

**www.e-rara.ch**

**Arboretum et fruticetum britannicum**

From Celastra`Ceae, to Apocyna`Ceae

**Loudon, John C.**

**London, 1844**

**ETH-Bibliothek Zürich**

Shelf Mark: Rar 37533: 2

Persistent Link: <https://doi.org/10.3931/e-rara-81413>

[Chap. XXXIII - Chap. XL.]

---

**www.e-rara.ch**

Die Plattform e-rara.ch macht die in Schweizer Bibliotheken vorhandenen Drucke online verfügbar. Das Spektrum reicht von Büchern über Karten bis zu illustrierten Materialien – von den Anfängen des Buchdrucks bis ins 20. Jahrhundert.

e-rara.ch provides online access to rare books available in Swiss libraries. The holdings extend from books and maps to illustrated material – from the beginnings of printing to the 20th century.

e-rara.ch met en ligne des reproductions numériques d'imprimés conservés dans les bibliothèques de Suisse. L'éventail va des livres aux documents iconographiques en passant par les cartes – des débuts de l'imprimerie jusqu'au 20e siècle.

e-rara.ch mette a disposizione in rete le edizioni antiche conservate nelle biblioteche svizzere. La collezione comprende libri, carte geografiche e materiale illustrato che risalgono agli inizi della tipografia fino ad arrivare al XX secolo.

---

**Nutzungsbedingungen** Dieses Digitalisat kann kostenfrei heruntergeladen werden. Die Lizenzierungsart und die Nutzungsbedingungen sind individuell zu jedem Dokument in den Titelinformationen angegeben. Für weitere Informationen siehe auch [Link]

**Terms of Use** This digital copy can be downloaded free of charge. The type of licensing and the terms of use are indicated in the title information for each document individually. For further information please refer to the terms of use on [Link]

**Conditions d'utilisation** Ce document numérique peut être téléchargé gratuitement. Son statut juridique et ses conditions d'utilisation sont précisés dans sa notice détaillée. Pour de plus amples informations, voir [Link]

**Condizioni di utilizzo** Questo documento può essere scaricato gratuitamente. Il tipo di licenza e le condizioni di utilizzo sono indicate nella notizia bibliografica del singolo documento. Per ulteriori informazioni vedi anche [Link]

IV.  
549  
549  
2575  
550  
550

# ARBORETUM ET FRUTICETUM BRITANNICUM.

546  
556  
556

## CHAP. XXXIII.

2573  
2568

OF THE HARDY LIGNEOUS PLANTS OF THE ORDER CELASTRACEÆ.

545

*DISTINCT. Char.* Sepals 4—6: æstivation imbricate. Petals 4—6. Stamens 4—6, alternate with the petals; opposite the sepals, indistinctly perigynous. Ovary superior, free, girded with a fleshy disk, with 2—4 cells: ovules erect, rarely pendulous. Fruit capsular, baccate, drupaceous or samarideous. Seeds, in most, attended with an aril. Shrubs or trees. Leaves alternate or opposite, stipulate in most. Flowers whitish or greenish, in axillary cymes. (*Dec. Prod.*, and *Lindl. Introd. to N. S.*) Shrubs or low trees, chiefly deciduous; natives of both hemispheres; chiefly remarkable for the form and colours of their fruits; their flowers being neither large nor showy, nor their properties valuable in medicine, or general economy. All the species are readily increased by layers, by cuttings struck in sand, or by seeds. The genera containing hardy species are *Euonymus*, *Celastrus*, and *Nemopánthes*: the half-hardy species are included in *Máytenus*, *Cassine*, and *Hartógia*. The genus *Ilex* was formerly included in this order, and is still so in *De Candolle's Prodrómus*, *Don's Miller*, *Royle's Illustrations*, and various other works, being made a tribe under the name of *Aquifoliaceæ*. As this tribe was elevated to the rank of an order, by *Dr. Lindley*, in his *Key*, we have followed that as an authority.

548

*EUONYMUS Tourn.* Sexes mostly hermaphrodite. Calyx 4—6-lobed, covered with a peltate disk. Petals 4—6, inserted into the disk. Stamens 4—6, inserted into rather prominent glands above the disk. Fruit a dehiscent capsule, of 3—5 cells. Seed with an aril. Leaves mostly opposite. (*Dec. Prod.*, ii. p. 3.)

2570

*CELASTRUS L.* Sexes mostly hermaphrodite. Calyx minute, 5-lobed, Petals 5. Ovary small, immersed in a disk, that is marked with 10 longitudinal lines. Fruit a dehiscent capsule of 2—3 cells. Seed with an aril. Leaves alternate. (*Dec. Prod.*, ii. p. 3.)

2549

*NEMOPÁNTNES Rafín.* Sexes polygamous or diœcious. Calyx minute. Petals 5. Ovary hemispherical, covered with a clammy juice or pulp. Fruit an indehiscent berry, that is roundish, and of 3—4 cells, and 3—4 seeds. (*Dec. Prod.*, ii. p. 17.)

2570

*MAÝTENUS Feuillée.* Sexes polygamous. Calyx 5-cleft. Petals 5. Stamens 5. Ovary surrounded by a fleshy disk. Fruit dehiscent. Capsule of 1—4 cells. Seeds few, in the bottom of the cells, each with an aril. Leaves alternate. (*Dec. Prod.*, ii. p. 9.)

2546

*CASSINE L.* Sexes hermaphrodite. Calyx minute, 4—5-parted. Petals 5. Fruit an almost dry drupe; its nut indehiscent, slender, of 3 cells, and 3 seeds, each pendulous from the top of a cell. Leaves opposite. (*Dec. Prod.*, ii. p. 11.)

2553

*HARTÓGIA Thunb.* Sexes hermaphrodite. Calyx 4—5-cleft. Petals 4—5. Stamens 4—5. Fruit a dry drupe; its nut indehiscent, ovate, of 2 cells, and 2 seeds. Leaves opposite. (*Dec. Prod.*, ii. p. 12.)

## GENUS I.



*EUONYMUS* Tourn. THE EUONYMUS, or SPINDLE TREE. *Lin. Syst.*  
Tetra-Hex-ándria Monogýnia.

*Identification.* Tourn. Inst., t. 388.; *Lin. Gen.*, 271.; *Dec. Prod.*, 2. p. 3.; Don's Mill., 2. p. 3.

*Synonymes.* Fusain, Bonnet de Prêtre, or Bois à Lardoire, *Fr.*; Spindelbaum, *Ger.*

*Derivation.* The word *Euonymus* is formed from the Greek, and signifies of good repute; and Smith states that it has been applied to this genus, or, at least, to the species *E. europæus*, by antiphrasis, as this species is fetid in every part when bruised, and is esteemed poisonous. (*Eng. Flora*, i. p. 329.) The French word *Fusain* means a spindle, alluding to the use of the wood for making spindles. *Bonnet de Prêtre* alludes to the form of the capsules, which, when opened, bear some resemblance to a priest's cap; and it is called *Bois à Lardoire* from the use made of the wood for skewers or larding-pins. The German name is literally spindle tree.

‡ 1. *E. EUROPEUS* L. The European Euonymus, or Spindle Tree.

*Identification.* *Lin. Sp.*, 286.; *Dec. Prod.*, 2. p. 4.; Don's Mill., 2. p. 3.

*Synonymes.* *E. vulgaris* *Mill. Dict.*; Prick-timber *Gerard.*; Louse Berry, Dogwood, Gatteridge Tree; Fusain d'Europe, Bonnet de Prêtre commun, *Fr.*; gemeine Spindelbaum, *Ger.*

*Derivation.* The English name Prick-timber, or Prick-wood, alludes to the employment of the wood in making toothpicks and skewers, which were formerly called pricks; and it is called Dogwood, because a decoction of its leaves was used to wash dogs, to free them from vermin. The names of Gatteridge Tree and Gaitre Tree are derived from a Saxon word signifying a cover; from the capsule hanging, like a cover, over the fruit. It is called Louse Berry, because the powdered leaves and berries were formerly put on the heads of children to chase away lice.

*Engravings.* Smith's *Eng. Bot.*, t. 362.; Hayne *Abbild.*, t. 16.; *E. of Pl.*, 2912.; our *fig.* 164.; and the plate of the tree in our Second Volume.

*Spec. Char., &c.* Branches smooth. Leaves lanceolate-ovate, very finely sawed. Flowers about 3 upon one peduncle; the petals oblong, rather acute. Lobes of the capsule obtuse. (*Dec. Prod.*, ii. p. 4.) A shrub or low tree, a native of Europe, in hedges and scattered woods; plentiful in Britain; and, though seldom found in a wild state exceeding 10 ft. or 12 ft. in height, yet, in some situations, attaining, when cultivated, the height of 30 ft. and upwards. It produces its greenish white flowers in May, and ripens its rose-coloured fruits in September.



164

*Varieties.*

‡ *E. e. 2 fôlius variegâtis* Lodd. Cat. has variegated leaves, but never looks healthy.

‡ *E. e. 3 latifôlius* Lodd. Cat. has rather broader leaves than the species.

‡ *E. e. 4 nânus* Lodd. Cat. is a dwarf-growing plant.

‡ *E. e. 5 fructu albo* Lodd. Cat. has white capsules.

Nos. 3. and 5. of these varieties are, in our opinion, alone worth cultivating.

*Description, &c.* The roots are very numerous and whitish; forming a dense mass of network, and not extending to a great distance from the stem. The branches are numerous and opposite; and the wood hard and fine-grained. The leaves and bark are acrid, poisonous, and fetid when bruised. The capsules are of a fine rose colour, except in the white-capsuled variety, and the seeds are severally invested with an aril of a fine orange colour. This last character is conspicuous in the white-capsuled variety, as the colour of the capsule and that of the aril are in more direct contrast than in the species.

*Geography, History, &c.* This species is common throughout the middle and northern states of Europe; it is found in abundance in Sweden, in the north of Germany, in France, and in Britain; and it is also a native of Greece and Italy. It was noticed by the ancient Greek and Roman writers, and the wood seems, from the earliest ages, to have been used for various domestic purposes, more particularly for making netting-needles and spindles; and its uses in France and Germany, even at the present day, are very numerous. In

Britain, it was formerly employed in the manufacture of musical instruments; and it is still occasionally used for keys to pianofortes, and by turners and coopers. In Scotland, it is employed, along with the wood of the alpine laburnum (*Cytisus alpinus* L.), to form noggins, called bickers (? from the German word *becher*, a cup). These bickers are formed of small staves, alternately of the spindle tree and the laburnum; the wood of the former being white or yellowish, and that of the latter being very dark brown or black. When the wood of the spindle tree cannot be got, that of the holly is used. These bickers are employed both as drinking-vessels and as porridge dishes: in form they resemble milkpails; and when of a small size, are called luggies, from their having but one handle, which is called a lug, or ear. In Germany, shoots of 3 ft. or 4 ft. in length are bored and employed for the shanks of tobacco-pipes, the bowls being made of earthenware; and spindles are made of the wood in parts of the Continent where that mode of spinning is still practised: hence, the names of fusain and spindelbaum. The wood, split up into thin pieces, is formed into whisks for driving away flies. A charcoal is made of the shoots, which is much valued by artists, from the lines traced with it being easily effaced. This charcoal is made by putting a number of the shoots of two years' growth into an iron tube, and, after closing it so as to exclude the air, putting the tube in a fire till it becomes red. It is then taken out, and allowed to cool before the charcoal is removed. In using this charcoal, or charcoal crayons, as they are called, it is necessary, in sharpening them, to cut them to a point on one side, on account of the centre being only pith. The fruits of the tree have been employed by dyers, who derive three colours from them, green, yellow, and red. The first is obtained by boiling the seeds with alum; the second, by boiling the seeds alone; and the third, by using the capsules. A decoction of the capsules in alkali is said to colour hair red; and the leaves, dried and powdered, and put among the hair of the heads of children, is said to drive away vermin: hence one of the names. The fruit is said to be purgative and emetic in an eminent degree; so much so as not to be eaten by birds. After all, the principal use of the spindle tree at present, in Britain, is, to form skewers for butchers and cooks, and for watchmakers; the large trees in Forfarshire, that were formerly used by coopers in making bickers, being, for the most part, no longer to be met with. In ornamental plantations, this species, and all the others, are chiefly interesting in autumn, when, as Dumont elegantly observes, "they spread, by their numerous pendent capsules of a bright red colour or pure white, and their white and orange-coloured seeds, some rays of brilliance over the departing season, and recall the remembrance of the fine days of summer." (*Bot. Cult.*, vol. vi. p. 243.)

*Casualties.* The leaves are liable to be attacked by the caterpillar of the *Yponomeuta Euonymella* Latr.; so much so, that the plant, both in hedges and gardens, may frequently be seen wholly without leaves, and bearing numerous webs of a cobwebby appearance and consistence, which are formed by the young caterpillars, in the course of their feeding, in passing from point to point.

