Its magnitude and shape are those of a moderate-sized pear.[1] It is of a yellow colour, downy, umbilicated; and, when ripe, has a pleasant odour and a very austere, acidulous taste[2]: each of its cells contains from eight to fourteen ovate, angled, reddish-brown, coriaceous seeds, placed erect in pairs.

*Qualities.*—The seeds are inodorous, and nearly insipid, having a slight bitterness only when long chewed. The inner coat contains a very considerable quantity of mucus, which can be extracted by hot water: but is not quite pure mucus, being mixed with fecula and the other soluble parts of the seeds. It contains also gallic and malic acid. For its qualities and medicinal use, see *Decoctum Cydoniæ* among the Preparations.

QUASSIA.[3] *Spec. Plant. Willd.* ii. 567.

*Cl.* 10. *Ord.* 1. Decandria Monogynia. *Nat. ord.* Gruinales, *Linn.* Magnoliæ, *Juss.*

*G.* 849. *Calyx* five-leaved. *Petals* five. *Nectary* five-leaved. *Drupes* five, distant, bivalve, inserted into a fleshy receptacle.

*Species* 2. Q. *Simaruba.* Simaruba Quassia. *Med. Bot. 2d edit.* 569. *t.* 203. *Trans. of the Royal Society of Edin.* ii. 73—81.

*Species* 3. Q. *excelsa.* Lofty Quassia. *Trans. of the Royal Society of Edin.* iii. 205—210. *t.* 6.

1. QUASSIA SIMARUBA.

*Officinal.* SIMARUBÆ CORTEX, *Lond.* QUASSIÆ SIMARUBÆ CORTEX, *Edin.* SIMARUBA; CORTEX, LIGNUM, *Dub.* Simaruba Bark and Wood.

*Syn.* Ecorce de Simarouba (*F.*), Simarubenrinde (*G.*), Corteccia de Simaruba (*I.*).

The Simaruba Quassia, or mountain Damson, as it is called in Jamaica, is a native of South America, Carolina, and the West India islands, growing in sandy places. It is a tall tree with alternate branches, and a smooth, grey bark, maculated with yellow spots. The leaves are pinnate, consisting of from two to nine leaflets placed alternately on short petioles, elliptical, acute, smooth, and of a deep-green colour above, and whitish beneath: the flowers are male and female on the same axillary panicles: the calyx in both is monophyllous and five-toothed: the petals lanceolate, yellowish, white, and inserted into the calyx: the nectary in the male is a small scale affixed to the inner part of the base of each filament; and the same

[1] The Quince-tree varies in the form of its fruit, which is sometimes globular, sometimes oblong, but more generally pyriform; and, also, in the magnitude of its leaves.

[2] Although the fruit of the quince is not good in its raw state, yet it affords an elegant sweetmeat, called Quince Marmalade, *Mira Cydoniarum:* and from the expressed juice an excellent and wholesome wine is prepared.

[3] Named after Quassia, a negro slave, who discovered to Rolander the wood of the Quassia excelsa, which he had employed with success as a secret remedy in the malignant endemic fevers of Surinam. The genus is placed in the class *Decandria*, because the Quassia *amara*, from which the generic description is taken, has hermaphrodite flowers.



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in the female, except that the scales are placed in a regular circle; the filaments in the male are the length of the corolla; and in the female are five connate germens, with five striated styles and spreading stigmas; the fruit, according to Gærtner, consists of five smooth, ovate, black, one-celled berries, on a common receptacle: and opening spontaneously when ripe.[1]

The officinal part of this tree is the bark of the root; and although the wood is designated by the Dublin College, yet it is quite inert. The bark is imported in long pieces, a few inches in breadth, and folded lengthwise. It comes generally from Jamaica packed in bales.

