only is officinal; and, as its epidermis is perfectly inert, it is taken for medicinal purposes from the smaller branches, the epidermis of which is still thin, and scarcely cracked. The bark cut in spring is preferable to that which is cut in winter, as it contains four times the quantity of the astringent principle or tannin.[1]

Qualities. — Oak bark is inodorous, has a rough astringent taste, and yields its virtues to both alcohol and water. The watery infusion is affected by all those tests which indicate the presence of gallic acid, tannin, and extractive (see *Decoctum Quercus*). Sir H. Davy[2] found that ℥j. of the inner cortical part of young oak bark affords, by lixiviation, 111 grains of solid matter, of which 77 are tannin; the cellular 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 Fe 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.[3] 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.

RANUNCULUS. *Spec. Plant. Willd.* iv. 1307.

Cl. 13. *Ord.* 6. Polyandria Polygynia. *Nat. ord.* Ranunculaceæ, *Juss.*

G. 1086. *Calyx* five-leaved. *Petals* five, with a melliferous pore within the claws. Seeds naked.

* *With simple leaves.*

Species 1. R. *Flammula*, Lesser Spear Wort. *Eng. Bot. t.* 387. *Fl. Dan. t.* 575. *Curt. Fl. Lond.* 6. *t.* 37.

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[1] Biggin. *Phil. Trans.* 1799. [2] *Phil. Trans.* 1803.
[3] Underwood, *Diseases of Children*, 4th ed. i. 45.

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* * *With divided leaves.*

Species 45. R. *acris.* Upright Meadow Crowfoot. *Eng. Bot. t.* 652. *Curt. Fl. Lond.* 1. *t.* 39.

1. RANUNCULUS FLAMMULA.

Officinal. RANUNCULUS FLAMMULA HERBA, RECENS, *Dub.* The fresh herb of Lesser Spearwort.

Syn. Renoncule petite Douve (*F.*)

This indigenous species of ranunculus is common in moist and marshy places; flowering in May and June, and continuing in flower the greater part of the summer. The root consists of long, simple fibrils, united in fascicles. The stems are spreading, somewhat decumbent, round, smooth, branching, and leafy. The leaves are alternate, lanceolate, and supported on long, channelled petioles, dilated at the base, near the root; linear-lanceolate on the upper part of the stem; pointed, smooth, sometimes entire, occasionally sparsely serrated. The flowers are of a bright yellow colour, shining, supported on the extremities of the stems, solitary, or on bifurcated peduncles. The calyx is reflex and smooth: the nectary is minute: the seeds are smooth.

Qualities. — Like all the species of ranunculus, lesser spear wort is acrid and caustic, but its acrimony is diminished by drying, and altogether destroyed by boiling in water.

Medical properties and uses. — The fresh herb is rubefacient and epispastic.

2. RANUNCULUS ACRIS.

Officinal. RANUNCULUS ACRIS, FOLIA, *Dub.* The leaves of Upright Meadow Crowfoot.

Syn. Bouton d' Or (*F.*).

This species of ranunculus is also indigenous. It is common in meadows and waste places, flowering in June and July. The root is tuberose, furnished with long, simple fibres. The stem is erect, about two feet in height, somewhat villous, furnished with few leaves, and branching above. The leaves are tripartite, quinque partite, and multifidous; the radical leaves are supported on long petioles, the upper are nearly sessile and linear. The flowers are terminal, large, of a brilliant yellow colour, supported on round hairy peduncles. The calyx is spreading and hairy, the nectary is covered with an emarginate scale.

Qualities. — The leaves are bitter and acrid to the taste; and inflame the skin when they are applied to it.

Medical properties and uses. — The leaves of upright meadow crowfoot are rubefacient. They are bruised and applied as a remedy in scabies, and some other cutaneous diseases, in Norway; and in Iceland are used as a vesicatory. It is probable, that they have found a place in the Dublin Pharmacopœia on account of their rubefacient properties.

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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.*[1] Purging Buckthorn. *Med. Bot.* 2*d edit.* 594. *t.* 210.