*Statistics.* The largest specimens of *E. europæus* in Great Britain appear to be in Scotland; more especially in Forfarshire, where the tree abounds, and attains a very considerable size, being frequently found from 25 ft. to 35 ft. in height, with trunks from 1 ft. to 18 inches in diameter. The wood, in that part of the country, is, or was formerly, much in demand by coopers and turners. In the neighbourhood of London, we know of but few large trees. One in Kensington Gardens, a little distance west of the Bayswater Gate, is 15 ft. high; in the Brompton Nursery, the white-capsuled variety has attained the height of 12 ft., with two stems, and a head covering a space of 25 ft. in diameter; at Mount Grove, Hampstead, 10 years planted, the species is 6 ft. high; in Essex, at Hylands, 10 years planted, it is 14 ft. high; in Oxfordshire, in the Oxford Botanic Garden, 40 years planted, it is 17 ft. high; in Pembrokeshire, at Golden Grove, 7 years planted, and 10 ft. high; in Rutlandshire, at Belvoir Castle, 18 years planted, and 15 ft. high; in Staffordshire, at Trentham, 14 ft. high; in Yorkshire, at Grimston, 12 years planted, and 12 ft. high. In Scotland, in the Glasgow Botanic Garden, 12 years planted, and 13 ft. high; in Bamfshire, at Gordon Castle, many trees are 20 ft. high. In Ireland, at Cypress Grove, near Dublin, 15 ft. high; at Terenure, 15 ft. high; at Coole, 17 ft. high; the diameter of the trunk, at 1 ft. from the ground, 1 ft. 2 in., and of the space covered by the branches 25 ft. In France, near Paris, at Sceaux, 20 ft. high. In Austria, at Kopenzel, near Vienna, 16 ft. high; in Held's Nursery, at Vienna, the white-capsuled variety, 12 ft. high; at Hadersdorf, 15 ft. high; at Brück on the Leytha, 14 ft. high. In Prussia, at Sans Souci, 15 ft. high. In Bavaria, in the Botanic Garden at Munich, 12 ft. high. In Sweden, in the Botanic Garden at Lund, 16 ft. high.

*Commercial Statistics.* The species, being little in demand, is not generally propagated in the London nurseries. *E. e. latifolius* is 1s. 6d. a plant. At Bollwyller, the species, the variegated-leaved variety, and the variety with white capsules, are each 50 cents; and *E. e. latifolius*, 1 franc and 50 cents: at New York, ?.

❖ 2. *E. VERRUCOSUS* Scop. The warted-barked Euonymus, or Spindle Tree.

*Identification.* Scop. Carn., ed. 2. No. 268.; Jacq. Fl. Austr.; Nouv. Du Ham.; Schmidt Arb.; Dec. Prod., 2. p. 4.; Don's Mill., 2. p. 4.

*Synonymes.* *E. europæus lepræus* Lin. Fil. Suppl., 154.; Fusain galeux, ou verruqueux, Fr.; warziger Spindelbaum, Ger.

*Engravings.* Nouv. Du Ham., 3. t. 8.; Schmidt Arb., t. 72.; Jacq. Fl. Austr., t. 49.; and our fig. 165.

*Spec. Char., &c.* Branches warted with prominent lenticular glands. Leaves ovate, slightly serrate. Flowers three on a peduncle. Petals ovate; capsule bluntly 4-cornered. (Dec. Prod., ii. p. 4.) A deciduous shrub of restricted growth, and rather conical outline; not marked by any feature of foliage, noticeable at a distance, that distinguishes it from *E. europæus*, but remarkable, and most distinct, on close inspection, in the warted character of its branches. The bark is of a green colour, and the warts of a dark one: they are small, and very numerous. A native of Europe, particularly of Austria, Hungary, and Carniola; introduced in 1763, and flowering in May and June. The flowers are of a purple brown colour. This species is cultivated in collections chiefly for the singularity of its appearance; being among spindle trees what the warted ash is among ash trees. It ripens seeds, and is readily increased by cuttings. Plants of it, 10 ft. high, were in Loddiges's arboretum in 1834. Plants, in the London nurseries, cost 1s. 6d. each; at Bollwyller, 1 franc.

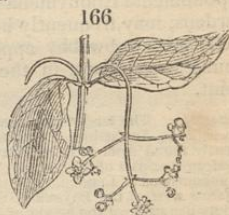


‡ 3. *E. LATIFOLIUS* C. Bauh. The broad-leaved Euonymus, or Spindle Tree.

*Identification.* C. Bauh. Pin., 428.; Jacq. Hort. Vind., 2.; Dec. Prod., 2. p. 4.; Don's Mill., 2. p. 4. *Synonymes.* *E. europæus* var. 2. Lin. Sp., 236.; Fusain à larges Feuilles, Fr.; breitblättriger Spindelbaum, Ger.

*Engravings.* Jacq. Fl. Austr., t. 289.; Nouv. Du Ham., 3. t. 7.; Bot. Mag., 2384.; E. of Pl., No. 2914.; our fig. 166.; and the plate of the species in our Second Volume.

*Spec. Char., &c.* Branches smooth. Leaves broadly ovate. A shrub or low tree, a native of Europe, and particularly of the south of Germany, and of some parts of France and Switzerland, where it grows to the height of 10 ft. or 12 ft., producing its greenish white flowers in June and July, which become of a reddish purple as they fade. Introduced in 1730. In British gardens, this forms much the handsomest species of the genus, from its broad shining leaves and its large red pendulous fruits, with orange-coloured seeds, which, when the capsules open, are suspended from the cells somewhat in the manner that the seeds of the magnolias hang from their strobiles. Even the wood of this species, during winter, is much handsomer than that of any other, the branches being regularly divaricate, with a clean bark, of a reddish green, and with long-pointed dark brown buds; by which alone this species may be distinguished from all the others. Unfortunately for this species, it is generally treated as a shrub, and crowded among other shrubs



or trees; so that it is never allowed a chance of attaining either its full size or its proper shape. Notwithstanding this, at Purser's Cross, and in the arboretum at Kew, it is 15 ft. high. If treated as a tree, placed by itself on a lawn, it would form one of the very handsomest trees that we possess during summer, from its fine broad shining leaves; and one of great singularity and beauty in autumn, when covered with its brilliant scarlet fruits. It appears much less liable to be attacked by insects than the common species, or than *E. verrucosus*, as may be seen in Loddiges's arboretum, where all the species and varieties are placed together; and where *E. latifolius* always appears with leaves uninjured; while the other species and varieties are sometimes almost entirely without leaves, from the ravages of caterpillars. Like the other species, *E. latifolius* may be propagated in abundance by seeds, or by cuttings, either of the young or of the ripened wood. Plants, in London, are 1s. 6d. each; at Bollwyller, 1 franc 50 cents; and at New York, ?.

❖ 4. *E. NANUS* Bieb. The dwarf Euonymus, or Spindle Tree.

*Identification.* Bieb. Fl. Taur. Suppl., p. 160.; Dec. Prod., 2. p. 4.; Don's Mill., 2. p. 4.

*Spec. Char., &c.* Branches smooth, somewhat herbaceous. Leaves lanceolate, entire, nearly opposite. Flowers 4-cleft, from 1 to 3 on a peduncle. A subshrub, with the aspect of the widow wail (*Cneorum tricocum*), and a native of northern Caucasus. The fruit is not known; hence the species may not be of the genus *Euonymus*. (*Dec. Prod.*, ii. p. 4.)

❖ 5. *E. ATROPURPUREUS* Jacq. The dark-purple-flowered Euonymus, or Spindle Tree.

*Identification.* Jacq. Hort. Vind., 2.; Ph. Fl. Am. Sept., 1. p. 168.; Dec. Prod., 2. p. 4.; Don's Mill., 2. p. 5.

*Synonymes.* *E. carolinensis* Marsh. Arb. Amer., No. 1.; and, probably, *E. latifolius* Marsh. Arb. Amer., No. 2.

*Engravings.* Jacq. Hort. Vind., 2. t. 120.; Schmidt Arb., t. 73.; and our fig. 167.

*Spec. Char., &c.* Branches smooth. Leaves stalked, lanceolate, sawed. Flowers many upon a peduncle; the peduncle compressed. Petals orbiculate. Capsules angulately furrowed, smooth. (*Dec. Prod.*, ii. p. 4.) A native of N. America, from New York to Carolina, on the banks of rivulets. Introduced in 1756, and producing its dark purple flowers in June and July, which are succeeded by red fruit. This and the other American species of *Euonymus* are rarely found in a thriving state in Britain: as it appears to us, from not being planted in moist shady situations, and in peat or sandy soil. The plant in the London Horticultural Society's Garden, named *E. atropurpureus*, was, in 1834, 3 ft. high, after being 6 years planted. Plants, in the London nurseries, are 1s. 6d. each; at Bollwyller, 1 franc; and at New York, 25 cents.



❖ 6. *E. AMERICANUS* L. The American Euonymus, or Spindle Tree.

*Identification.* Lin. Sp., 286.; Dec. Prod., 2. p. 4.; Don's Mill., 2. p. 5.

*Synonymes.* *E. sempervirens* Marsh.; *E. alternifolius* Mench; the Burning Bush, Amer.

*Engravings.* Nouv. Du Ham., 3. t. 9.; Pluk. Alm., t. 150., fig. 5.; Schmidt Arb., t. 75.; our fig. 168., representing the plant in flower; and fig. 169., representing it in seed, with the warty capsule.

*Spec. Char., &c.* Branches smooth. Leaves almost sessile, elliptic-lanceolate, sawed. Flowers 1 to 3 on a peduncle. Petals sub-orbiculate. Capsule echinately warty. (*Dec. Prod.*, ii. p. 4.) A sub-evergreen shrub, growing to the height of 6 ft. or 8 ft.; a native of North America, from New England to Carolina, in hedges and shady woods, among rocks, and on the



edges of swamps; introduced in 1686. The flowers appear in June and July: they are yellow, tinged with red, and are succeeded by scarlet fruits which, according to Pursh, resemble, at a distance, those of *Arbutus Uredo*. They are a great ornament, he says, to this almost evergreen shrub, and have given rise, in America, to its common name, the burning bush. Plants of this species are in the arboreta of the London Horticultural



Society and the Messrs. Loddiges, but not in a thriving state, for want of moisture and shade. Price of plants, at New York, 15 cents, and of seeds 1 dollar a quart.

\* 7. *E. SARMENTOSUS* Nutt. The trailing-stemmed *Euonymus*, or *Spindle Tree*.

*Identification.* Nutt. Gen. Amer., 1. p. 155; Don's Mill., 2. p. 5.

*Synonymes.* *E. scandens* Hort.; *E. americanus* var. *sarmentosus* Dec. Prod., 2. p. 4

*Spec. Char., &c.* Chiefly distinguished from the last by its having a trailing stem that is prone to emit roots into the soil. It inhabits shady woods in Virginia and Carolina. (*Dec. Prod.*, 1. p. 4.) Introduced in 1824.

\* 8. *E. OBOVATUS* Nutt. The obovate-leaved *Euonymus*, or *Spindle Tree*.

*Identification.* Nutt. Gen. Amer., 1. p. 155; Dec. Prod., 2. p. 4; Don's Mill., 2. p. 5.

*Spec. Char., &c.* Stem prostrate, rooting. Shoots upright, with 4 blunt angles. Leaves broadly obovate, obtuse, almost sessile, sawed, with acute fine teeth. Flowers 3 upon a peduncle. Calyxes inflated. Anthers sessile. (*Dec. Prod.*, ii. p. 4.) A trailing shrub, a native of Pennsylvania, in marshes, between Franklin and Waterford; introduced in 1820, and flowering in June and July. The plant of this species in the garden of the London Horticultural Society was, in 1834, 1 ft. in height, and covered a circle of 10 ft. in diameter. We have not observed the name in any nurseryman's catalogue.

\* 9. *E. ANGUSTIFOLIUS* Ph. The narrow-leaved *Euonymus*, or *Spindle Tree*.

*Identification.* Ph. Fl. Amer. Sept., 1. p. 163; Dec. Prod., 2. p. 4; Don's Mill., 2. p. 5.

*Spec. Char., &c.* Branches smooth. Leaves either oblong-elliptical or linear-elliptical, somewhat falcate, almost entire, almost sessile. Flowers mostly 1 on a peduncle, unequally 5-cleft. Capsules echinately warted. Allied to *E. americanus*. (*Dec. Prod.*, ii. p. 4.) A deciduous shrub, of 6 ft. or 7 ft. in height; a native of North America, in Georgia, in shady woods. Introduced in 1806. Its flowers and fruit resemble those of *E. americanus*; and, though nearly related to it, Lyon, its discoverer, was informed by Pursh, that, when propagated by seeds, it retains its distinctive character. Plants, in the London nurseries, are 1s. 6d. each; at New York, 1 dollar.