*Qualities.* — Simaruba bark is inodorous, and has a bitter, but not disagreeable taste. The pieces are of a very fibrous texture, rough, scaly, warty, and of a full-yellow colour in the inside when fresh. Alcohol, Wine, and also Water take up all its active matter by simple maceration, at a temperature of 60° Fahrenheit, better than at a boiling heat. The infusion is stronger in taste than the decoction, which grows turbid and of a reddish brown colour as it cools. The infusion is not affected by sulphate of iron, and scarcely by muriate of tin. M. Morin and Rouen have analysed Simaruba and found in it resin, a volatile oil having the odour of Benzoin, malic and gallic acids, an ammoniacal salt, acetate of potass, malate and oxalate of lime, oxide of iron, alumen and a peculiar bitter principle which they have named *quassine.*[2]

*Medical properties and uses.* — This bark is tonic; and has been employed with advantage in intermittent fever, obstinate diarrhœa, dysentery and dyspeptic affections. It was first introduced at Paris in 1713 as a powerful remedy in dysentery; but its effects in this disease were previously known to the natives of Guiana, whence it was brought to France. Simaruba bark, however, was little known in this country till Dr. Wright's paper on it appeared in the Edinburgh Transactions. It cannot with propriety be used in the commencement of dysentery; but after the fever has abated, when the tenesmus continues with a weak, sinking state of the pulse, it allays this symptom and griping, promotes the secretion of urine, determines to the surface, and restores the tone of the intestines. It has also been highly commended as a remedy in fluor albus; but notwithstanding the high character which it acquired, Simaruba is not much employed by the British practitioner. It may be combined with aromatics and opium.

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[1] Owing to this circumstance, Gærtner allows that the pericarp is something between a berry and a capsule. It is certainly not a drupe, although mentioned as such in the generic character by Willdenow.

[2] *Journal de Pharmacie. Fevrier*, 1822.

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The dose in substance is from ℈j. to ʒss.; but it is more frequently and commodiously given in the form of infusion.

Officinal preparation. *Infusum Simarubæ*, L.

2. QUASSIA EXCELSA.

*Officinal.* QUASSIÆ LIGNUM [1], *Lond. Edin. Dub.* The wood of Quassia.

*Syn.* Bois du Quassie (*F.*), Quassienholz (*G.*), Legno della Quassia (*I.*), Leno de Quassia (*S.*), Pao de Quassia (*Port.*).

This species of Quassia grows in the natural woods of Surinam, Jamaica, and the Caribbean islands, where it is called the bitter ash; and flowers in October and November. It is a beautiful tall tree, rising sometimes one hundred feet in height, with a straight, smooth, tapering trunk, often ten feet in circumference near the base; and covered with a smooth grey bark. The leaves are pinnate, consisting of from five to eight opposite pairs of leaflets, with a terminal leaflet: they are oblong and pointed; the ribs reddish; and the young leaves are covered with a fine brown down: the flowers are in clusters from the lower part of the last shoot before the leaves; they are small, of a yellowish-green colour, with a very small calyx: the male flowers are nearly similar to the hermaphrodite, except that they have the rudiments only of a style; the fruit is a small black drupe, round, the size of a pea, and attached in threes, sideways, to a round fleshy receptacle. It is ripe in December, and is not bitter. [2] The wood is sent to this country in billets, and is reduced to chips, or rasped by the druggists. [3]

*Qualities.* — Quassia wood is inodorous, and has an intensely bitter taste; it is of a pale yellow colour. Alcohol and water take up its bitterness, and when evaporated to dryness, leave a brownish-yellow, somewhat transparent, brittle extract, which has been regarded as a vegetable constituent *sui generis*, and named *quassine*, or the bitter principle. [4] I am inclined to believe that this principle, although not itself of a resinous nature, is connected with resin, as ether takes it up, and the tincture, when evaporated on water, which becomes intensely bitter, leaves an insoluble pellicle that has the character of a resin. The infusion is rendered muddy by nitrate of silver, a soft, flaky, yellow precipitate being formed; and acetate of

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[1] The officinal Quassia was long erroneously supposed to be the wood of the Quassia *amara*, which is a very rare tree, and excels all the others in bitterness.

