which it is chiefly valued, rarely comes to perfection. This fruit has the general qualities of the other sweet summer fruits, allaying heat, quenching thirst, and gently loosening the belly. The rind is a strong astringent, striking a permanent blue with sulphate of iron, and as such is occasionally made use of. It has been lately given by Dr Buchanan with success in the East Indies for the cure of taenia. I also made some trials of it and of catechu in this country, on the supposition that it was the astringent principle which acted chemically on the gelatinous body of the worm, and the result was promising; but the introduction of the oil of turpentine prevented me from prosecuting the experiment. The flowers are of an elegant red colour, in appearance resembling a dried red rose. Their taste is bitterish and astringent. They are recommended in diarrhœas, dysenteries, and other cases where astringent medicines are proper.

PYRUS CYDONIA. *Lond.*
Willd. g. 992, *sp.* 17. *Icosandria Pentagynia.*—Nat. ord. *Pomaceæ.*

Off.—Quince seeds.
CYDONIÆ SEMINA. *Lond.*

THE quince is originally a native of Crete, but ripens its fruit perfectly in England.

Quinces have a very austere acid taste: taken in small quantity, they are supposed to restrain vomiting and alvine fluxes; and more liberally, to loosen the belly. The seeds abound with a mucilaginous substance, of no particular taste, which they readily impart to watery liquors; an ounce will render three pints of water thick and ropy, like the white of an egg. They will not, however, supply the place of gum arabic, because their mucilage spoils very quickly, and is precipitated by acids.

QUASSIA.
Willd. g. 849. *Decandria Monogynia.*—Nat. ord. *Gruinales.*

Sp. 2. QUASSIA SIMARUBA. *Ed. Lond. Dub.*
Mountain or bitter damson.

Officinal.—The bark and wood.
a) CORTEX QUASSIÆ SIMARUBÆ. *Ed.*
SIMAROUBÆ CORTEX. *Lond. Dub.*
b) SIMAROUBÆ LIGNUM. *Dub.*

THIS tree grows in Guiana and in Jamaica. The simarouba of the shops is the bark of the root. It is brought to

us in pieces some feet long, and some inches broad, folded lengthwise. It is light, fibrous, very tough; of a pale yellow on the inside; darker coloured, rough, scaly, and warted on the outside; has little smell, and a bitter, not disagreeable taste. It gives out its bitterness both to alcohol and water.

Medical use.—It has been much celebrated in obstinate diarrhœa, dysentery, anorexia, indigestion, lienteria, and intermittent fevers.

It is given in powder, in doses of half a drachm, or a whole drachm; but it is too bulky, and very difficultly pulverizable. It is best exhibited in decoction. Two drachms of the bark may be boiled in two pounds of water to one, and the decoction drunk in cupfuls in the course of the day.

Sp. 3. QUASSIA EXCELSA. *Ed. Lond. Dub.*
Quassia tree.

Officinal.—The wood.
LIGNUM QUASSIÆ EXCELSÆ. *Ed.*
QUASSIÆ LIGNUM. *Lond. Dub.*

THE quassia of the shops is the wood of the root of this tree, which grows in Jamaica, and in the Caribæan islands, and not, as formerly supposed, of the Quassia amara, which is a very rare tree, surpassing all others in bitterness.

This root is about the thickness of a man's arm; its wood is whitish, becoming yellowish by exposure to the air. It has a thin, grey, fissured, brittle bark, which is deemed, in Surinam, more powerful than the wood. Quassia has no sensible odour, but is one of the most intense, and durable, pure bitters known. Its infusion, decoction, and tincture, are almost equally bitter, are yellowish, and are not blackened by chalybeates. The properties of the extract of quassia have been detailed by Dr Thomson, under the title of the bitter principle.

Medical use.—It is a very pure and simple bitter, and may be given in all cases where bitters are proper. It has been exhibited in intermittent and bilious fevers, in stomachic complaints, in lienteria, in cachexy, dropsies, leucorrhœa, and gout. It is much used in this country to give the bitterness to malt liquors, though it subjects those brewers who employ it to a very heavy penalty.

It can scarcely be reduced to a sufficient fine powder to be given in substance, and is, therefore, generally given in the form of infusion, decoction, or extract.