† 10. *E. HAMILTONIANUS* Wall. Hamilton's *Euonymus*, or *Spindle Tree*.

*Identification.* Wall. Fl. Ind., 2. p. 403; Don's Mill., 2. p. 4.

*Synonymes.* *E. atropurpureus* Wall. Fl. Ind., 2. p. 402.

*Spec. Char., &c.* Branches smooth, terete. Leaves lanceolate, finely serrated. Peduncles dichotomous, 6-flowered. Flowers tetrandrous. Petals 4, lanceolate cordate. Ovary 4-lobed, 4-celled, each cell containing 2 ovules. (*Don's Mill.*, ii. p. 4.) A shrub or low tree, a native of Nepal, where it grows to the height of 20 ft., with an erect trunk and spreading branchlets. It was

introduced in 1825; and there are plants of it in the London Horticultural Society's Garden, and in some nurseries. A standard plant of it, in the garden of the London Horticultural Society, in an open situation, was, in 1834, 4 ft. high, after being 4 years planted. Plants against a wall, in the same garden, are 10 ft. high. The species is striking from the whiteness of its stem, and the largeness of its leaves. The plant above mentioned, which is trained to a wall, flowers pretty freely; but the flowers are small, and the cymes of them do not make a show: they are of a yellowish green colour.

‡ 11. *E. GARCINIEFOLIUS* Roxb. The Garcinia-leaved Euonymus, or Spindle Tree.

Identification. Roxb. in Fl. Ind., 2. p. 403.; Don's Mill., 1. p. 4.  
Synonyme. *E. lacerus* Ham. in D. Don's Prod. Fl. Nep., p. 191.?, Dec. Prod., 2. p. 5., Don's Mill., 2. p. 4.

Spec. Char., &c. Branchlets smooth, terete. Leaves lanceolate, entire. Petals oblong, with incurved edges, much longer than the calyx. Peduncles between the leaves, sometimes solitary, 3-flowered. Flowers pentandrous. (Don's Mill., ii. p. 4.) A shrub or tree, growing to the height of 12 ft.; a native of Nepal; introduced in 1820. The flowers are small, pale yellow; the capsule oblong, about the size of a small field bean, 1-celled, 2-valved, opening from the base, containing one oval seed, covered with a thin, succulent, veined, bright scarlet aril. (*Ibid.*) This appears to be a very remarkable species; but we have not seen plants of it.

‡ 12. *E. GRANDIFLOUS* Wall. The large-flowered Euonymus, or Spindle Tree.

Identification. Wall. in Fl. Ind., 2. p. 404.; Don's Mill., 2. p. 5.  
Spec. Char., &c. Branches terete, smooth. Leaves obovate-oblong, obtuse, acutely serrate, with a tapering entire base. Peduncles slender, flattened, nearly equalling the length of the leaves, 3-6-flowered. Flowers tetrandrous; petals orbicular, flat, with curled edges. Capsule globular, pendulous, obscurely 4-cornered, with, usually, geminate pendulous seeds. (Don's Mill., 2. p. 5.) A shrub, growing 10 ft. high, in the forest of Nepal, where it is very ornamental, both when in flower and when loaded with its yellow pendulous capsules, each of which is furnished with as many as 6 black pendulous seeds. The flowers are white, very large, scentless, slightly nodding; capsule very nearly globular, about the size of a cherry, 4-celled, 4-valved. Seeds oval, black, half covered by a brilliant red, minutely lobed, warted aril. (*Ibid.*) This very desirable species has not yet been introduced.

App. i. Half-hardy Species of *Euonymus*, or Species which, according to G. Don, "will, no doubt, turn out to be truly hardy."

The following are already in the country, and treated as frame or greenhouse plants:—

‡ *E. grossus* Wall., a tree of Nepal, growing 12 ft. high, and introduced in 1824.

‡ *E. micranthus* D. Don, a Nepal shrub of 8 ft. high, introduced in 1820.

‡ *E. lucidus* D. Don, a Nepal shrub of 6 ft. high, introduced in 1820.

‡ *E. japonicus* Thunb., an elegant Japan tree, growing to the height of 20 ft., introduced in 1804.

‡ *E. echinatus* Wall., a climbing and rooting shrub from Nepal, in 1824.

(fig. 170.) Found on mountains, at the height of from 5,000 ft. to 7,000 ft.

The following species, marked in Don's *Miller* as frame plants, are not yet introduced:—

‡ *E. tingens* Wall., a tree of Nepal, growing to the height of 16 ft. or 20 ft., the yellow bark of which is employed by the Nepalese for the purpose of marking the forehead with their religious symbol, commonly called *tika*. This is also found on mountains. In p. 173., under the order Celastraceæ, are enumerated two other Nepal species, which will probably prove hardy; and which will be found described below.

‡ *E. glaber* Roxb., a tree growing to the height of 15 ft., in Chittagong, in the East Indies.

‡ *E. fimbriatus* Wall., a tree from the Sewalik Mountains, in India, with doubly serrated leaves.

‡ *E. indicus* Heyne, an East India shrub 8 ft. high.

‡ *E. vogans* Wall., a most extensive climbing and rambling shrub, in the mountainous forests of Nepal, resembling *E. echinatus*, but never throwing out roots at the joints.

‡ *E. subtriflorus* Blume, and *E. Thunbergianus* Blume, are Japan shrubs, of which little appears to be known.

The following species are those above alluded to, as mentioned in Royle's *Illustrations*, and not included in Don's *Miller*:—

‡ *E. pendulus* Wall., a Nepal tree, considered by some as identical with *E. japonicus*, and found on the Himalaya Mountains, at an elevation of about 5,000 ft.

‡ *E. rigidus* Wall. is also a Nepal tree, which is generally found with *E. fimbriata*, at not less than 8,000 ft. of elevation.



## GENUS II.



*CELA'STRUS* L. THE CELASTRUS, or STAFF TREE. *Lin. Syst.* Pentándria  
Monogýnia.

*Identification.* *Lin. Gen.*, 270.; *Dec. Prod.*, 2. p. 5.; *Don's Mill.*, 2. p. 6.

*Synonymes.* *Euonymoides Mærch.*; *Célastre, Fr.*; *Celaster, Ger.*

*Derivation.* From *kélas*, the latter season; the fruit remaining on the tree all the winter. The *kélastros* of the Greeks is supposed to be the *Euonymus*.

‡ 1. *C. SCA'NDENS* L. The climbing-stemmed *Celastrus*, or *Staff Tree*.

*Identification.* *Lin. Sp.*, 285.; *Dec. Prod.*, 2. p. 6.; *Don's Mill.*, 2. p. 9.; *Bourreau des Arbres, Fr.*;  
*Baumtinder, Ger.*

*Engravings.* *Nouv. Du Ham.*, 1. t. 95.; *Schkuhr Handb.*, 1. t. 47.; and our *fig.* 171.

*Spec. Char., &c.* Thornless, climbing, smooth.

Leaves oval, acuminate, serrate. Flowers dioecious. (*Dec. Prod.*, ii. p. 6.) A deciduous twining shrub; a native of North America, and introduced, by Peter Collinson, in 1736. The flowers are of a pale yellow, and the capsules of an orange scarlet colour, 3-cornered and 3-seeded. The stems are woody and flexible, and twist themselves round trees and shrubs, or round each other, to the height of 12 ft. or 15 ft. or upwards, girdling trees so closely as, in a few years, to destroy them; whence the French and German names, which signify "tree-strangler." The leaves are about 3 in. long, and nearly 2 in. broad, serrated, of a lively green above, but paler on the under side. We are uncertain whether both of the sexes are extant in British collections or not; but, as seed has been produced in the Botanic Garden at Bury St. Edmunds, it is clear that the female one, at least, is. Miller says the seeds ripen well in England, and that the plant may be propagated by them, or by layers. It prefers a strong loamy soil, rather moist than dry. As a freely growing twiner, with pleasing foliage, and as ligneous twiners are not numerous, it deserves to be more generally cultivated. Plants, in the London nurseries, cost 1s. 6d. each, and American seeds 6d. an ounce; at Bollwyller, plants 1 franc each; and at New York, plants 20 cents each, and seeds 35 cents a quart.



‡ 2. *C. BULLA'TUS* L. The studded-capsuled *Celastrus*, or *Staff Tree*.

*Identification.* *Lin. Sp.*, 285.; *Dec. Prod.*, 2. p. 6.; *Don's Mill.*, 2. p. 7.

*Engravings.* *Pluk. Alm.*, t. 28. f. 5.

*Spec. Char., &c.* Thornless, climbing. Leaves ovate, acute, entire. Flowers in terminal panicles. Capsules elegant, studded, scarlet. (*Dec. Prod.*, ii. p. 6.) A low shrub, said to be a native of Virginia, and to have been first discovered by Banister, and afterwards introduced in 1759; but Pursh, after diligent research, in the place of its supposed nativity, and also in the herbariums of Plukenet and Banister, at the British Museum, was not able to satisfy himself that it was a native of America. Miller says that it grows, in its native country, to the height of 8 ft. or 10 ft.; but in England it seldom attains more than half that size. It flowers in July; and, in its native country, the flowers are succeeded by scarlet capsules; but it rarely ripens seeds in England. (*Mart. Mill.*)

App. i. *Half-hardy Species of Celastrus.*

There are a number of species of *Celastrus* from the Cape of Good Hope, and some from the East and West Indies, and South America, which might be tried in the open air against a conservative wall; but the family are not of sufficient beauty or interest to render this desirable to any great extent.

GENUS III.



NEMOPANTHES Rafin. THE NEMOPANTHES. *Lin. Syst.* Polygàmia Diœ'cia.

*Identification.* Rafin. Journ. Phys., 1819, p. 96; Dec. Prod., 2. p. 17; Don's Mill., 2. p. 13.

*Synonymes.* Illicitides Dum. Cours., 1. vol. 4. p. 27.

*Derivation.* From *nemos*, a grove, and *anthos*, a flower; it being generally found in groves.

§ 1. N. CANADENSIS Dec. The Canadian Nemopanthes.

*Identification.* Dec. Mém. Soc. Gen., 1. p. 44; Pl. Rar. Hort. Gen., t. 3; Don's Mill., 2. p. 13.

*Synonymes.* Plex canadensis Michx. Flor. Bor. Amer., 2. p. 299; N. fascicularis Rafin.; Plex

delicatula Bart. Fl. Vir., p. 67; ? Prinos lucidus Ait. Hort. Kew., 2. p. 478; Houx du Canade, Fr.

*Engravings.* Dec. Mém. Soc. Gen., 1. t. 3; Michx. Fl. Bor. Amer., 2. t. 49, as Plex canadensis; and our fig. 172.

*Spec. Char., &c.* Leaves ovate, quite entire, or serrated at the apex, smooth. Pedicels usually solitary, 1-flowered, very long. Flowers white. Berries large, beautiful crimson, very ornamental. (*Don's Mill.*, ii. p. 13.) This is said to be a very hardy, ornamental, deciduous shrub, and to be cultivated at Courset, and in the nursery of M. Cels, at Paris. We have only seen a small plant of it, under the name of *Prinos lucidus*, in the garden of the London Horticultural Society, which, in 1834, was 4 ft. high, after having been 8 years planted.



GENUS IV.



MAYTENUS Feuill. THE MAYTENUS. *Lin. Syst.* Polygàmia Diœ'cia.

*Identification.* H. B. et Kunth. Nov. Gen. Amer., 7. p. 64; Dec. Prod., 2. p. 9; Don's Mill., 2. p. 10.

§ 1. M. CHILENSIS Dec. The Chili Maytenus.

*Identification.* Dec. Prod., 2. p. 9; Don's Mill., 2. p. 11; Lindl. in Bot. Reg., t. 1702.

*Synonymes.* Senécia Maytenus Lam. Ill., No. 2712; Celástrus Maytenus Willd. Sp., 1. p. 1127; ? M. boaria Mol. Chil., p. 152.

*Engravings.* Feuill. Obs., 3. p. 39. t. 27; Bot. Reg., t. 1702; and our fig. 173.

*Spec. Char., &c.* Leaves lanceolate serrated. A handsome evergreen shrub, a native of Chili, at Coquimbo, and introduced in 1829. In its native country, it is said to form a small tree, 12 ft. high; in the garden of the London Horticultural Society, where it has been planted against a south wall since 1830, it forms a handsome, evergreen, branchy shrub, with twiggly branchlets. It has also been tried there as a standard, and found to be quite hardy. The flowers are in axillary clusters, with a corolla of a yellowish green colour, not showy. (*Bot. Reg.*, t. 1702.) This desirable addition to our hardy evergreen shrubs will, we trust, soon come into general cultivation. It affords one of the numerous examples which are continually occurring of the utility of trying house plants in the open air, since in published lists it is marked as requiring a green-house.