Officinal. RHAMNI BACCÆ, *Lond.* RHAMNI CATHARTICI SUCCUS, *Ed.* 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 are 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 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.[2]

These berries are said to be often mixed with those of the black-berried alder and of the dog-berry tree: but as the buckthorn 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, and 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 ℈j., of the dried ʒj., and that of the expressed juice f℥j.

Officinal preparation. *Syrupus Rhamni*, L. E.

RHEUM.[3] *Spec. Plant. Willd.* ii. 488.

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

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[1] *Purgierdorn* (G.), *Purgerende wegedoorn* (Dutch), *Korsbaerton* (Dan.), *Getappel* (Swed.), *Ramno cartico* (S.), *Escambrociro* (Port.), *Pridoroschnaja igolka* (Russ.), Szaklak krzewia (Pol.).

[2] The pigment called sap green is the inspissated juice of this berry.

[3] Ῥῆον Dioscoridis. The rhubarb of the Greeks was the root of Rheum *Rhaponticum.*

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G. 803. *Calyx* none. *Corolla* six-cleft, persistent. *Seed* one, three-sided.

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

Sp. 3. R. *palmatum.* Palmatum Rhubarb. *Med. Bot. 2d edit.* 662. *t.* 231. *Phil. Trans.* iv. 292. *t.* 12, 13.

1. RHEUM UNDULATUM.

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

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: the Dublin College, therefore, 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 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.

Officinal. RHEI RADIX, *Lond. Edin. Dub.* Rhubarb root.

Syn. Aechte Rhabarber (*G.*, *Dutch*, *Dan.*, *Swed.*), Ruibarbo (*S.*, *Port.*), Hai houng (*Chinese*), Daiwoo (*Japanese*).

This species, like the former, is a native of China and Tartary: it grows on the snowy mountains of Boutan and of Dauria, 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, very slightly furrowed, and maculated with small, oblong, purple streaks: the lower leaves stand upon long, smooth petioles [1]; are numerous, large, divided into five segments, which are deeply sinuated, toothed, and strongly ribbed, the petiole being divided at its apex into the five midribs of the segments; of a deep-green colour, rough above, and pale and villous below: those of the stem spring from the joints, are also petiolate, and gradually lessen in size towards the top of the stem; there is a sheathing stipule or *ochrea* at the base of each stem-leaf. The flowers spring from the axilla of

[1] These make a much better tart than the leaf-stalks of R. *undulatum*, the species generally employed by the pastrycook.

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the base in numerous panicled clusters; they appear in May: the corolla is divided into six obtuse segments, of a greenish white colour, tinted with light pinkish purple[1]: the filaments are nine, slender, the length of the corolla, and furnished with oblong, double anthers: the style is short, with three reflected capitate stigmas; and the germen is a triangular seed, enclosed in a capsule with three membranous, reddish margins or alæ.

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 Petersburgh 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.[2] 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 of another, the R. *compactum* and R. *Australe*, accord so very closely in their medicinal powers, that any of them may be used with equal certainty of success.[3]

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 one another in every respect, appearing to be the root of the same species of Rheum prepared in the same mode; and although the East Indian is seemingly the root of a different species, yet we are informed by Dr. Rehman[4], that it is the same, only prepared with less care.

[1] Qy. Whether is the floral envelope calyx or corolla?—It is white at first, becomes red and succulent, and is persistent.

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

[3] The latest account of rhubarb is given by my friend and late pupil, Mr. Royle, in the Calcutta Medical Transactions for 1827. He says one species, R. *emodi* of Wallich, is found in great abundance on the Chur mountain, at an elevation of 9000 feet. He adds, "the table-land of Tartary is covered with Rhubarb, at the height of 16,000 feet; and there is abundance at Ludak, in lat. 37°, whence some of very fine quality was sent to Captain Kennedy by Mr. Mawcroft." *Trans. of the Med. and Phys. Soc. of Calcutta*, vol. iii. p. 440.