QUERCUS.
Willd. g. 1692. *Smith, g.* 404. *Monoecia Polyandria.*—Nat. ord. *Amentaceæ.*

Sp. 65. *Willd.* QUERCUS PEDUNCULATA. *Lond.*
Sp. 1. *Smith.* QUERCUS ROBUR. *Dub. Ed.*
Common British oak.

Officinal.—Oak bark.
CORTEX QUERCUS ROBORIS. *Ed.*
QUERCUS CORTEX. *Lond. Dub.*

THE oak grows wild in Britain, and flowers in April. The superior excellence of its wood for ship-building has rendered its cultivation an object of national concern. Its saw-dust is an useful dye-stuff, and its bark is the principal article used in tanning. M. Vauquelin has discovered a remarkable chemical difference between the bark and nut-galls, the latter precipitating tartrate of antimony and infusion of cinchona, which are not acted on by the former.

Med. use.—Oak bark is a strong astringent, and is recommended in hæmorrhagies, alvine fluxes, and other preternatural or immoderate secretions. In these it is sometimes attended with good effects. But it is by no means capable of being employed as a substitute, in every instance, for Peruvian bark, as some have asserted; and, indeed, it is so difficultly reduced to a sufficiently fine powder, that it can scarcely be given internally, in substance.

Sp. QUERCUS CERRIS. *Ed.*
Oriental oak.

Off.—The nest of the cynips quercusfolii, called nut-galls.
Cyniphis nidus, GALLA dictus. *Ed.*
GALLÆ, Cynipidum nidi. *Dub.*
GALLA, Cynipis quercusfolii nidus. *Lond.*

OLIVIER has, in his travels in the Ottoman Empire, given us an accurate botanical description of the oak which produces the gall-nut, and which, he says, was till then unknown to botanists. He calls it *Quercus infectoria*, and characterizes it *foliis ovato oblongis, sinuato dentatis, glaberrimis, deciduis; fructibus sessilibus, longissimis.* It is scattered through all Asia Minor, from the Bosphorus to Syria, and from the shore of the Archipelego to the frontiers of Persia. It has a crooked stem, and seldom reaches the height of six feet. It oftener has the appearance of a shrub than of a little tree. The gall-

nuts come at the shoots of the young boughs, and are produced by the puncture of *diplolepis gallæ tinctoriæ* to deposite an egg. They acquire from four to twelve lines in diameter, and are generally round and covered with tuberosities. They are in perfection when they have acquired their full size and weight, but before the insect has pierced them, after which they get a brighter colour, and lose some of their weight. The harvest takes place about the middle of *Messidor*. The galls first picked are laid apart, and are known under the name of *Yorli*, and in commerce are called *Black* and *Green* galls. Those gathered later are called *White* galls, and are very inferior in value. In commerce they occur of different sizes, smooth or knotty on the surface, of a whitish, reddish, or blackish colour, and generally penetrated with a small hole. Internally they consist of a spongy, but hard, more or less brown substance, and they have a very rough astringent taste. Good galls are of a blackish-grey, or yellow colour, heavy, and tuberculated on the surface. They are the most powerful astringents we possess; and since the discovery of the tanning principle by Mr Seguin, have very much engaged the attention of chemists. Neumann got from 960 grains of coarsely powdered galls 840 watery extract, and afterwards only 4 alcoholic; and inversely, 760 alcoholic, and 80 watery. But the most minute analysis is that of Sir H. Davy, who found that 500 grains of good Aleppo galls gave, by lixiviating them until their soluble matters were taken up, and evaporating the solution slowly, 185 grains of solid matter, which, when examined by analysis, appeared to consist of,

Tannin, - - - -	130
Mucilage, and matter rendered insoluble by evaporation,	12
Gallic acid, and a little extractive matter,	31
Remainder, calcareous earth and saline matter,	12