GENUS V.

CASSINE L. THE CASSINE. *Lin. Syst.* Pentándria Monogýnia.

*Identification.* Lin. Gen., 371; Lam. Ill., t. 310; Gært. Fruct., 2. p. 72. t. 92; Dec. Prod., 2. p. 11; Don's Mill., 2. p. 12.

*Derivation.* The word *Cassine* is of American origin, and unknown meaning.

■ 1. *C. MAUROCENIA* L. Mauroceni's Cassine, or the Hottentot Cherry.

*Identification.* Lin. Sp., 385; Don's Mill., 2. p. 13.

*Synonymes.* *Maucocenia frangularia* Mill. Dict., No. 1.

*Derivation.* The specific name was given in honour of the Venetian senator, *Signor Francisco Mauroceni*, who had a fine garden at Padua, a catalogue of the plants in which was published by Antonio Teta.

*Engraving.* Dill. Elth., t. 121. f. 147.

*Spec. Char., &c.* Leaves sessile, obovate, quite entire, convex. Pedicels many, very short. (*Don's Mill.*, ii. p. 13.) A shrub, a native of Ethiopia, introduced in 1690, and commonly kept in green-houses, but which deserves trial against a conservative wall.

■ 2. *C. CAPE'NSIS* L. The Cape Cassine, or *Phillyrea*.

*Identification.* Lin. Mant., 220; Don's Mill., 2. p. 13.

*Engravings.* Burm. Rar. Plant. Afr., t. 85; Dill. Elth., t. 236; and our fig. 174.

*Spec. Char., &c.* Leaves stalked, ovate, retuse, crenate, flat. Panicles solitary, shorter than the leaves. Flowers small, white. (*Don's Mill.*, ii. p. 13.) A shrub, a native of the Cape of Good Hope, found in woods; introduced in 1629, and producing its small white flowers in July and August.

*C. excelsa* Wall., *C. discolor* Wall., and *C. Colpoön* Thun.: the first a native of Nepal, and introduced in 1820; and the last a native of the Cape of Good Hope, and introduced in 1791, might be tried against a conservative wall, with every prospect of success.



## GENUS VI.

### HARTOGIA Dec. THE HARTOGIA. Lin. Syst. Tetra-Pentándria Monogýnia.

*Identification.* Dec. Prod., 2. p. 12; Don's Mill., 2. p. 13.

*Derivation.* Named in honour of *J. Hartog*, a Dutch traveller, and naturalist at the Cape of Good Hope.

■ 1. *H. CAPE'NSIS* L. The Cape Hartogia.

*Identification.* Lin. Fil. Suppl., 128; Don's Mill., 1. p. 13.

*Synonymes.* *Schröbera schinoides* Thun. Prod., t. 2; *Elæodéndron schinoides* Spreng. Syst., 1. p. 780.

*Engraving.* Thunb. Prod., t. 2.

*Spec. Char., &c.* Leaves opposite, oblong, crenated, smooth, hardly stalked. Pedicels few-flowered, axillary, drooping. (*Don's Mill.*, ii. p. 13.) A shrub, a native of the Cape of Good Hope, growing to the height of 10 ft., and introduced in 1800. It is marked in the catalogues as a green-house plant, but has been found to stand the open air as an evergreen shrub. In the London nurseries, a narrow-leaved variety of the *Cerasus Laurocerasus* used frequently to be sold for it.

## CHAP. XXXIV.

### OF THE HARDY AND HALF-HARDY PLANTS OF THE ORDER AQUIFOLIA'CEÆ.

*Identification.* Lindley's Key, p. 63.

*Synonymes.* *Celastrineæ*, tribe *Aquifoliaceæ*, in part, *Dec. Prod.*, 2. p. 11; *Plicineæ*, in part, *Lindl. Introd. to N. S.*, p. 178; *Don's Mill.*, 2. p. 14.

*Distinctive Characteristics.* Calyx and corolla with an imbricate æstivation. Sepals 4—6. Corolla hypogynous, with 4—6 lobes, and as many stamens inserted into it alternately to its lobes. Ovary 2—6-celled; a pendulous ovule in each cell. Fruit fleshy, indehiscent, with from 2—6 stones, each containing a pendulous seed, which has large fleshy albumen. Flowers small, axillary, solitary, or fascicled. (*Lindl. Introd. to N. S.*) *Myginda* is described as having a 1-celled fruit. The species of *Aquifoliaceæ* are evergreen and deciduous shrubs or trees, having alternate or opposite leaves, frequently coriaceous, glabrous, and sometimes feather-nerved. The genera containing hardy species are three, and are thus distinguished:—

*MYGINDA* Jacq. Sexes hermaphrodite. Calyx 4—5-cleft. Corolla deeply 4-cleft. Stamens 4, inserted into the base of the corolla. Fruit with (very

likely by abortion) 1 cell and 1 seed. Shrubs with branchlets square; leaves opposite, subcoriaceous, and flowers upon trifidly or trichotomously branched peduncles. (*Dec. Prod.* and *Don's Mill.*)

**I'LEX L.** Sexes hermaphrodite, very rarely, by defect, diœcious or polygamous. Calyx 4—5-toothed. Corolla 4—5-cleft. Stamens 4—5, inserted into the tube of the corolla. Fruit including 4 or 5 nuts. Evergreen shrubs, with, mostly, coriaceous leaves. Flowers many on a peduncle. (*Dec. Prod.* and *Don's Mill.*)

**PRINOS L.** Sexes mostly, by defect, diœcious or polygamous. Calyx 6-cleft. Corolla 6-cleft. Stamens 6, inserted into the tube of the corolla. Fruit including 6 nuts. Shrubs, with leaves deciduous or persistent, and flowers 1 upon a peduncle. (*Dec. Prod.* and *Don's Mill.*)

GENUS I.



**MYGINDA Jacq.** THE MYGINDA. *Lin. Syst.* Tetrândria Monogýnia.

*Identification.* Jacq. Amer., p. 24; Dec. Prod., 2. p. 12; Don's Mill., 2. p. 15.

*Synonymy.* I'lex Pursh.

*Derivation.* So named by Jacquin in honour of Francis von Mygind, a German botanist.

■ **1. M. MYRTIFOLIA Nutt.** The Myrtle-leaved Myginda.

*Identification.* Nutt. Gen., 1. p. 109; Don's Mill., 2. p. 15; Dec. Prod., 2. p. 13.

*Synonymy.* I'lex Myrsinites Pursh *Fl. Sept. Amer.*, *Hook. Fl. Bor. Amer.*, 1. p. 119, 120.

*Engravings.* Hook. Fl. Bor. Amer., t. 41; and our fig. 175.

*Spec. Char., &c.* Leaves oblong, blunt, serrated, smooth, with revolute edges. Peduncles very short, usually solitary, 1-flowered. Style short, club-shaped. 4-lobed at the apex. (*Don's Mill.*, ii. p. 15.) An evergreen shrub, a native of the western coast of North America, on sub-alpine hills, where it grows to the height of 4 ft. Introduced in 1818. The flowers are small and white, and they appear from May to August. The drupe, when mature, is about the size of a pea: it is of a dark purple colour, and contains only 1 elliptical seed. Small plants of this species are in the arboretum of Messrs. Loddiges, where it is increased by cuttings.



GENUS II.



**I'LEX L.** THE HOLLY. *Lin. Syst.* Tetrândria Tetragýnia.

*Identification.* Lin. Gen., No. 172; Dec. Prod., 2. p. 13; Don's Mill., 2. p. 16.

*Synonymy.* Aquifolium *Tourn. Inst.*, t. 371, *Gærtn. Fruct.*, 2. t. 92; Houx, *Fr.*; Stechpalme, or Heisse, *Ger.*

*Derivation.* Theophrastus, and other Greek authors, named the holly Agria; that is, wild, or of the fields; and the Romans formed from this the word Agrifolium; and called it, also, Aquifolium, from *acutum*, sharp, and *folium*, a leaf. C. Bauhin and Loureiro first named it I'lex, on account of the resemblance of its leaves to those of the *Quercus I'lex*, the true I'lex of Virgil. Linnæus adopted the name of I'lex for the genus, and preserved the name of Aquifolium for the most anciently known species. The name of holly is, probably, a corruption of the word holy, as Turner in his *Herbal* calls it Holy, and Holy Tree, probably from its being used to commemorate the holy time of Christmas, not only in houses, but in churches. The German name Christorn, the Danish name Christorn, and the Swedish name Christorn, seem to justify this conjecture.

□ **1. I. AQUIFOLIUM L.** The prickly-leaved, or common, Holly.

*Identification.* Lin. Sp., 181; Fl. Dan., 508; Dec. Prod., 2. p. 14; Don's Mill., 2. p. 16.

*Synonymy.* The holly, being a native of most parts of Europe, and being every where much admired, has several names in most living European languages. We shall give the chief of these from Nicuman's *Dictionary*.

*Englsh.* Hülver, Hulferre, and Holme.

*German.* Stechpalme, Stecheiche, Stechbaum, Stechlaub, Hulse, Hulsenbaum, Hulsenstrauch, Hulzt, Hulbs, Holst, Habze, Hullgenolz, Myrtendom, Christdorn, Mausdorn, Zwieseldorn, Kleezbusch, Stechapsel, Stechwinde, Waldistel.

*Danish.* Stikpalme, Mæretorn, Chrstorn, Skoutisdell.

*Suedish.* Jernek, Chrstorn.

*French.* Le Houx, le grand Housson, l'Agrou grand Pardon, and Bois Franc.

*Italian.* Agrifolio, Alloro spinoso.

*Spanish.* Acebo, Agrifolio.

*Portuguese.* Azevinho, Agrifolio, Acrifolio, Aginfolio.

*Russian.* Waefoscheld, Ostrokof, Padub.

*Dutch.* Schubbig hardkelk.

*Engravings.* Smith, Eng. Bot., t. 496.; Mill. Icon. 46.; Blackw. Icon., t. 205.; and the plate of the species in our Second Volume.

*Spec. Char., &c.* Leaves oblong, shining, wavy, spiny-toothed. Peduncles axillary. Flowers nearly umbellate. A handsome, conical, evergreen tree, a native of Europe, growing to the height of 30 ft. in a wild state, and to twice that height or upwards in a state of cultivation. The flowers are white, and appear in May; and the fruit is red, ripening in September, and remaining on the tree all the winter. The lower leaves are very spinous; while the upper ones, especially on old trees, are entire.

*Varieties.* In general the variegation of plants, more especially of trees and shrubs, is accompanied by a ragged, or otherwise unhealthy, appearance in the leaves; but the holly is one of the very few exceptions to this rule. The variegations of the holly are chiefly confined to the modification of white and yellow in the leaves; but there are some sorts in which the variation results from the state of the leaves with reference to prickles, to magnitude, and to form; and others consist of differences in the colour of the fruit, which is red, yellow, or white, and, according to some, black. All the varieties have been selected by gardeners from sports, or accidental deviations, from the central form and colour, detected in wild plants, or in plants in a state of cultivation. One of the most assiduous gardeners in collecting these varieties, according to Collinson, was Wrench of Fulham, who lived in the latter part of the reign of Charles II., and who planted the elm trees in St. James's Park. The collections of hollies in the time of Miller appear, from his lists, to have been more extensive, and to have been attended to with much more care, than they are at present; the wish being now more for species than varieties. The best garden collection of hollies in the neighbourhood of London is that in the arboretum of the Messrs. Loddiges; of which we shall give a classification below. The following sorts are purchasable in the London nurseries, exclusive of twenty or thirty subvarieties, differing in the degrees of variation of yellow or white blotches in the leaves. These subvarieties are, for the most part, without names, and are sold as yellow variegated or white variegated hollies of sorts. Of these subvarieties there are forty or fifty sorts from 6 ft. to 10 ft. high, all planted adjoining each other in the arboretum of the Messrs. Loddiges. Thirty-one varieties are described in the *Nouveau Du Hamel*, chiefly taken from Miller's *Catalogue*; but many of these varieties are no longer to be found in British nurseries. It is curious to look over the lists of the names of variegated hollies, which have been given in nurserymen's catalogues and garden books, from the time of London and Wise to the present day. In former times, as at present, the name given to any new variety was either that of the person who originated it, or that of the place where it was first raised; so that these lists present a sort of chronological history of nurserymen and nurseries, commencing with Wrench's Phyllis and Bridgman's yellow, named after persons, and terminating with the recent Irish varieties, Ballybeg and Ballyarthur hollies, lately sent to the London Horticultural Society, and named after places. The varieties in the following groups appear to us to be all that are truly distinct; but the shades of difference under each name in these groups are almost innumerable.