[4] The best Treatise on the Commerce of Rhubarb, and from which much of the

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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 Koko Nor, near Thibet, the source of the river Chou-cho. The soil is light and sandy; and the Bucharians 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 autumn [1]; 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 weight [2], and are fit for the market. In China the roots are not dug up till winter [3]; 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. [4] 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 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 versts from Kiachta, the town on the Russian frontier, where the rhubarb is purchased on the account of the Russian government. Part of the Tartarian

information contained in this article has been taken, is from the pen of Dr. Rehman. Vide *Mém. de la Société Impériale des Nat. de Moscow*, 1809. t. ii. p. 126.

[1] *Bell's Travels.* [2] *Bath Papers*, iv. 175. [3] *Bath Papers*, ii. 249.

[3] It is in the process of drying the roots that the British cultivators of rhubarb 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.

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rhubarb is carried to Turkey through Natolia, thence the name Turkey rhubarb; 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 Petersburgh. The pieces are roundish, perforated with a large hole, of a yellow or reddish colour on the outside, somewhat soft and friable, and, when broken, exhibit many diverging streaks of a beautiful bright red colour. Agreeably to the contract with Russia, all the rhubarb which is rejected must be burnt; and even that which is approved must undergo another cleaning before it is finally packed up for St. Petersburgh.[1] 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, when broken, the fracture is hackly, appears of a dull colour, and variegated with yellow, pink, and white. Both kinds are brought to this country in cases and chests.[2]

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, forming an infusion of a brown colour, nearly clear, and reddening 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 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. According to the analysis of M. Henry, it contains a yellow colouring matter; a bland oil; fecula; a small quantity of gum, tannin, lignine, oxalate of lime, supermalate of lime, sulphate of lime, a salt of po-

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

[2] Rhubarb sometimes appears wormeaten; a circumstance which arises from its being eaten, in its dry state, by a small beetle, sinondendrum *pusillum*. *Kirby and Spence's Entom.* vol. i. p. 232.

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tassa; and oxide of iron.[1] *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 blackish 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 bark 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.

When the residue, after the action of water, is digested in muriatic acid, and solution of ammonia added in excess, the liquid becomes of a deep purple colour, then somewhat 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 my experiments, rhubarb appears to contain a large portion of *extractive matter*, a very small portion of *resin*, *mucus*, *tannin*, or rather a principle analogous to it, *gallic acid*, a *colouring matter*, much *oxalate of lime*, and minute proportions of *alumen* and *silex*.[2]

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[1] *Bulletin de Pharm.* t. vi. p. 87.

[2] According to some experiments published by Mr. John Henderson, in the *Annals of Philosophy*, rhubarb is supposed to contain also a peculiar acid, to which he has given the name of *Rheumic;* but M. De Lassaignes has proved, that this is the oxalic acid; which agrees with the result of our analysis. It is remarkable, that Mr. Brande, in an analysis of rhubarb, published in the *Quarterly Journal of Science*, vol. x., does not notice either oxalic acid or any oxalate as being contained in this root, although they have been found and are mentioned by every other analyst who has examined rhubarb. But it is still more extraordinary, that Mr. Brande has asserted, that "no chemical investigation into the nature of rhubarb, if we except a few experiments upon it, given in Neumann's Chemistry," had been made prior to his own; while every one acquainted with pharmaceutical chemistry knows that (not to mention our analysis) it has been examined by Scheele, Bayen, Deluval, Vauquelin, M. Clarion, De Lassaignes, M. Henry, &c.; all of whom mention oxalic acid and oxalate of lime among its components.

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

Variety of Rhubarb.	Sulphuric Acid.	Nitric Acid.	Muriatic Acid.	Oxymuriatic Acid.	Solution of Potassa.	Solution of Subcarbonate of Potassa.	Lime-water.	Muriate of Barytes.	Silicated Potassa.
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.

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These tables 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. Besides these components, M. Henry found a *fixed oil* soluble in ether and alcohol, an amylaceous matter, supermalate of lime, sulphate of lime, and a salt with a base of potassa.[1] But the purgative principle is still unascertained, although it appears to be combined with the extractive, and hence is soluble in water.[2]

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 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 diarrhœa, as it evacuates any acrid matter that may be offending the bowels, before it acts as an astringent. Externally it has been applied by friction to produce its purgative effects[3], and its powder is sometimes sprinkled over ulcers to assist their granulation and healing. It colours the urine in the space of twenty minutes after it is taken; and may be detected by the aid of an alkali. It disappears after an hour or two, but re-appears, owing to a second absorption from the colon.[4] Bradner Staart also affirms that it can be detected in the urine after using a bath impregnated with it.

