleasant sweet acidulous taste, depending on uncombined citric acid and sugar, which it contains.

Medical properties and uses. — The pulpy part of heps is cooling, but possesses no direct medicinal properties. It is used only for the formation of the confection.

Official preparation. *Confectio Rosæ caninae*. L.

ROSMARINUS. *Spec. Plant. Willd.* i. 126.

Cl. 2. Ord. 1. Diandria Monogynia. Nat. ord. Verticillatæ Linn.
Labiatae Juss.

G. 62. Corolla unequal, with the upper lip two-parted. Filaments long, curved, simple with a tooth.

Species 1. *R. officinalis*.¹ Official Rosemary. *Med. Bot.* 2d edit.
329. *Sibthorp Flora Græca*. t. 14.

Official. ROSMARINICACUMINA. Lond. ROSMARINI OFFICINALIS CACUMINA. Edin. ROSMARINA; HERBA. Dub. Rosemary tops.

Syn. Romarin (F.) Rosmarin (G.) Ramarino (I.) Remero (S.)

This plant is a native of the south of Europe, Greece, and Barbary; but has been long cultivated in Britain, where it flowers in April and May. It is an evergreen, erect, very branching shrub, rising about four feet in height; the branches thickly covered with leaves, and the smaller ones four-cornered and downy. The leaves are opposite, almost sessile, more than an inch in length, and one-sixth of an inch broad, linear, obtuse, entire, with the margin turned back; of a dark green colour, smooth, and shining on the upper side, woolly, veined, and of a silvery hue on the under. The flowers, which are placed on little axillary, opposite, leafy branches, are axillary and terminal, erect, on short stalks. The calyx is bell-shaped, bilabiate, villous; the upper lip entire, the under cloven into two pointed segments: the corolla is ringent, downy, pale blue, variegated with purple and white; the tube longer than the calyx, a little compressed, the upper lip erect and bifid, the lower cleft into three segments, the middle one larger, concave, and notched. The stamens are longer than the upper lip, arched, furnished with a tooth above the base, and supporting an oblong, blue, terminal anther. The style is the length of the stamens, thread-like, arched, and terminated by a simple sharp stigma. The seeds are four, oblong, and lodged in the bottom of the calyx.

Qualities.—Both the leaves and flowers have a grateful aromatic odour, and a bitterish warm pungent taste, depending on an essential oil, which appears to be combined with camphor: Vide *Ol. rosmarini*. Alcohol extracts its virtues completely, but they are only partially given out to water. By distillation with water, its essential oil is obtained. The leaves afford the greatest quantity; the flowers the smallest.

Medical properties and uses.—Rosemary is stimulant, and, according to some, emmenagogue.² It has been given in the form of infusion in nervous head-ach, hysteria, and chlorosis, but it is now scarcely ever prescribed, unless as an odorous ad-

¹ *Διευρωρίς* Dioscoridis.

² *Bergius, Mat. Med. a Regno Veget.* p. 21.

junct to sternutatory powders. The dose in substance may be from grs. x to ʒij; and from ʒj to ʒifs, in infusion.

Official preparations. *Oleum Rosmarini*. L. E. D. *Spiritus Rosmarini*. L. E. D.

RUBIA. *Spec. Plant. Willd.* i. 603.

Cl. 4. *Ord.* 1. Tetrandria Monogynia. *Nat. ord.* Stellatæ Linn.

Rubiaceæ Juss.

G. 187. Corolla of one petal, bell-shaped. Berries two, one-seeded. *Species* 1. *R. tinctorum*.¹ Dyers' Madder. *Med. Bot.* 2d edit. 173. t. 67.

Official. RUBIÆ RADIX. *Lond. Dub.* RUBIÆ TINCTORUM RADIX. *Edin.* The root of Dyers' Madder.

Syn. Garance (F.) Krappwurz; Færberrothe (G.) Radiche di Robbia o Garanza (I.) Rubia (S.) Murjith (H.) Mantjittie (Tam.)

This plant is a perennial, with annual stems. It is a native of the south of Europe, the Levant, and Africa; and has been cultivated to a very great extent for upwards of 300 years in Zealand: it flowers in June.² The root is composed of many long, thick, succulent fibres, about the thickness of a man's finger, united at the top in a head; from which go off many side roots, extending under the surface of the ground, and throwing up shoots, by which the plant may be propagated. The stems are quadrangular, jointed, procumbent, and furnished with rough, short, hooked points, by which they are supported on the neighbouring plants. The leaves, which are in whorls of four or five, are elliptical, pointed, rough, and ciliated, about three inches long, nearly one broad in the middle; and having the midribs armed with the same kind of spines as on the stems. The branches bearing the flowers spring from the joints of the stems. The flowers are small, terminal, with a campanulate yellow corolla, cut into four oval segments: the filaments short, supporting simple erect anthers; and the germen is inferior and double, crowned with a slender style bearing two globular stigmas; and becoming two round black berries.