A. *Varieties designated from the Form, Magnitude, Thickness, Surface, or Margin of the Leaf.*

‡ I. A. 2 *heterophyllum* Hort. *The various-leaved common Holly.*



176

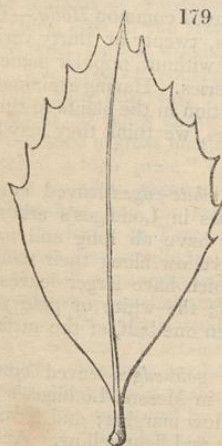


177



178

- † I. A. 3 *angustifolium* Hort. *The narrow-leaved common Holly.*
- † I. A. 4 *latifolium* Hort. *The broad-leaved common Holly.*
- † I. A. 5 *altaclerense* Hort. *The High Clere common Holly.*— Leaves broad, thin, and flat.
- † I. A. 6 *marginatum* Hort. (*fig. 176.*) *The thick margined-leaved common Holly.*— Leaves without prickles, coriaceous, nearly as broad as long, and with a thickened margin.
- † I. A. 7 *laurifolium* Hort. (*fig. 177.*) *The Laurel-leaved common Holly.*— Leaves small, oval-lanceolate, without prickles, about the size and shape of those of *Laurus nobilis*.
- † I. A. 8 *ciliatum* Hort. (*fig. 179.*) *The ciliated-leaved common Holly.*— Leaves oval-acuminate, small, the prickles along the margins like hairs.



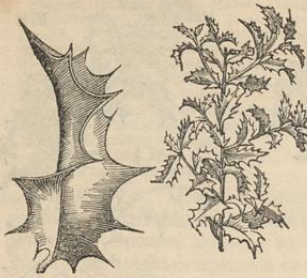
179



181

- † I. A. 9 *ciliatum minus* Hort. *The smaller ciliated-leaved common Holly.*— Leaves thinner and smaller than in the preceding variety.
- † I. A. 10 *recurvum* Hort. (*fig. 181.*) *The recurved-leaved common Holly.*
- † I. A. 11 *serratifolium* Hort. (*fig. 182.*) *The serrated-leaved common Holly.*
- † I. A. 12 *crispum* Hort. *The curled-leaved common Holly.*
- † I. A. 13 *ferox* Hort. *The fierce, or ferociously-spined-leaved common Holly.*; *Houx-hérissou* or *Hedgehog Holly, Fr.* (*fig. 180.*)— The disk of the leaf has its edges rolled back; and a somewhat cylindrical figure is hence given to it; and, as the surface abounds in

181



182



prominences and prickles, it has a curious appearance, not unaptly compared to that of a hedgehog. This sort is said, by Bradley and Evelyn, to have been first planted in the Bishop of London's garden, at Fulham, about the end of the seventeenth century, by his gardener, Mr. George London, who is supposed to have introduced it from France. According to Miller, who thought it a distinct species, it reproduces itself from seed.

- ♂ I. A. 14 *crassifolium* Hort. (fig. 178.) *The thick-leaved common Holly.*  
 ♀ I. A. 15 *senescens* Sweet. *The aged, or spineless, common Holly*

B. *Varieties designated from the Colours of the Leaf.*

- ♂ I. A. *variegatum* Hort. *The variegated-leaved common Holly.*—Under the general name of variegated hollies, twenty or thirty varieties, some of them with, and some of them without, popular names, are obtainable in the principal London nurseries. Having examined and compared the different shades of variegation in the plants in the very complete collection of Messrs. Loddiges, we think they may be all included in the following groups:—
- ♂ I. A. 16 *albo-marginatum* Hort. *The white-edged-leaved common Holly.*—Of this variety the subvarieties in Loddiges's arboretum are marked 5, 15, 18, and 24, which have all long and narrow leaves, with edgings of white or pale yellow along their margins; and 4, 6, 7, 12, 17, 22, 23, and 28, which have larger leaves, and a greater breadth of margin variegated; the white or pale yellow forming in some cases one third, or even one half, of the surface of the leaf.
- ♂ I. A. 17 *aureo-marginatum* Hort. *The gold-edged-leaved common Holly.*—The following subvarieties are in Messrs. Loddiges's arboretum. Nos. 19 and 20 with dark yellow margins; and Nos. 1, 2, 8, 9, 10, 13, and 29, with margins of dark and light yellow. Another subdivision of this group consists of plants with broad leaves, in what may be called a transition state from green to variegated, viz., with greenish yellow or very pale green blotches or margins. When such plants become old they are generally very distinctly variegated with yellow. Examples in the Hackney arboretum are Nos. 3, 20, and 21.
- ♂ I. A. 18 *albo-pictum* Hort. *The white-spotted-leaved common Holly, or Milkmaid Holly.*—This variety has a considerable portion of the centre of the disk of the leaf white, and of a somewhat transparent appearance; the edges of the disk of the leaf being green.

- ‡ I. A. 19 *aureo-pictum* Hort. *The gold-spotted-leaved common Holly.*—The following subvarieties are in Messrs. Loddiges's arboretum. Nos. 11, 14, 16, 26, 27, and 30.
- ‡ I. A. 20 *ferox argenteum* Hort. *The silver-blotched Hedgehog common Holly.*
- ‡ I. A. 21 *ferox aureum* Hort. *The gold-blotched Hedgehog common Holly.*

C. *Varieties designated from the Colour of the Fruit.*

- ‡ I. A. 22 *fructu luteo* Hort. *The yellow-fruited common Holly.*
- ‡ I. A. 23 *fructu albo* Hort. *The white-fruited common Holly.*

*Geography.* The holly is indigenous in most parts of the middle and south of Europe, in woods and shady places, in free and rather sandy soil; it is also said to be found in Japan and China. The European species does not appear to be a native either of North America or India; but the *Ilex opaca*, which is very extensively distributed in North America, and the *I. dipyræna*, which is common in the Himalaya, so closely resemble *I. Aquifolium*, that they are probably only varieties of it. According to Pallas, the common holly scarcely occurs within the ancient limits of the Russian empire; though frequent on the southern side of Caucasus, where it forms a low branching shrub, about 10 ft. high. In France it is abundant, more particularly in Britany. In Germany it abounds in many forests, particularly in the southern and middle states; where, when sheltered by lofty trees, it attains the height of 20 ft.; but, in exposed situations, it does not rise higher than 6 ft. or 8 ft. The tree appears to attain a larger size in England than in any other part of Europe. It is very generally distributed over the country, more especially in loamy soils. It abounds more or less in the remains of all aboriginal forests, and perhaps, at present, it prevails nowhere to a greater extent than in the remains of Needwood Forest, in Staffordshire; there are many fine holly trees, also, in the New Forest, in Hampshire. In Scotland it is common in most natural woods, as an undergrowth to the oak, the ash, and the pine. The greatest collection of hollies that we recollect to have seen or heard of, Sang observes, "grew in the pine forest of Blackhall, on the river Dee, about 20 miles above Aberdeen. Many of the trees were very large, and furnished a great quantity of timber, which was sent to London, where it fetched a high price." (*Plant. Kal.*, p. 15.) The holly, Sir T. D. Lauder states, is found in great abundance on the banks of the river Findhorn, in Aberdeenshire, and the trees grow to a very great size. So plentiful were they in the forest of Tarnawa, on its left bank, that for many years the castle of Tarnawa was supplied with no other fuel than billets of holly; and yet the trees are still so numerous, that, in going through the woods (in 1834), no one would suppose that any such destruction had been committed. (*Lauder's Gilpin*, i. p. 194.) In Ireland, the holly is not very common; but about the Lakes of Killarney it attains a large size.

*History.* The tree has been much admired from the earliest periods; and formerly, when it was customary to enclose and subdivide gardens by hedges, the holly was employed by all those who could afford to procure the plants, and wait for their comparatively slow growth. Evelyn's holly hedge, at Say's Court, Deptford, which was 400 ft. in length, 9 ft. high, and 5 ft. in diameter, has been celebrated in the history of this tree ever since the time of Ray; and other holly hedges, famous in their day, were those of Lord Dacre, at his park in Sussex, and of Sir Matthew Decker, at Richmond. "I have seen hedges," Evelyn observes, "or, if you will, stout walls of holly, 20 feet in height, kept upright; and the gilded sort budded low, and in two or three places one above another, shorn and fashioned into columns and pilasters, architecturally shaped, and at due distance; than which nothing can possibly be more pleasant, the berry adorning the intercolumniations with scarlet festoons, and encarpa." In Scotland, the most celebrated holly hedges were

those of the Earl of Haddington, at Tynningham, and those at Collington House, and at Moredun, near Edinburgh. Some of these hedges are noticed in p. 103.

*Properties and Uses.* As a hedge plant, the holly makes the most impenetrable and the most durable of all vegetable fences; and it has this great advantage over deciduous-leaved trees and shrubs, that it is seldom liable to be attacked by insects; and, if shorn, the outer surface becomes impenetrable even to birds, who cannot build their nests in it. In these points of view, it is decidedly the best hedge, both for the farmer and the gardener; but, if the faggot wood produced by the hedge is a greater object than the advantages just mentioned, which it is in some parts of England where fuel is scarce, the hawthorn is preferable to the holly, the latter producing but short annual shoots. The objection to the holly, as a hedge plant, is the slowness of its growth; but against this must be set its great durability and the other advantages which it possesses. Besides, by a little extra care in preparing the soil, the holly will make a complete fence as soon as the hawthorn does, under ordinary treatment. Mr. Sang, who may be quoted as the very first authority, observes, "that holly hedges are the best for making durable fences, and afford the greatest degree of shelter, especially during the winter months. No plant endures the shears better than the holly. A hedge of it may be carried to a great height; and, consequently, it is well fitted for situations where strength and shelter are required. It luxuriates most in rich sandy loam, although there are few soils in which it will not grow. After planting, the holly makes but very indifferent progress for a few years; but, after it becomes established in the ground, or about the third or fourth year after planting, no fence whatever will outgrow the holly." (*Plant. Kal.*, p. 357.) When a holly hedge has once become effective as a fence, no other kind whatever can be kept in repair for so many years, at so small an expense. Baudrillart speaks of holly hedges, in France, that are upwards of two centuries old: those at Tynningham were planted about the latter end of the seventeenth century.

*The wood of the holly* is almost as white as ivory, except in the centre of very old trunks, where it is somewhat brown. It is very hard, with a fine grain, susceptible of a high degree of polish, and is readily stained with black, green, blue, or red. It weighs, when dry, at the rate of 47 lb. 7 oz. per cubic foot. The veins of the wood, and its annual layers, are so small as scarcely to be perceptible. It is applied to a great many purposes, in joinery, cabinet-making, and turnery; in engineering, in mathematical-instrument-making; and it is even used for wood engraving. It would be much more generally used in veneering, in Britain, if it were more common: but large trees are now comparatively rare; or, if they exist, they belong to persons who will not cut them down for their timber. One of the principal uses of the wood, at present, is, when dyed black, to be substituted for ebony, in the handles of metal teapots, &c.: the young shoots and the branches are given to sheep and deer, during winter, in France; and the stronger straight shoots, deprived of their bark, are made into whip handles and walkingsticks.

*The bark affords birdlime.* As this article may be useful to gardeners, not only for catching birds, but also for preventing snails, slugs, and caterpillars from ascending the stems of plants, we subjoin directions for its manufacture. "Peel a good quantity of the bark of the young shoots about midsummer; fill a vessel with it, and put to it spring water; then boil it till the grey and white bark rises from the green, which will require near 12 hours' boiling; then, taking it off the fire, separate the barks, the water being first drained off. Then lay the green bark on the earth, in some cool vault or cellar, covering it with any sort of green and rank weeds, litter, or mats, to a good thickness. Thus let it continue near a fortnight, by which time, in consequence of fermentation, it will have become a perfect mucilage; then pound it all exceedingly well in a stone mortar, till it be a tough paste, and so very fine, that no part of the bark be discernible. This done, wash it accurately well in some

running stream of water, as long as you perceive the least impurities in it, and so reserve it in some earthen pot to ferment, scumming it as often as anything arises, for four or five days; and, when no more filth comes to the top, change it into a fresh earthen vessel, and prepare it for use, thus:—Take what quantity you please of it, and, in an earthen pipkin, add a third part of capon's fat, or goose-grease, to it, well clarified, or oil of walnuts, which is better; incorporate these on a gentle fire, continually stirring it till it be cold; and thus your composition is finished." (*Hunter's Evelyn*, p. 268.) The use of the grease or oil is, to prevent the preparation from freezing; and also to diminish evaporation when the birdlime is spread out on the barks of trees, or other surfaces, to attract birds or vermin. At present birdlime is manufactured in but few parts of Britain, though in some parts of Cumberland and Westmoreland it is made in small quantities. It is made on a large scale in Italy, and also in Turkey; from which latter country it is imported into England for the use of London bird-catchers, and for other purposes. We recommend gardeners to try it on the stems of trees and shrubs, and on wires and lines stretched round flower-beds, as a protection against hares and rabbits.