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 ℈j. 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. D. *Vinum Rhei*, E. *Tinctura Rhei*. L. E. *Tinctura Rhei composita*, L. D. *Tinctura Rhei et Aloes*, E. *Tinctura Rhei et Gentianæ*, E. *Pilulæ Rhei compositæ*, E.

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[1] *Journal de Pharm.* tom. iv.

[2] M. Najni, of Milan, imagines he has discovered a new alkali in rhubarb. See Account of the Experiments in *Brande's Journ.* No. 32. p. 172.

[3] *Nouveaux Elem. de Thérap. par Alibert*, tome ii. p. 247. [4] Sir E. Home.

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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.

Officinal. RHODODENDRI CHRYSANTHI FOLIA, *Edin.* The leaves of Rhododendron.

Syn. Rosage (*F.*), Gelber Alpbalsam (*G.*), Rhododendro Aureo (*I.*), Sabina (*Russ.*), Kaschkara (*Koibal*), Schei (*Tartar*).

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 grey 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 violent symptoms of intoxication. Both the plant and its effects were first described[1] by Gmelin 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 that 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.

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1 *Flora Sibirica*, iv. 121.

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It is given in the form of decoction, made by boiling ℥iv. of the leaves in f℥x. of water in a close vessel, over a slow fire for twelve hours. The dose of the strained liquor is from f℥j. to f℥ij. 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.

Officinal. TOXICODENDRI FOLIA, *Lond.* RHOIS TOXICODENDRI FOLIA, *Edin. Dub.* Sumach leaves.

Syn. Toxicodendron, Herbe à la Puce (*F.*), Giftsumach (*G.*), Vergiftboom (*Dutch*), Rus Tossicodendre (*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, subacrid 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 gelatin. Hence it con-

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[1] Ῥοῦς 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, into which his brother, who was very susceptible of the poison of this species of rhus, plunging his arm, the skin was quickly inflamed and blistered. *Actes de la Soc. de Méd. 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.

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tains gum, resin, gallic acid, and tannin; but a narcotic principle is also present, on which its effects principally depend.

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. ss., 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* none. *Stamens* numerous.

——— *Female. Calyx* three-parted. *Corolla* none. *Styles* three, bifid. *Capsule* three-celled. *Seed* one.

* *With palmated leaves.*

Sp. 1. R. *communis.*[1] Common Ricinus or Palma Christi. *Med. Bot. 2d edit. 625. t. 221. Rheede, Hort. Malab.* ii. 57. *t.* 32.

Officinal. RICINI SEMINA ET OLEUM, *Lond.* RICINI COMMUNIS SEMINA; ET OLEUM FIXUM, *Edin.* RICINUS; OLEUM E SEMINIBUS, *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, Rizinusöhl (*G.*), I semi e l'olio di Ricino (*I.*), Palmoel, Ricinsoel (*S.*), Erundatylum (*San.*), Duhnul Kirwa (*Arab.*), Sittāmoonāka unnay (*Tam.*), Endooroo tail (*Cyng.*), Rowgen Bedangur (*Pers.*), Miniak jarak (*Malay*), Linga jarak (*Jav.*).

This species of ricinus is an annual plant, a native of Greece[2], Asia, Hindostan, the East and West Indies, South America, and Africa.[3] It is also abundant on the rock of Gibraltar. It is of very quick growth, and sometimes attains to the height of sixteen feet.[4] 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 subpel-

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[1] Κικι Dioscoridis.

[2] At Pamisus, in the Morea, where it grows in great abundance, it is called agra staphylia, or wild vine, from the resemblance of its leaves to those of the vine. *Gell's Journ. in the Morea*, p. 193. In the Bosphorus it is called Kroton, from the resemblance of the seeds to the tick insect which fastens on dogs' ears. *Hort. Trans.* vol. vi.

[3] It was first cultivated in Britain in 1562. It thrives in the South of France.

[4] 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.