Madder root is dug up for use in the third summer of its growth. It is then dried gradually in a stove built in the form of a tower, containing several floors; and from the uppermost it is progressively removed to the lowest; after which it is thrashed, to remove the cuticle; and then dried completely in a kiln. When perfectly dried it is pounded, and finally packed in barrels for the market. There are three descriptions of this powder. The first pounding separates and reduces to a

¹ *Ῥαβδαν* Dioscoridis.

² As madder is an article of great national importance as a dye-stuff, many attempts have been made to cultivate it in this country, but without success, the Dutch madder being both better and cheaper than ours. That it can be grown to great perfection in this country is certain, and the effort to introduce its culture should not be dropped. The best comes from Zealand; to which, Britain alone is said to have paid 200,000*l.* annually for madder. *Bancroft on Permanent Colours*, 2d edit. v. ii. p. 222.

powder the fibrillæ, and the skins of the larger roots only, which is sold at a low price, under the name of *mull*; a second pounding separates one-third of the remaining parts of the large roots, and is sold under the name of *gemcens*: and a third pounding forms into a powder the pure, bright residue of the roots, which is the best; and is simply called *crop madder*.¹

Qualities.—Madder has an unpleasant but not strong odour, and a bitter slightly austere taste. It attracts the moisture of a damp atmosphere, and is injured by it. To water, alcohol, and volatile oils, at a temperature of 60°, it imparts a red colour; but to water at 212° the colour imparted has a deep tinge of brown. Its principal constituent is extractive; which is precipitated by solution of alum brownish red; by the alkaline carbonates and lime-water, blood-red or lake; and by acetate of lead, brown.² The taste and odour of the madder are imparted to water and alcohol by infusion.

Medical properties and uses.—Madder is usually regarded as emmenagogue; and was formerly much relied on in chlorosis and scanty and difficult menstruation. It has also been recommended in jaundice, and the atrophy of infants: but its efficacy in any disease is extremely problematical. Its colouring matter, however, is carried into the circulation, tinges the urine a blood-red colour, and is deposited in the bones.³

The dose of madder may be from grs. xv to ʒj, united with sulphate of potash; and given three or four times a day.

RUMEX. *Spec. Plant. Willd.* ii. 249.

Cl. 6. Ord. 2. Hexandria Digynia. Nat. ord. Holoraceæ Linn. Polygonæ Juss.

G. 699. Calyx three-leaved. Petals three, converging. Seed one, three-sided.

** *Hermaphrodites*: with naked valves, or not marked with a grain.

Species 18. *R. aquaticus*. Great Water-dock. *Smith Flora Brit.* 394. *Med. Bot.* 2d edit. t. 299.

*** with *diclinous* flowers.

Species 31. *R. acetosa*. Common Sorrel. *Med. Bot.* 2d edit. t. 230. *Smith Flora Brit.* 396.

1. RUMEX AQUATICUS.

Official. —; **RADIX.** *Dub.* The root of Water-dock.

Syn. Wasser Ampfer (*G.*)

Water-dock is an indigenous, perennial plant, growing in ditches, and on the banks of rivers; flowering in July and August. The root is thick. The stem rises about five feet in height, straight, furrowed, and smooth. The leaves are almost glaucous, lanceolate, and pointed; and the lower ones obcor-

¹ *Bancroft*, l. c.

² *Annales de Chimie*, iv. 104.

³ *Vide Phil. Trans.* xxxix. 287—299. The leaves of the plant are said to tinge the milk of cows reddish, when eaten by them.

date at the base. The flowers are in approximate whorls. They are nodding, on capillary pedicles, thickened at the apex. The valves are large, ovate, veined, entire, sometimes a little toothed, and all marked with a small linear, often obscure grain: the seed is large.

Qualities.—The root is nearly inodorous, and has a very austere taste. It yields its virtues to water.

Medical properties and uses.—Water-dock root is powerfully astringent. It was formerly celebrated under the name *Herba Britannica*, as a remedy for scurvy, and some cutaneous affections; but it is now scarcely ever employed.

2. RUMEX ACETOSA.

Official. ACETOSÆ FOLIA. *Lond.* RUMICIS ACETOSÆ FOLIA. *Edin.* Common Sorrel leaves.