*Medicinally*, a decoction of the bark is given for calming a cough. The berries are purgative, and six or eight of them will occasion violent vomiting; though they are considered as poisonous to men, yet they form the food of some birds, more especially of thrushes. The bark is mucilaginous, emollient, and solvent.

*The principal use of the holly in Britain*, after all, is as a hedge plant, and as an ornamental shrub, or low tree. In the latter capacity, it is surpassed by no evergreen whatever, whether we look on the plant in its native state, with its deep shining green leaves and coral berries, which remain on the tree for half the year; or in its numerous variegations of the gold or silver leaves, and white, yellow, or coral berries.

*Mythological, legendary, and poetical Allusions.* The use made of the holly at Christmas, for ornamenting churches and dwelling-houses, is well known; though the origin of the practice is uncertain. The custom of placing evergreens in places of religious worship prevailed before the introduction of Christianity; and several texts of Scripture, particularly in the 40th, 41st, 51st, and 55th chapters of Isaiah, and in the 8th chapter of Nehemiah, have reference to it: but the evergreens originally made use of were branches of the pine, fir, and cedar, and sprigs of box. Holly appears to have been first used for this purpose by the early Christians, at Rome; and was probably adopted for decorating the churches at Christmas, because holly was used in the great festival of the Saturnalia, which occurred about that period, and it was the policy of the early fathers of the church to assimilate the festivals of the Pagans and Christians as closely as possible in their outward forms, to avoid shocking unnecessarily the prejudices of newly made converts. It was customary among the ancient Romans to send boughs of holly, during the Saturnalia, as emblematical of good wishes, with the gifts they presented to their friends at that season; and the holly became thus to be considered as an emblem of peace and good-will. It was for this reason, independently of any wish to conciliate the Pagans, well adapted to be an emblem of the principal festival of a religion which professes, more than any other, to preach peace and good-will to man. Whatever may have been the origin of the practice, it appears to be of very great antiquity; for Bourne, in his *Antiquities of the Common People*, p. 173., cites an edict of the Council of Bracara, canon 73., forbidding Christians to begin to decorate their houses at Christmas with green boughs at the same time as the Pagans; the Saturnalia commencing about a week before Christmas. Dr. Chandler, in his *Travels in Greece*, supposes this custom to be derived from the Druids, who, he says, decorated dwelling-places with evergreens during winter, "that the sylvan spirits might repair to them, and remain unnnipped with frost and cold winds, until a milder season had renewed the foliage of their darling abodes." In England, perhaps the earliest record of this custom is in a carol in praise of the holly, written in the reign of

Henry VI., and preserved in the Harleian MS., No. 5396.; in illustration of which it must be observed, that the ivy, being dedicated to Bacchus, was used as a vintner's sign in winter, and hung outside the door.

“ Nay, Ivy, nay, it shall not be I wys ;  
Let Holy hafe the maystry, as the maner ys.  
Holy stond in the halle, fayre to behold ;  
Ivy stond without the dore ; she ys full sore a cold.

“ Holy and hys mery men they dawnsyn and they syng,  
Ivy and hur maydenys they wepyn and they wryng.  
Ivy hath a lybe ; she laghit with the cold,  
So mot they all hafe that wyth Ivy hold.

“ Holy hath berys as red as any Rose,  
They foster the hunters, kepe hem from the doo.  
Ivy hath berys as black as any slo ;  
Ther com the oule and ete hym as she goo.

“ Holy hath byrdys, aful fayre flok,  
The Nyghtyngale, the Poppyngny, the gayntyl Lavyrok.  
Good Ivy ! what byrdys ast thou !  
Non but the Howlet that ‘ How ! How ! ’ ”

Stowe, in his *Survey of London*, published in 1598, says that, in his time, every man's house, the parish churches, the corners of the streets, conduits, market crosses, &c., were decorated with holme (holly), ivy, and bayes, at Christmas. The disciples of Zoroaster believed that the sun never shadows the holly tree; and the followers of that philosopher who still remain in Persia and India, are said to throw water impregnated with holly bark in the face of a child newly born. In the language of flowers, the holly signifies foresight. A great number of curious carols, and other verses, ancient and modern, referring to the use of the holly at Christmas, will be found in Forster's *Perennial Calendar*, p. 727.; and an elegant poem by Southey, alluding to the circumstance of the lower leaves of large plants being spinous, while the upper are entire, is printed in Dr. Johnston's *Flora of Berwick upon Tweed*, vol. i. p. 40.

*Soil and Situation.* The holly attains the largest size in a rich sandy loam; but it will grow, and even thrive, on almost any soil, provided it is not overcharged with moisture. Cook says, it does best on soil somewhat gravelly; Miller, that it prospers on gravel over chalk; and Boutcher, that it refuses not almost any sort of barren ground, hot or cold, and often indicates where coals are to be found; a proof that it will grow both on lime and clay: in short, the holly is found on all soils, except in bogs or marshes. The forest of Needwood, which contains so many fine hollies, is on a free loamy soil, inclining to sand rather than to stiff clay; the largest hollies in the New Forest are on gravelly soil, on a substratum of chalk or clay. The largest hollies in Buckinghamshire, Kent, and Surrey, are in loam on chalk; the hollies at Tynningham are on deep alluvial sand; those in Aberdeenshire, on granitic clay. The holly does not grow at very great elevations in Europe; and it is always found in a most prosperous state when somewhat shaded by deciduous trees, but not overtopped by them. The most favourable situation seems to be a thin scattered wood of oaks, in the intervals of which, as at Needwood and New Forest, the holly grows up, at once sheltered, and partially shaded. At the same time, the holly will grow completely beneath the shade and drip of other trees; for which reason it is equalled as undergrowth by no other evergreen shrub or tree, except the box. The common laurel will also grow under the drip and shade of other trees; but it is more tender than either the box or the holly, and soon becomes naked below.

*Propagation and Culture.* In the days of Evelyn, it was customary for planters to collect seedlings of trees of different sorts from the woods; and this was more especially the case with the holly, on account of the length of time the seed lies in the ground before it comes up. “Of this noble tree,” Evelyn says, “one may take thousands of young plants, four inches long, out of the woods (growing amongst the fallen leaves), and so plant them; but this should be before the cattle begin to crop them, especially sheep, who are greedy of them when tender. Stick them into the ground, in a moist season,

in spring, or early in autumn, especially in the spring; shaded (if it prove too hot and searching) till they begin to shoot of themselves, and, in very sharp weather, and during our eastern etesians, covered with dry straw or haulme; and if any one of them seem to perish, cut it close, and you shall soon see it revive. Of these seedlings, and by this culture, I have raised plants and hedges, full 4 ft. high, in four years. The lustier and bigger the sets are, the better; and, if you can procure such as are a thumb's breadth thick, they will soon furnish into an hedge." (*Hunter's Evelyn*, p. 266.) Seedlings of holly, yew, and other indigenous trees, are still collected occasionally from the woods in country places, by the children of labourers, and sold to the local nurserymen; but the more general practice is, to raise the species from seeds, and the varieties by budding, grafting, or by cuttings.

*By Seeds.* As the seeds of the holly, like those of the hawthorn, do not come up the first year, to save ground, and the expense of weeding, the berries are commonly buried in the soil, or kept mixed up in a heap of earth for one year; this heap of earth, into which the berries are put as soon as gathered, should be turned over several times in the course of the season, to facilitate the rotting of the pulp and husks. This will generally be effected by the autumn succeeding that in which they were gathered from the tree; and they may then be taken, and separated from the earth with which they were mixed, by sifting, and sown in beds of finely prepared soil, and covered about a quarter of an inch. Thus prepared, when sown in autumn, they will come up the June following. A covering of half-rotten leaves, fronds of fern or spruce fir, or even of litter or straw, placed over the seed-beds, will protect the soil from extreme heat and drought, and will greatly facilitate the progress of the germination. In Scotland and in Ireland, this is seldom found necessary; but in England and in France, the climate being warmer in the beginning of summer, and the air drier, it is found a great advantage. As the holly is apt to suffer from transplanting, it should never be kept in the nursery longer than two years in one place. When the seeds are to be sown as soon as gathered, *Boutcher* directs that the berries should hang on the trees till December; or, if they could be defended from birds, till February or March. As soon as they are gathered, he says, "throw them into a tub with water, and rub them between your hands till the seeds are divested of their thick glutinous covering; pour off the water, with the light seeds that swim, the mucilage, &c., and spread the sound seeds on a cloth, in a dry airy place, rubbing them often, and giving them a fresh cloth daily till they are quite dry. If this be done in autumn or winter, mix them with sand, and keep them dry till spring; but, if they have been gathered in spring, let them be sown immediately." (*Mart. Mill.*) *Bradley* suggests a method of forwarding the germination of the seeds of the holly, and other hard seeds, by fermenting them with moist bran; but the difficulty of keeping the temperature such as, while it decomposes the pulp of the berries, shall not destroy their vital principle, seems to render this a very precarious process.

*Budding and Grafting.* These operations are performed at the usual times, and in the usual manner; but it has been observed by *Tschoudi*, that cleft-grafting does not succeed nearly so well with the holly as whip-grafting or budding. In England, the stocks budded or grafted on are generally of four or five years' growth; and the grafting is effected in March, and the budding in July.

*Cuttings.* These are made in autumn, of the ripened summer shoots. They are planted in sandy soil, in a shady border, and covered with hand-glasses; and they generally put forth roots the following spring. The lower branches of the common holly, in Ireland, we are informed, strike as readily by cuttings as those of the common willow, emitting roots from every part of the shoot, as well as from the joints. This facility of rooting in Ireland may be owing to the moisture of the climate of that country; experience proving that the branches of trees and shrubs which are grown nearest the ground, or on the north side of the plant, so as to be kept shaded and moist, always root

easier than those which have been taken from higher parts of the tree, and more exposed to the influence of light and air; the moisture and the shade being the predisposing causes for the production of roots.

*After-culture in the Nursery.* No plant requires less care than the holly, when it is once established: the species can hardly be said even to need pruning; and the varieties which have been grafted or budded require little more than the removal of shoots from the stock. To fit them for removal, however, whether of a large or small size, they ought to be taken up and replanted every other year.

*Final Planting.* When the holly is to be planted as a hedge, if it is intended that the growth shall be rapid, the soil ought to be trenched to the depth of 3 ft. or 4 ft. If the subsoil be bad, the most effective mode is to take out a trench, in the direction of the hedge, of 3 ft. or 4 ft. wide, and of the same depth; and to fill up this trench with good surfaces from the adjoining ground. The soil in the trench ought to be raised at least a foot above the adjoining surface, to allow for sinking; and along the middle of this ridge, the hollies might be planted at 1 ft. or 18 in. apart. In some cases, the seeds may be sown on such a ridge; but that mode involves the expense of fencing for a greater number of years than the mode by transplanting. By some, the best mode of planting a holly hedge is said to be, to intermix it with the common thorn, and, as the hollies advance, to cut the thorns out. This may be a convenient mode; but it must be evidently a very slow and uncertain one, and must depend so much upon the constant attention paid, to keep the thorns from overpowering the hollies, and, at the same time, to keep their branches sufficiently intermingled with each other to render the fence effective, that we can by no means recommend it as an eligible practice.

*Season for transplanting the Holly.* Much has been written in gardening books respecting the proper season for transplanting evergreens; and what is remarkable is, that, while summer and autumn are generally stated to be the proper seasons, the spring, and during mild weather in winter, are the seasons most generally adopted in practice. The principle which justifies the practice is, that all plants whatever, with very few exceptions, are most safely removed when the whole plant is in a comparatively dormant state, and when the weather is temperate, and the air moist and still, rather than dry and in motion. Now, it is known that the greatest degree of torpidity in any plant exists a short time before it begins to grow or push out shoots; consequently, as evergreens begin to grow only a week or two later than deciduous trees of the same climate, the proper time for transplanting them cannot differ much from the proper time for transplanting deciduous trees. The chief difference to be attended to is, the circumstance of evergreen trees being at no time whatever in so completely a dormant state as deciduous ones; and hence, such weather, in the winter, autumn, or spring, must be chosen for removing them, as will least affect their fibrous roots and leaves by evaporation. This is in perfect accordance with the practice of the best gardeners; and it has been laid down as the best mode, founded on experience, by Mr. M'Nab, the intelligent curator of the Edinburgh Botanic Garden, and author of a valuable pamphlet, entitled *Hints on the Planting and general Treatment of Hardy Evergreens, &c.*, of which an account will be found in the *Gardener's Magazine*, vol. vii. p. 78.