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tate, large, deeply divided into seven pointed, serrated lobes, and of a bluish green colour: the calyx of the *male* flower is composed of five oval, pointed, purplish segments, enclosing 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 colour.

The oil, which is more frequently used than the seeds, is obtained 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; as the oil is less 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 by expression is equal to one fourth of the weight of the seeds employed. The acrid principle is contained in the cotyledons, and in the embryon, but not in the testa. It is of a volatile nature. It is often adulterated with olive oil, linseed oil, and poppy oil, which, however, may be readily detected by adding an equal quantity of *alcohol* sp. gr. 820 to any given quantity of the suspected oil: if it be pure, a uniform solution will take place, which will not happen should it be adulterated; and the same will be the case, if a weaker spirit be employed, with the addition of camphor.

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. MM. Busy and Lecanu have obtained three distinct acids from it: the *ricinic*, fusible at 72° Fahr.; the *elaiodic*, fluid below 32° Fahr.; and the *margaritic*, not fusible below 264° Fahr., and crystallizable. It has all the chemical characters of the other expressed oils, except that it is heavier, and saponifies more readily with solutions of potassa or of soda; and ricinates, elaiodates, margaritates, and glycerin are formed. It is very soluble in alcohol, and also in sulphuric ether. Mr. Brande says, that it sometimes undergoes such a change in the bowels

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that it passes off "in round and indurated nodules."[1] But such a circumstance has never come within our knowledge.

Medical properties and uses.—The seeds are drastic cathartics, but are scarcely ever ordered. The oil is mildly purgative, operating very quickly[2], 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 pictonum (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 fʒiv. to f℥jss., 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 cinnamon or mint 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.

ROCCELLA TINCTORIA. Vide *Lichen.*

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 edit.* 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 edit.* 493. *t.* 177. *Smith, Flora Brit.* ii. 540. *Gærtner*, i. 347. *t.* 73.

1. ROSA CENTIFOLIA.[3]

Officinal. ROSÆ CENTIFOLIÆ PETALA, *Lond. Edin. Dub.* The petals of the Hundred-leaved Rose.

Syn. Pétales de Rose à cent feuilles (*F.*), Blumen der Blassen Rose (*G.*), Rosa de Alexandria (*S.*), Rozen (*Dutch*), Rosa (*Russ.*), Wurd (*Arab.*), Gooläbupoo (*Tam.*), Tu Miuhoa (*Chin.*), Gul (*Pers.*), Mawar (*Malay*), Sewooanda mull (*Cyng.*), Goolat (*H.*).

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 the

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[1] *Manuel*, p. 150.

[2] The bark of the root of the tree is a powerful purgative.

[3] Ῥωδωνια Theophrasti.

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assertion of Herodotus that it grows wild in Macedon; and that of Loureiro that it is a native of China. Professor Ran has lately informed us, that it is indigenous in northern Persia.[1] In the Dublin Pharmacopœia it is improperly confounded with the damask rose, which is altogether a different species.[2] 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[3]; 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.

Officinal preparations. *Aqua Rosæ*, L. E. D. *Syrupus Rosæ*, L. E.

2. ROSA GALLICA.

Officinal. ROSÆ GALLICÆ PETALA, *Lond. Edin. Dub.* The petals of the Red Rose.

Syn. Fleurs des Roses rouges (*F.*), Essig-rosen (*G.*), Fransche rozen (*Dutch*), Aettikerosor (*Swed.*), Rosa domestica (*I.*), Rosa rubra ò Castillara (*S.*), Rosa Vermelha (*Port.*).

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. 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

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[1] *Enumeratio Rosarum circa Wirceburgam*, 1816.

[2] See *Hort. Kew.*, *Willdenow*, *&c.* Gerarde cultivated this species in 1596.

[3] Illustres mulier mihi asserebat, ex rosarum olfactu se fœcum alvinarum odorem percipere. *Plenck*, *Icones*, *&c. cent.* iv.

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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 potassa, and other neutral salts, in hæmorrhages, and many other diseases. (See the Preparations of it.)

Officinal preparations. *Confectio Rosæ*, L. E. D. *Infusum Rosæ*, L. E. D. *Mel Rosæ*, L. D. *Syrupus Rosæ*, E.