Syn. Oseille ordinaire (F.) Sauer Ampfer (G.) Acetosa (L.) Acedera (S.)

This is an indigenous perennial plant, common in pastures, and flowering in June. The stem is round, striated and leafy, and rises from one to two feet in height. The leaves are oblong-ovate, and arrow-shaped; the radical ones petiolate and obtuse; and those of the stem sessile, amplexicaule, pointed, and a little rolled back. The flowers are dioecious, in branched panicles, and arranged in half whorls: the calyx and corolla small; the stamens very short, bearing large yellow anthers, and the styles short, with large crimson-bearded stigmas. The valves are ovate, entire, and graniferous.

Qualities.—Sorrel leaves are inodorous, and have a grateful austere acidulous taste, depending on the presence of superoxalate of potash, which they contain.

Medical properties and uses.—These leaves are refrigerant and diuretic. Their expressed juice diluted with water, or a decoction of them in whey, affords a useful drink in cases of inflammatory fever; and eating them in large quantities daily as a salad, may prove serviceable in some cutaneous affections. In France the plant is cultivated for the use of the table.

RUTA. *Spec. Plant. Willd.* ii. 542.

Cl. 10. *Ord.* 1. Decandria Monogynia. *Nat. ord.* Multisiliquæ Linn. Rutaceæ Juss.

G. 827. *Calyx* five-parted. *Petals* concave. *Receptacle* surrounded by ten melliferous points. *Capsule* lobed.

Sp. 1. *R. graveolens*.² Common Rue. *Med. Bot.* 2d edit. 437. t. 174.

Official. RUTÆ FOLIA. *Lond. Dub.* RUTÆ GRAVEOLENTIS HERBA. *Edin.* The leaves and herbaceous part of Rue.

Syn. Rue sauvage (F.) Raute, Garten raute (G.) Ruta (L.) Ruta de desperado (S.) Suddap (Arab.) Sauri (H.)

Rue is an evergreen perennial, a native of the South of Europe, but much cultivated in our gardens, flowering in June

² 'Ρουτ-κρυφον Dioscoridis.

and September. It rises to the height of two or three feet, shrubby and branching, with the lower part of the stems ligneous, and covered with a rough, striated, gray bark; but the upper branches are smooth, and of a pale green colour. The leaves are doubly pinnate; the pinnæ distant; and the leaflets obovate, sessile, decurrent, and very obscurely crenate, with the terminal one generally notched; the surface punctured, the texture rather thick, and the colour blueish green or glaucous. The flowers are produced in terminal branched corymbs on subdividing peduncles. The flower which opens first has a five-parted calyx, and a five-petalled corolla; but the others have the calyx four-parted only, and a four-petalled corolla. The petals are concave, wrinkled at the edge, of a pale greenish yellow colour, and very much spread: the stamens are awl-shaped, the length of the petals, and bearing small yellow quadrangular anthers.* The germen is large, oval, punctured, deep green, with crucial furrows, and crowned with a short style and simple stigma: and the seeds are angular, rough, and blackish.

Qualities.—Rue leaves have a powerful unpleasant odour, and a hot, bitter, nauseous taste. In the recent state, the leaves possess so much acrimony as to inflame and blister the skin; but much of this is dissipated in drying. In distillation with water they yield a pungent volatile oil, on which their virtues chiefly depend: consequently, decoction is a bad form of preparation of rue.

Medical properties and uses.—Rue is stimulant, and antispasmodic; and is supposed to possess emmenagogue powers. It was in high estimation so early as the time of Hippocrates, who frequently ordered it in female complaints.[†] In modern practice it is chiefly used in hysteria and flatulent colic. I have found a strong infusion of it, exhibited per anum, of great service in relieving the convulsions of infants, arising from flatulence and other intestinal irritations. The dose of the powdered leaves is from grs. xv to ʒij, given twice or three times a day.

Official preparations. *Oleum Rutæ*, D. *Extractum Rutæ graveolentis*, E. D.

SABINÆ FOLIA. Vide *Juniperus*.

SACCHARUM. *Spec. Plant. Willd.* i. 122.

Cl. 3. Ord. 2. Triandria Digynia. Nat. ord. Gramina.

G. 122. *Calyx* two-valved, involucre, with a long lanugo. *Corolla* two-valved.

* These stamens display in a striking manner the spontaneous motions which take place in some plants. They are very stiff, and cannot be disturbed from the posture in which they happen to be; but nevertheless they rise, by a spontaneous movement, one or two at a time, and lean over the stigma till the pollen be shed, when they fall back again, and give place to others.

† De Morbis Mulier.