*Culture of the Holly in useful and ornamental Plantations.* Holly hedges, according to Miller, should never be clipped, because, when the leaves are cut through the middle, they are rendered unsightly; and the shoots should therefore be cut with a knife close to a leaf. There can be no doubt that this is the most suitable mode for hedges that are to be near the eye: for example, in gardens and pleasure-grounds; but, as this method leaves a rougher exterior surface, and involves a much greater expense, than clipping, it is unsuitable where the object is to prevent birds from building in the hedges, and to maintain effective fences at the least expense. The proper season for clipping would appear to be just after the leaves have attained maturity; because

at that season, in the holly, as in the box, the wound is comparatively obliterated by the healing over produced by the still abundant sap. When it is desired to grow the holly for timber, it should be planted in close plantations, like other forest trees; either with or without nurse trees, according to the situation; and the stems should be deprived of the side branches, when they are under half an inch in diameter, to a certain height, say a fourth of the entire height of the tree, in order to produce a clean trunk.

*Statistics. Hollies in ancient Times.* Pliny tells us that "Tiburtus built the city of Tibur near three holly trees; over which he had observed the flight of birds that pointed out the spot whereon the gods had fixed for its erection; and that these trees were standing in his own time, and must, therefore, be upwards of 1200 years old. He also tells us that there was a holly tree, then growing near the Vatican, in Rome, on which was fixed a plate of brass, with an inscription engraven in Tuscan letters; and that this tree was older than Rome itself, which must have been more than 800 years." (Book xvi. chap. 44.) This author notices a holly tree in Tusculum, the trunk of which measured 35 ft. in circumference, and which sent out ten branches, of such magnitude, that each might pass for a tree. He says, this single tree alone resembled a small wood. Cole tells us, in his *Paradise of Plants*, that he knew a tree of this kind which grew in an orchard; and the owner, he says, "cut it down, and caused it to be sawed into boards, and made himself thereof a coffin; and if I mistake not, you may imagine the tree could not be small." (*Sylva Florifera*, i. p. 283.) Bradley, in 1756, mentions hollies above 60 ft. high, in the holly walk, near Frencham, in Surrey, in sandy soil. Evelyn mentions some large ones near his own place, at Wooton, in Surrey, in the neighbourhood of which once grew there. The names of Holmsdale, Holmwood, and Holme Castle occur in various parts of Scotland, and are generally supposed to have been applied in consequence of the abundance of hollies at these places at the time the names were given. Hayes mentions a variegated silver holly at Ballygannon, in Ireland, 28 ft. high, with a trunk, 5 ft. in circumference; and another, on Inishfallen Island, in the Lake of Killarney, with a trunk 15 ft. in circumference, and about the same height before it began to branch out.

*Ilex Aquifolium in the Environs of London.* At Syon, *I. A. aëreo-marginatum* 50 ft. high, and *I. A. albo-marginatum* 35 ft. high; at York House, Twickenham, the species 50 years planted, and 40 ft. high; at Mount Grove, Hampstead, 25 ft. high, the diameter of the trunk 16 in., and of the head, 20 ft.; at Ham House, 33 ft. high, diameter of the trunk 21 in., and of the head 31 ft.; in the Fulham Nursery, 30 years planted, and 40 ft. high.

*Ilex Aquifolium South of London.* In Cornwall, at Port Elliott, 70 years planted, and 40 ft. high, the diameter of the trunk 3 ft. 3 in., and of the head 52 ft. In Devonshire, at Killerton, 33 ft. high; at Endsleigh Cottage, *I. A. aëreo-marginatum*, 22 years planted, and 21 ft. high; at Kempton, 45 ft. high. In Dorsetshire, at Compton House, 100 years planted and 40 ft. high, diameter of the trunk 2 ft. 2 in. In the Isle of Jersey, in Saunders's Nursery, 10 years planted, and 16 ft. high. In Hampshire, at Alresford, 30 years planted, and 40 ft. high. In Somersetshire, at Nettlecombe, 100 years planted, and 27 ft. high. In Surrey, at Claremont, 80 ft. high (the highest in England), the diameter of the trunk 2 ft. 2 in., and of the head 25 ft., in sandy loam, on gravel, and drawn up among other trees; at Walton on Thames, 40 years planted, and 25 ft. high, the branches spreading over a space 76 ft. in diameter; at Pepper Harrow Park, various trees from 60 ft. to 70 ft. high; at Bagshot Park, 40 ft. high. In Sussex, at Cowdray, 53 ft. high. In Wiltshire, at Wardour Castle, 40 years planted, and 25 ft. high, diameter of the trunk 2 ft. 4 in., and of the head 54 ft.

*Ilex Aquifolium North of London.* In Berkshire, at Hampstead Marshall, there are various trees from 40 ft. to 50 ft. high, with trunks from 4 ft. to 5 ft. in diameter. In Cheshire, at Kinnel Park, 20 years planted, and 26 ft. high, in sandy loam, on moist clay. In Cumberland, at Pensonby Hall, many specimens 30 ft. high. In Durham, at Southend, 8 years planted, and 13 ft. high. In Essex, at Hylands, 10 years planted, and 18 ft. high. In Monmouthshire, at Dowlais House, 30 years planted, and 18 ft. high. In Norfolk, at Merton, one 61 ft. high, with a trunk 4 ft. in diameter; and two others nearly as large. In Staffordshire, at Trentham, 26 ft. high. In Rutlandshire, at Belvoir Castle, 7 years planted, and 8 ft. high. In Warwickshire, at Whitley Abbey, 160 years planted, and 43 ft. high. In Worcestershire, at Croome, 35 years planted, and 40 ft. high. In Yorkshire, at Hackness, 50 years planted, and 30 ft. high; at Grimston, in argillaceous soil, 37 ft. high; and at Cannon Hall, the species 38 ft. high, *I. A. albo-marginatum* 39 ft. high, *I. A. aëreo-marginatum* 32 ft. high, and *I. A. ferox* 19 ft. high.

*Ilex Aquifolium in the Environs of Edinburgh.* At Hopetoun House, 100 years planted, 44 ft. high, diameter of the trunk 2 ft. 1 in., and of the head 30 ft., on clay; at Craigie Hall, 20 ft. high; at Woodhouse Lee, a hedge, upwards of 100 ft. long, and 30 ft. high; at Cramond House, 20 ft. high; at Moredun, a hedge, planted in the beginning of the eighteenth century, 378 ft. long, 20 ft. high, 9 ft. wide at bottom, and 4 ft. wide at top, annually clipped; at Collinton, 1120 ft. of holly hedges, planted in 1670 and 1780, and varying from 15 ft. to 28 ft. in height, clipped every three years.

*Ilex Aquifolium South of Edinburgh.* In East Lothian, at Gosford House, 20 ft. high; at Biel, 100 years planted, 3½ ft. high; at Tynningham, 2952 yards of holly hedges, chiefly planted in 1712, from 10 ft. to 25 ft. in height, and from 9 ft. to 13 ft. wide at the base; and single trees, varying in height from 20 ft. to 50 ft. Most of the hedges are regularly clipped in April, and they are carefully protected by the bark, shoots, and young leaves of the holly. In Kirkeudbrightshire, at Bargally, there are several varieties, above 140 years planted, and from 30 ft. to 40 ft. high.

*Ilex Aquifolium North of Edinburgh.* In Argyllshire, at Toward Castle, various trees, from 25 ft. to 30 ft. high, with trunks from 18 in. to 20 in. in diameter, and that of the heads from 20 ft. to 30 ft., on gravelly loam. In Banffshire, at Gordon Castle, 52 ft. high, the trunk 2 ft. 6 in. in diameter, and the soil a strong loam on a strong clay. (See the dimensions of numerous hollies at Gordon Castle, in *Gard. Mag.*, vol. iii. p. 185.) In Fifeshire, at Danibristle Park, 44 ft. high, the diameter of the trunk 25 in., and of the head 18 ft., on strong loam. The trees here, and at Gordon Castle, prove that, if the holly were drawn up in a close plantation, like the larch or pine, it would, like them, produce a clean straight trunk, of a timber-like size, in a moderate space of ground and time. In Perthshire, at Taymouth, 30 ft. high. In Renfrewshire, at Bothwell Castle, 45 years planted, and 46 ft. high, the diameter of the trunk 15 inches, and of the head 38 ft., in heavy loam on moist clay. In Sutherlandshire, at Dunrobin Castle, 43 ft. high, the diameter of the trunk 17 in., and of the head 25 ft., in black heath soil, on gravel.

*Ilex Aquifolium* in the Environs of Dublin. At Castle Town, 30 ft. high, the trunk 18 in., and the head 30 ft. in diameter; at Cypress Grove, 30 ft. high; at Terenure, 40 years planted, and 30 ft. high, in dry soil, on a calcareous subsoil; in Cullenswood Nursery, *I. A. crœceum*, [?] 12 years planted, and 17 ft. high.

*Ilex Aquifolium* South of Dublin. In King's County, at Charleville Forest, 40 years planted, and 45 ft. high, diameter of the trunk 32 in., and of the head 28 ft., in brown loam, on gravel. In Munster, at Castle Freke, 32 ft. high.

*Ilex Aquifolium* North of Dublin. In Louth, at Oriel Temple, the species and several varieties, from 20 ft. to 30 ft. high. In Down, at Ballylead, 60 years planted, and 34 ft. high. In the Park, at Moira, 25 ft. high. In Antrim, at Belfast, in Mr. Templeton's garden, 15 ft. high.

*Ilex Aquifolium* in Foreign Countries. In France, in the Jardin des Plantes, 50 years planted, and 30 ft. high; in the Botanic Garden at Toulon, 48 years planted, and 18 ft. high; at Nantes, in the nursery of M. Nerrin, 60 years planted, and 30 ft. high. In Saxony, at Wörlitz, 35 years planted, and 16 ft. high. In Austria, at Brüick on the Leytha, 30 years planted, and 12 ft. high. In Prussia, the holly grows wild in a forest 20 miles from Berlin, nevertheless, in the Berlin Botanic Garden, it requires protection during winter; at Sans Souci, 9 years planted, it has attained the height of 8 ft. In Hanover, at Harbecke, 6 years planted, it has attained the height of 3 ft.; in the Botanic Garden at Göttingen, it requires protection during winter. In Denmark, in the Royal Gardens at Copenhagen, it is 3 ft. or 4 ft. high, and requires protection. In Sweden, in the Botanic Garden at Lund, it is 2½ ft. high, and requires protection. In Italy, at Monza, 30 years planted, it is 20 ft. high.

*Commercial Statistics.* In the London nurseries, two years' seedlings of the species are 7s. a thousand; transplanted plants of 3 and 4 years' growth, from 8s. to 10s. a thousand; variegated hollies, in sorts, one and two years planted, from 50s. to 75s. a hundred. At Bollwyller, the species, of 3 or 4 years' growth, is 1 franc a plant, and the different varieties 3 francs each. At New York, the species is 50 cents a plant, and the different varieties, which, in that part of America, require protection during winter, are 1 dollar each.

‡ 2. *I. (A.) BALEA'RICA* Desf. The Minorca Holly.

*Identification.* Desf. Arb., 2. p. 262.; Don's Mill., 2. p. 17.

*Synonymes.* *I. Aquifolium* var. ♂ Lam. Dict., 3. p. 145.; *I. made-rénsis* Willd. Enum. Suppl., 8. according to Link.

*Engraving.* Our fig. 183.

*Spec. Char., &c.* Leaves ovate, acute, flat, shining, entire, or spiny-toothed. Umbels axillary, few-flowered, short. (*Don's Mill.*, ii. p. 17.) A very distinct variety of the common holly, readily distinguished at sight, by its yellowish green leaves, which are sharply acuminate, but very slightly waved at the edges, and with few prickles. As it is considered by some authors as a species, and has very much the appearance of one, we have thought it best to keep it apart. It is propagated by budding or grafting on the common holly. There were formerly large plants of this species in the Mile End Nursery. Plants, in the London nurseries, are 5s. each. At Bollwyller and New York it is a green-house plant.

‡ 3. *I. OPA'CA* Ait. The opaque-leaved, or American Holly.

*Identification.* Ait. Hort. Kew, 1. p. 177.; Dec. Prod., 2. p. 14.; Don's Mill., 2. p. 17.

*Synonymes.* *Agri-folium vulgare* Clayt. Flor. Virgin.; *Ilex Aquifolium* Gronov. and Walt. Fl. Car. 241.

*Engravings.* E. of Pl., No. 1824.; and the plate of the species in our Second Volume.