3. ROSA CANINA.[1]

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

Syn. Le fruit d'Eglantier de Chien (*F.*), Die frucht der Wilden rose Hagebutten (*G.*), Le 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 pubescent, prickly, and glandular. The floral peduncles generally form a kind of corymb; but are sometimes solitary and smooth. The calyx is pubescent within, 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

[1] Κυνοσβατον Dioscoridis. *Handsrose* (G.), *Hondsroos* (Dutch), *Hybentorn* (Dan.), *Niupon* (Swed.), *Rosa Silvestre* (S.), *Rosa brava* (Port.), *Schippownich* (Russ.), *Shora polna* (Pol.), *Gul* (Tartar.), *Foo son* (Japan.).

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cooling, but possesses no direct medicinal properties. It is used only for the formation of the confection.[1]

Officinal preparation. *Confectio Rosæ caninæ*, L.

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

Cl. 2. *Ord.* 1. Diandria Monogynia. *Nat. ord.* Verticillatæ, *Linn.* Labiatæ, *Juss.*

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

Species 1. R. *officinalis.*[2] Officinal Rosemary. *Med. Bot. 2d edit.* 329. *Sibthorp, Flora Græca, t.* 14.

Officinal. ROSMARINI CACUMINA, *Lond.* ROSMARINI OFFICINALIS CACUMINA, *Edin. Dub.* Rosemary tops.

Syn. Romarin (*F.*), Rosmarin (*G., Dutch, Dan., Swed.*), Romarino (*I.*), Romero (*S.*), Rosmaninho, Alcerim (*Port.*), Klil (*Arab.*), Yong tsao (*Chin.*).

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.

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[1] The confection is sometimes brought to table as a sweetmeat on the Continent; and the leaves of the plant are drank by the Tartars and the Russians in Siberia instead of tea. The Russians of the Volga prepare a spirit from the flowers. *Lin. Trans.* vol. xii. part i. p. 227.

[2] Διβανωτις Dioscoridis.

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Medical properties and uses. — Rosemary is stimulant, and, according to some, emmenagogue.[1] It has been given in the form of infusion in nervous headache, hysteria, and chlorosis; but it is now scarcely ever prescribed, unless as an odorous adjunct to sternutatory powders. The dose in substance may be from grs. x. to ℈ij.; and from ʒj. to ʒiss. in infusion.

Officinal preparations. *Oleum Rosmarini*, L. E. D. *Spiritus Rosmarini*, L. E. D.

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

Cl. 1. *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*.[2] Dyers' Madder. *Med. Bot.* 2*d edit.* 173. *t.* 67.

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

Syn. Garance (*F.*), Krappwurzel, Færberrothe (*G.*), Mee (*Dutch*), Krap (*Dan.*, *Swed.*), Radiche di Robbia o Garanza (*I.*), Rudia (*S.*), Ruida (*Port.*), Munjith (*H.*), Manjttittie (*Tam.*), Marzana (*Pol.*), Mariona (*Russ.*), Kermesa Buja (*Turk.*).

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.[3] 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

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[1] *Bergius Mat. Med. à Regno Veget.* p. 21. [2] Ερευθοδανον Dioscoridis.

[3] 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.

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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 threshed 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 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 no 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 ℈j., united with sulphate of potassa, and given three or four times a day.

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

Cl. 6. *Ord.* 2. Hexandria Digynia. *Nat. ord.* Holoraceæ, *Linn.* Polygoneæ, *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 declinous flowers.*

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[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.

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

1. RUMEX AQUATICUS.[1]

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

Syn. La Patience aquatique (*F.*), Wasser Ampfer (*G.*), Waterpatich (*Dutch*), Rabaca major (*Port.*), Wodanoi Schawel (*Russ.*), Kong-ŏ-lĭk (*Esquimaux*).