From my experiments, I am disposed to think that Sir H. Davy has under-rated the tannin of nut-galls; for by simple repeated infusions in hot water, the residuum of 500 grains in one experiment amounted only to 158, and in another only to 136 grains. The quantity of tannin, estimated in Sir H. Davy's way, amounted, in the first to 220 grains, and in the second to 256. The great difference in these results from Sir H. Davy's must be entirely ascribed to some differences in the galls themselves, or in the mode of operation. A saturated decoction of galls, on cooling, deposites a copious pale yellow precipitate, which seems to be purer tannin than what can be got by any

other process; but it still requires and deserves a more minute examination. In my experiments, a very weak infusion of nut-galls was precipitated by sulphuric acid, lime-water, sub-carbonate of potass, acetate of lead, sulphate of copper, nitrate of silver, sulphate of iron, tartrate of antimony, nitrate of mercury, infusion of officinal cinchona, and solution of gelatine; it was not precipitated by nitrous acid, ammonia, sulphate of zinc, muriate of mercury, infusion of quassia, or infusion of saffron. To what principles these precipitates are owing remains still to be ascertained. Vauquelin justly observes, that the infusions of nut-galls and of cinchona agree in precipitating both gelatine and tartrate of antimony, but that they precipitate each other: Another fact, equally curious, occurred in my experiments: a mutually saturated mixture of the infusions of nut-galls and cinchona still precipitates gelatine; but these infusions, separately saturated by gelatine, do not act on each other. Hence it appears, that the action of these infusions on each other depends on principles contained in each, compatible with the presence of tannin, but re-acting on each other, and that gelatine precipitates these principles along with the tannin. Sir H. Davy has concluded that tannin and gelatine unite in fixed proportions, viz. 46 of tannin with 54 gelatine: were this correct, it would very much facilitate the analysis of astringents, but unfortunately my experiments do not confirm it. A twelve hours' infusion of 500 grains of nut-galls in twelve ounces of water, precipitated successively with equal quantities of solution of gelatine, containing each twenty-four grains, gave precipitates weighing 98, 64, 48, and 36 grains: hence, if we suppose the whole gelatine used to be contained in each precipitate, these consisted of 24 grains of gelatine, and 74, 40, 24, and 12 grains of tannin; so that, from the weight of the precipitate alone, we cannot estimate the tannin. Dr Bostock has drawn the same conclusions from a set of experiments which he made, without any knowledge of mine. It has been generally asserted, that the precipitate of tannin and gelatine is insoluble in water, either cold or hot; but I find that in boiling water it not only becomes soft and viscid, but a certain portion is dissolved, which separates again when the solution cools. I may also remark, that if the precipitate be dried without any heat, it has a yellowish-white appearance, opaque, and without lustre; but if exposed to a very moderate increase of temperature before it be dry, it seems to undergo a kind of fusion, and acquires transparency, a dark brown-red colour, and a resinous lustre; with a higher temperature, even when almost dry, it will become so fluid

perties, which depend on the presence of camphor; and from its depositing crystals of camphor when long kept.

RUBIA TINCTORUM. *Ed. Lond. Dub.*
Willd. g. 187, *sp.* 1. *Tetrandria Monogynia.*—Nat. ord. *Stellatæ.*
Madder.

Off.—The root.
RADIX RUBIÆ TINCTORUM. *Ed.*
RADIX RUBIÆ. *Lond. Dub.*

MADDER is perennial, and is cultivated in large quantities in England, from whence the dyers are principally supplied with it. It has been said to grow wild in the south of England, but the Rubia peregrina was mistaken for it.

The roots consist of articulated fibres, about the thickness of a quill, which are red throughout, have a weak smell, and a bitterish astringent taste. For the use of the dyers, they are first peeled and dried, then bruised and packed in barrels. Madder possesses the remarkable property of tinging the urine, milk, and bones of animals which are fed with it, of a red colour.

Medical use.—It is said to be useful in the atrophy of children, and some believe in its reputed powers as an emmenagogue.

It is given in substance in doses of half a drachm, several times a-day, or in decoction.

RUMEX.
Willd. g. 699. *Smith, g.* 184. *Hexandria Trigynia.*—Nat. ord. *Oleraceæ.*

Sp. 18. *Willd.; sp.* 8. *Smith.* RUMEX AQUATICUS. *Dub.*
Great water-dock.

Off.—The root.
RADIX RUMICIS AQUATICI. *Dub.*

THIS is a perennial weed, growing in ditches and by the sides of rivers. It grows to the height of five feet, and flowers in July and August. The root is large, and is manifestly astringent. It evidently is the *Herba Britannica* of the ancients, so much celebrated for the cure of scurvy and cutaneous diseases. Even syphilis, probably some syphiloid affection, has been said to yield to an infusion of water-dock in wine and vinegar.