[2] *Edin. Phil. Trans.* iii. 207.

[3] It is asserted, that of late years the brewers have used Quassia wood instead of hops. Beer made with it certainly does not keep, but soon becomes muddy, flat, has a mawkish taste, and runs into the acetous fermentation. Mr. Brand says, an infusion of Quassia sweetened with brown sugar is an effectual poison for flies. *Manuel*, p. 146.

[4] *Thomson's Chemistry*, 4th edit. v. 32.

lead occasions a copious white precipitate: thence, these salts are incompatible in formulæ with it: but it is not affected by tartarized antimony, sulphate of iron or gelatin.

*Medical properties and uses.* — Quassia is tonic. It has been found efficacious in dyspepsia and nervous irritability; intermittent and bilious remittent fevers, chlorosis, diarrhœa; and, when combined with cretaceous powder and ginger, in atonic gout. It does not sensibly quicken the circulation nor augment the animal heat. We have given it, combined with nitric acid, with evident benefit in typhus, gout, and also in fluor albus. Infusion is the best form of administering Quassia; the raspings, for it cannot be properly pulverized, being too bulky: but it may, nevertheless, be given in substance in doses of from grs. x. to ʒj. three or four times a day.

Officinal preparations. *Infusum Quassiæ*, L. *Tinctura Quassiæ excelsæ*, E. D.

QUERCUS. *Spec. Plant. Willd.* iv. 423.

*Cl.* 21. *Ord.* 6. Moncœcia Polyandria. *Nat. ord.* Amentaceæ. *G.* 1692. *Male. Calyx* commonly five-cleft. *Corolla* none. *Stamens* five to ten.

———. *Female. Calyx* one-leafed, entire, rough. *Corolla* none. *Styles* two to five. *Nut* coriaceous, surrounded at the base by the persistent calyx.

** *With toothed leaves.*

*Species* 33. Q. *infectoria*. Dyers' Oak. *Olivier's Travels* (*translation*), ii. 41. *t.* 14, 15.

***** *With sinuated leaves and beardless lobes.*

*Species* 65. Q. *pedunculata*. Common White Oak. *Med. Bot. 2d edit.* 23. *t.* 10. *Michaux, North American Sylva*, vol. i. pl. 2. (Q. *Robur.*) *Smith, Flor. Brit.* 1026. *Michaux*, b. c.

1. QUERCUS INFECTORIA. (*Quercus Cerris*, Edin.)

*Officinal.* GALLÆ, *Lond. Edin.* GALLÆ, *Dub.* The Gall.

*Syn.* Noix de Galles (*F.*), Gallapfel (*G.*), Galnoot (*Dutch*), Galdaebel (*Dan.*), Gallaple (*Swed.*), Galla (*I.*), Agalla de Levante (*S.*), Galha (*Port.*), Galdæble (*Dan.*), Maju P'hal (*H.* and *San.*), Makakai (*Tam.*), Afis (*Arab.*), Mazu (*Pers.*).

The London and Dublin Colleges have not named any particular species of oak as furnishing the Gall; the Edinburgh College has particularized the Cerris: but although it, as well as most of the other species of quercus, may produce galls, yet it is not the species from which the galls of commerce are obtained. Olivier has distinctly pointed out, from his personal knowledge, the species above named as the real tree: and as we know no reason for doubting his veracity, we shall copy his description of it.