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 obcordate 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. It is now scarcely ever employed, although it undoubtedly possesses considerable powers in scurvy. Linnæus, in a letter to Dr. Lind, describing the scurvy of the Laplanders, asserts, that it is the only remedy which proved efficacious in that disease when "the ulcers are healed, and the patient is attacked with asthma."[2] I have ascertained that a decoction of one ounce of the sliced root of the common dock, rumex *patientia*, in a pint of water, is extremely efficacious in obstinate ichthyosis. In a full dose, about two ounces of the decoction, it purges freely; but at the same time improves the tone of the stomach.

2. RUMEX ACETOSA.

Officinal. ACETOSÆ FOLIA, *Lond.* RUMICIS ACETOSÆ FOLIA, *Edin.* Common Sorrel leaves.

Syn. Oseille ordinaire (*F.*), Sauer Ampfer (*G.*), Veldznuring (*Belg.*), Suramper (*Dan.*), Angsyra (*Swed.*), Szszaw (*Polish*), Acetosa (*I.*), Azedera (*S.*), Azedas (*Portug.*).

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 diœcious, in branched panicles, and arranged in half whorls: the calyx and corolla small: the stamens very short, bearing large, yellow

[1] Βρεταννικὴ ἢ βεττονικη Dioscoridis.

[2] *Correspondence of Linnæus*, vol. ii. p. 476.

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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 potassa, 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; and Dr. Clarke mentions that the natives of *Wermeland*, on the confines of Sweden, make it into bread in seasons of scarcity, and that it is not unsalutary.[1]

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.

Species 1. R. *graveolens.*[2] Common Rue. *Med. Bot. 2d edit.* 437. *t.* 174.

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

Syn. Ruë sauvage (*F.*), Raute, Garten raute (*G.*), Ruite (*Dutch*), Rude (*Dan.*), Winruta (*Swed.*), Ruta (*I.*), Ruta de derpesado (*S.*), Ruda (*Port.*), Ruda (*Russ.*), Arooda (*Tam.*, *Cyng.*), Sadsah (*Malay*), Inghoo (*Jav.*), Sendib (*Arab.*), Saturi (*H.*), Inghoo (*Javanese*).

Rue is an evergreen perennial, a native of the south of Europe, but much cultivated in our gardens, flowering in June 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, grey 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 bluish 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.[3] The germen is large,

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1 *Travels, &c.* Part iii. p. 90. 4to. Lond. 1823.

2 Ῥυτη-Πηλανον Dioscoridis.

3 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

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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.[1] 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. It may, however, inflame the mucous coat of the intestines, and therefore should be used with caution. The dose of the powdered leaves is from grs. xv. to ℈ij., given twice or three times a day.

Officinal 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, involucred, with a long lanugo. *Corolla* two-valved.

Species 4. *S. officinarum.*[2] Common Sugar-cane. *Sloane's Jamaica*, i. 101. *t.* 66. *Phil. Trans.* lxix. 207—278. *t.* 3.

Officinal. SACCHARUM. SACCHARUM PURIFICATUM, *Lond.* SACCHARUM, a. *non purificatum*; b. *purificatum*; c. *syrupus empyreumaticus, Edin.* SACCHARUM PURIFICATUM; SACCHARUM NON PURIFICATUM, EJUSDEMQUE SYRUPUS EMPYREUMATICUS (Molasses), *Dub.* Unrefined Sugar. Refined Sugar. Molasses.

Syn. Sucre, Sucre-pur (*F.*), Zucker, Weisser Zucker (*G.*), Suiker (*Dutch*), Sukker (*Dan.*), Socker (*Swed.*), Zucchero brutto, Zucchero in pane, Melassa (*I.*), Azucar, Atriaca (*S.*), Assucar (*Port.*), Shukhir (*Arab.*), Chenee (*H.*), Sakkari (*San.*), Sakkarei (*Tam.*), Shukker (*Pers.*), Soola (*Malay*).

The common sugar-cane is a native of both the East and West Indies. It is cultivated in Persia, and very abundantly in the West Indies. There are two varieties of the officinal sugar-canes: the Creole and the Otaheite. They are distin-

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.

[1] *De Morbis Mulier.*

[2] Cannamelle (*F.*), Zuckerrohr (*G.*), Suikerriet (*Dutch*), Cannamele (*I.*), Cana de azucar (*S.*), Quasab (*Arab.*), Can che (*Chin.*).

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