The *Quercus infectoria* is scattered throughout all Asia Minor, from the Bosphorus as far as Syria, and from the coasts of the Archipelago as far as the frontiers of Persia. It has a crooked stem, seldom exceeds six feet in height, and more

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frequently assumes the character of a shrub than that of a tree. The leaves, which are deciduous in autumn, are on short petioles, smooth, of a bright-green colour on both sides, and obtusely toothed: the acorn is elongated, smooth, two or three times longer than the cup, which is sessile, in a slight degree downy, and scaly: the gall comes at the shoots of the young boughs, and acquires from four to twelve lines in diameter: the insect which produces it is the *Cynips quercusfolii* of Linnæus, (*Diplolepsis gallæ tinctoriæ* of Geoffroy,) a small hymenopterous insect or fly, with a fawn-coloured body, dark antennæ, and the upper part of the abdomen of a shining brown. The insect punctures the tender shoot with its sting, which is spiral, and deposits its egg in the puncture. This occasions a morbid irritation in the vessels of the part; the gall rises in a few hours and attains its full size in a day or two, before the larva is hatched: the egg grows with the gall; and it is the irritation which it keeps up, not as has been supposed by the maggot feeding on the juices of the plant, that the morbid excitement is maintained in the vessels of the part, sufficient for the production of this kind of vegetable wen.

Galls are gathered before the larva within them changes to a fly, and eats its way out; for, when this has happened, the galls become lighter, and contain less of the astringent principle. The first galls that are picked are named *yerli* by the natives, and are known in trade by the terms *black* or *blue galls*, and *green galls*. Those which are gathered afterwards, from the circumstance of their being pierced, are of an inferior quality, and are denominated *white galls*. The best galls are those of Aleppo, Smyrna, Magnesia, Karahisser, Diarbekir, and the interior of Natolia. Those which are brought to this country, come chiefly from Aleppo in bags and cases.

*Qualities.* — Galls are inodorous, and have a bitter, very astringent taste. They are nearly round, of different magnitudes, from the size of a pea to that of a hazel-nut; smooth on the surface, yet studded with tuberosities; and, when good, of a blackish-blue, or deep olive colour: a white or a red hue indicates an inferior quality.[1] They are heavy, brittle, break with a flinty fracture, and display a compact, striated texture. The whole of their soluble matter is taken up by about forty times their weight of boiling water, and what remains is tasteless. Alcohol, digested on powdered galls, takes up seven

[1] This is the character of the galls from which the insect has escaped, and which are also of a brighter colour. Another species of gall, produced by another species of the insect, is also, Olivier says, found on the same oak. It is spongy, very light, of a brown-red colour, covered with a resinous coat, and furnished with a circular row of tubercles placed nearly towards the most protuberant part. Their astringency is very inferior, and they are used only to adulterate the better sort.

parts in ten, and ether five parts. The watery infusion reddens tincture of litmus, and forms precipitates with solution of isinglass, the infusions of Cinchona bark, Cusparia bark, and Columba root; but not with infusion of Quassia. Sulphuric acid throws down a yellowish curdy, muriatic acid, and a flaky, whitish precipitate; while nitric acid changes the colour only of the infusion, first to a deep orange, and afterwards to a paler orange-yellow. The solution of ammonia occasions no precipitate, but deepens the colour: the carbonate, however, produces a precipitate. Carbonate of potass throws down a yellowish, flaky precipitate, and extricates ammonia; and lime-water a copious, deep-green precipitate. Precipitates also are formed with solutions of the following metallic salts: with acetate and superacetate of lead, greyish; with tartarized antimony, yellowish; with sulphate of copper, brown; with sulphate of iron, blueish-black; with sulphate of zinc, reddish-black, but very slowly formed; with nitrate of silver, deep olive; and with nitrate of mercury, bright yellow. The muriate of mercury renders the infusion milky and opaque, but no precipitate is formed. The alcoholic tincture reddens litmus, and is affected by the same re-agents as the watery infusion. The ethereal tincture, when evaporated on water, leaves on the side of the glass an opaque pellicle, and on the surface of the water small drops of an oily, resinous-like matter, while the substratum of water becomes charged with tannin and gallic acid. The pellicle and resinous-like matter is plastic, tenacious, resembling bird-lime treated with ether; and when subjected to heat, melts, swells, burns, and leaves a dense, black charcoal. These experiments show results which cannot altogether depend on the presence of tannin, gallic acid, extractive, or mucilage, which are supposed to be the constituents of galls. In Sir H. Davy's experiments, 500 grains of Aleppo galls yielded to pure water, by lixiviation, 185 grains of solid matter, of which 130 were tannin, 31 gallic acid and extractive, 12 mucilage and matter rendered insoluble by the evaporation, and 12 saline and earthy matter. From different experiments, the proportion of extractive, however, if any, is very small: none appears in the evaporation of the ethereal tincture; and Dr. Bostock's experiments render the existence of mucilage very doubtful. From the experiments of Professor Branchi, it appears that galls also yield, by distillation with water, a concrete, volatile oil[1]: and M. Braconnot has discovered in them a new acid, which he has rather affectedly termed *ellagic*, from the word *galle* reversed![2] It is an insipid, inodorous, white

[1] *Phil. Mag.* vol. .p. 401. [2] *Ann. de Chim. et Phys.* ix. p. 187.

powder, with a slight tinge of red, and insoluble in boiling water. When mixed with nitric acid, and very gently heated, the mixture acquires a reddish tint, gradually passing to a deep blood-red. Hence we may conclude, that the constituents of galls, besides tannin and gallic acid, are the above oil and ellagic acid.

*Medical properties and uses.* — Galls are the most powerful of the vegetable astringents. They are seldom used as an internal remedy, although, in combination with bitters or aromatics, they have been given in obstinate diarrhœas, passive intestinal hæmorrhages, and intermittents. They are frequently ordered in the form of gargles and injections; and an ointment formed of galls in fine powder, with eight parts of simple ointment, and a small proportion of powdered opium, is a useful application to blind piles. For internal exhibition, the dose of galls may be from grs. x. to ℈j., which may be given twice or thrice a day.

Officinal preparation. *Tinctura Gallarum*, E. D.

2. QUERCUS PEDUNCULATA.[1]

*Officinal.* QUERCUS CORTEX, *Lond.* QUERCUS ROBORIS CORTEX, *Edin. Dub.* Oak Bark.

*Syn.* Ecorce de la Chene commune (*F.*), Eichenrinde (*G.*), Corteccia della Quercia (*I.*).

This species of Oak is indigenous: but it is found also all over Europe, in the north of Asia, and the northern extremity of Africa. It is a well-known beautiful tree, often rising to the height of 90 or 100 feet, and attaining a great degree of thickness in the trunk, which is covered with a rough, brown bark. The leaves are alternate, supported on short petioles, ovate-oblong, deeply sinuated, forming obtuse lobes: deep green, smooth, and shining on the upper surface; paler, and nearly glaucous underneath: the flowers are in axillary catkins; the male lax, pendulous, many-flowered, and yellow; the female longer, peduncled, and only three-flowered: the calyx of the male flower is membranous, bell-shaped, often five-cleft; while that of the female is coriaceous, scaly, downy, and becoming hemispherical, entire and woody: the stamens are ten, longer than the calyx: the germen is ovate, crowned with a short cylindrical style and three stigmas: the fruit is an elliptical, coriaceous, smooth nut, fixed in the calyx as in a shallow cup, but at length dropping from it. The peduncles of the fruit, which are from two to three inches long, distinguish it from the Q. Robur, the fruit of which is sessile. It ripens its acorns in October.

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[1] Δρυς Græcorum, *Eiche* (G.), *Eik* (Dutch), *Eeg* (Dan.), *Ek* (Swed.), *Darach* (Galic.), *Le Chene* (F.), *Quercia* (I.), *Roble* (S. Port.), *Dub* (Russ.), *Mesche* (Turk.), *Baalut* (Arab.), *Tamma* (Finnl.), *Pelut* (Pers.).

Almost every part of the oak is astringent, but the bark 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.

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.*

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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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