*Spec. Char., &c.* Leaves ovate, flat, coriaceous, acute, toothed in a scalloped manner, spiny, and glabrous, but not glossy. Flowers scattered, at the base of only those branches that are a year old. Teeth of the calyx acute. Sexes dioecious. (*Dec. Prod.*, ii. p. 14.) A beautiful evergreen tree, a native of North America, from Canada to Carolina, sometimes, according to Pursh, growing to the height of 80 ft., with a trunk 4 ft. in diameter. Introduced in 1744. The flowers are white, and produced in May and June, and the berries are scarlet, round, and handsome, remaining on all the winter. According to Rafinesque, in the northern parts of North America this species forms a bush under 10 ft. in height; its medium height, in favourable situations, being about 40 ft. This species was formerly supposed to be only a variety of *I. Aquifolium*. In America, it is applied to all the uses which the common holly is in Europe. It forms hedges; is an



ornamental tree or shrub in gardens; is employed for making birdlime; and the wood is used in turnery and cabinet-making. It is propagated in the same manner as the common holly. There is a plant of this species in the garden at Walton House 25 ft. high; a large one at Syon; and many fine plants at White Knights. Plants, in London, are 1s. 6d. each; at New York, 40 cents, and seeds 1 dollar a quart.

*Varieties.* There are none in the British gardens; but Rafinesque mentions *I. o. 2 macrondon*, with remote long teeth; *I. o. 3 latifolia*, with broad ovate leaves, rounded at the base, and small teeth; *I. o. 4 acuminata*, with narrow and very sharp leaves; and *I. o. 5 globosa*, a small plant, with a globose foliage. These names are not in Prince's *Catalogue*; but we hope some collector will procure them from their native habitats, and send them to England.

4. *I. (O.) LAXIFLORA Lam.* The loose-flowered Holly.

*Identification.* Lam Dict., 3. p. 147; Dec. Prod., 2. p. 14; Don's Mill., 2. p. 17.

*Synonymes.* A variety of *I. opaca*, according to Nuttall, Dec.; *I. Aquifolium baccis flavis Walt Fl. Carol.*, 241.

*Spec. Char., &c.* Leaves ovate, sinuately toothed, spiny, coriaceous, glabrous. Stipules awl-shaped. Peduncles loosely branched, bearing many flowers, and placed in a scattered manner above the axils of the leaves. Teeth of the calyx acute. Fruit yellow. (*Dec. Prod.*, ii. p. 14.) Described by Pursh as an evergreen shrub, of lower growth than *I. opaca*; found in Carolina, in shady sandy woods, with whitish flowers, and yellowish red berries. It produces its flowers in May and June, and was introduced into England in 1811. We have not seen this sort, but think it, in all probability, only a variety. Seeds of it are advertised in Mr. Charlwood's *Catalogue* at 4s. a quart.

B. *Leaves toothed, serrated, or crenate, but not spiny.*

5. *I. CASSINE Ait.* The Cassine-like, or broad-leaved Dahoon, Holly.

*Identification.* Ait. Hort. Kew, p. 170; Dec. Prod., 2. p. 14; Don's Mill., 2. p. 17.

*Synonymes.* *Aquifolium carolinense Catesb. Car.*, 1. t. 31; *I. caroliniana Mill. Dict.*, No. 3; *I. cassinoides Link. Enum.*, 1. p. 148; *I. Dahoon Walt. Fl. Car.*, 241; the Cassena of the American Indians, Rafin.

*Engravings.* *Catesb. Car.*, 1. t. 31; *E. of Pl.*, No. 1828.

*Spec. Char., &c.* Leaves ovate-lanceolate, sharply sawed, flat; the midribs, petioles, and branchlets glabrous; the flowers upon lateral corymbosely branched peduncles. (*Dec. Prod.*, ii. p. 14.) An evergreen low tree, from 8 ft. to 12 ft. in height; a native of Lower Carolina and Florida, in shady swamps; and introduced into England in 1700. The flowers are small, and of a yellowish white; they are produced in August, and are succeeded by round red berries rather smaller than those of the common holly. The berries continue on the trees the most part of the winter, untouched by birds; and, being of a bright red, and large in proportion to the leaves, which are about the size of those of the common arbutus, they make a fine appearance, both in their native country and in England. The leaves and young shoots of this species are used by the Indians for the same purposes as those of *I. vomitoria* and *I. Dahoon*. This species is not unfrequent in British collections: there is a specimen of it, 10 ft. high, in the arboretum of Messrs. Loddiges, and a small one in the garden of the Horticultural Society. It is commonly propagated by seeds; but it will also strike by cuttings, or it may be grafted on the common holly. Plants, in the London nurseries, cost 2s. 6d. each; at New York, 1 dollar, and seeds 2 dollars a quart.

184



*Variety.*

1. *I. C. 2 angustifolia (fig. 184)*, with oblong-lanceolate sub-entire leaves, is mentioned in the *Nouveau Du Hamel*.

6. *I. ANGUSTIFOLIA Willd.* The narrow-leaved Holly.

*Identification.* Willd. Enum., 1. p. 172; Dec. Prod., 2. p. 14; Don's Mill., 2. p. 17.

*Synonymes.* *I. myrtifolia Walt. Carol.*, 241, *N. Duh.*, and *Lodd. Cat.*; *I. rosmarinifolia Lam. Ill.*, 1. p. 356.

*Engravings.* *N. Duh.*, 1. t. 4; and our *fig. 185*.

*Spec. Char., &c.* Leaves linear-lanceolate, sawed at the tip, rather revolute in the margin; the midrib, petiole, and branchlets glabrous. Flowers in stalked lateral cymes. (*Dec. Prod.*, ii. p. 14.) An evergreen shrub, from 6 ft. to 10 ft. high, found in deep swamps from Virginia to Georgia, and introduced in 1806. The flowers are white, and appear in June; the berries are globular and red. A very handsome species, but not very common. There are plants of it at Messrs. Lodiges, and in the London Horticultural Society's Garden, under the name of *I. myrtifolia*.



*Variety.*

- ♣ 1. a. 2 *ligustrifolia* Ph., with oblong, ovate, entire leaves, is given by Pursh, who doubts whether it may not be a distinct species.

♣ 7. *I. VOMITO'RIA* Ait. The emetic Holly, or South Sea Tea.

*Identification.* Ait. Hort. Kew., 1. p. 278; Dec. Prod., 2. p. 14; Don's Mill., 2. p. 17.  
*Synonymes.* *I. Cassine vera* Walt. Carol., 241; *I. figuistrina* Jacq. Coll., 4. p. 105. *Icon. Rar.*, t. 310. *Wendl. Hort.*, t. 31.; *Cassine Perùgia* Mill. Icon., t. 83. f. 2.; *I. Cassena* Michx. Fl., 1. p. 229.; *I. religiosa* Bart. Fl. Virg., 69.; *I. floridana* Lam. Ill., No. 1731.; *Houx apalachine* Fr.; true Cassena, Cassena, Floridan; the Yapon, Virginian; the evergreen Cassena, or Cassiberry Bush, Eng.

*Engravings.* Jacq. *Icon. Rar.*, t. 310.; *Wendl. Hort.*, t. 31.; *Mill. Fig.*, t. 83. f. 2.; and our fig. 186.

*Spec. Char., &c.* Leaves oblong or elliptic, obtuse at both ends, crenately sawed, and, with the branchlets, glabrous. Flowers in subsessile lateral umbels. (*Dec. Prod.*, ii. p. 14.) An elegant evergreen tree, a native of Florida, Carolina, and Virginia, in moist shady places, growing to the height of 12 ft. or 15 ft., and introduced in 1700. The flowers, which are whitish, are produced in June; and the berries, which resemble in colour those of the common holly, remain on the tree all the winter. It was cultivated by Miller, and in several other gardens in the neighbourhood of London, till the severe winter of 1789, when most of the plants of it were destroyed.



Other plants were afterwards raised from seed, and they have ever since resisted the cold of ordinary winters without covering. In the first edition of *Du Hamel*, it is stated, that this species had been a long time cultivated by the Chevalier Jansen, in his garden at the Barrière Chaillot, at Paris. *Rafinesque* states that the true cassena is reckoned a holy plant by many of the southern tribes of American Indians, being used, during their religious rites and solemn councils, to clear the stomach and the head. Women are forbidden to use it. For these purposes the leaves and young shoots are collected with care, and, when dried, form an article of trade among the tribes. They often parch or scorch slightly the leaves before using them. They are inodorous, the taste is sub-aromatic and fervid, and they are useful in stomach fevers, diabetes, small-pox, &c., as a mild emetic; but the Indians' black drink is a strong decoction of them, and a violent, though harmless, vomitive. In North Carolina, the inhabitants of the sea-side swamps, having no good water to drink, purify it, by boiling it with a little cassena (perhaps *Viburnum cassinoides*), and use it constantly warm, as the Chinese do their daily tea. *I. Dahoón* and *I. Cassine* are used as substitutes for the cassena; and many other shrubs appear to be used indiscriminately for making the black drink: for example, the *Cassine ramulosa* of the *Flora of Louisiana*. (*Raf. Med. Flor.*, i. p. 9.) The use made of the leaves in Carolina and Florida, by the native Indians, has given rise to the opinion that this species was the Paraguay tea mentioned in *Martyn's Miller*, on

the authority of M. Frezier: but the species which produces that article is the *I. paraguariensis* Lam., which will be hereafter noticed. *I. vomitoria* is not very common in British collections; but there are plants of it in Loddiges's arboretum, and in the garden of the London Horticultural Society. Price, at New York, 1 dollar a plant, and seeds 2 dollars a quart.

*C. Leaves quite entire, or nearly so.*

♯ 8. *I. CANARIENSIS* Poir. The Canary Island Holly.

*Identification.* Poir. Suppl., 3. p. 67; Dec. Prod., 2. p. 14.; Don's Mill., 2. p. 19.

*Spec. Char., &c.* Leaves ovate-lanceolate, flat, rather acute, entire, glossy. Flowers in axillary umbels, few in an umbel. Peduncle longer than the petioles. Fruit black. (*Dec. Prod.*, ii. p. 14.) Flowers white, truly dioecious. (*Don's Mill.*, ii. p. 19.) An evergreen tree, a native of the Canary Islands, introduced in 1820. The fruit of this species is said to be black. We have not seen the plant.

♯ 9. *I. DAHOON* Wall. The Dahoon Holly.

*Identification.* Walt. Fl. Carol., 241.; Dec. Prod., 2. p. 14.; Don's Mill., 2. p. 19.

*Synonyme.* *I. Cassine* Willd. Hort. Berol., 1. t. 31.

*Engraving.* Willd. Hort. Berolin., t. 31., under the name of *I. Cassine*.

*Spec. Char., &c.* Leaves lanceolately elliptical, nearly entire, almost revolute in the margin; the midrib, petiole, and branchlets villous. Flowers disposed in corymbose panicles, that are upon lateral and terminal peduncles. (*Dec. Prod.*, ii. p. 14.) A beautiful evergreen shrub or low tree, found in open swamps from Carolina to Florida, and introduced in 1726. In British gardens, it grows to the height of 6 ft. or 8 ft., producing its white flowers in May and June, which are succeeded by berries, which become red in September. The leaves of this species are very numerous, and resemble those of *Laurus Borbonia*. In America, as already noticed under No. 7., they are used in the same manner as *Ilex vomitoria*. The species is scarce in British gardens, and seldom ripens fruit. It is most commonly kept in green-houses or pits; but there is a plant in the open air, in the Mile End Nursery, which was 20 ft. high, with a head 30 ft. in diameter. It had stood there many years, without the slightest protection. Plants, in London, are 2s. 6d. each, and seeds 6s. a quart; at Bollwyller, where it is a green-house plant, 3 francs each; at New York, where it requires protection during winter, 1 dollar.

*Variety.*

♯ 1. *D. 2 laurifolia* Nutt. has leaves large, elliptical, acutish, and pedicels elongated, and usually 3-flowered. It is a native of Eastern Florida, and almost evergreen.

App. i. *Hardy Species of Ilex not yet introduced.*

*Ilex odorata* Hamilt. in D. Don's *Prod. Fl. Nep.*, p. 189., is a tree, a native of Nepal, with sweet-scented flowers, which would be a very desirable addition to the species cultivated in British gardens. *I. cuneifolia* Lin. Spec., 181., is a native of North America, of which very little is known; and there is a variety of it (*I. c. bonariensis*, said to be a native of Buenos Ayres) which grows to the height of 10 ft. *I. ligustrifolia* G. Don, the *I. angustifolia* of Nuttall (*Gen. Amer.*, i. p. 109.), is said to be an evergreen shrub of Virginia and Georgia; and very probably is the same as *I. angustifolia* of Willd. No. 6. *I. nepalensis* Spreng. (the *I. elliptica* of D. Don) is a Nepal shrub, growing to the height of 8 ft. As all these species are evergreens, they would form a most desirable addition to our woody plants of that kind, more especially the *I. odorata*.

App. ii. *Species of Ilex which may probably be found half-hardy.*

*I. dipyrrena* Wall. is an evergreen tree or shrub of Nepal and Chinese Tartary, growing to the height of 12 ft., and bearing, according to Mr. Royle, a close resemblance to the common holly, especially when covered with its clusters of scarlet berries in November and December. *I. excelisa* Wall. and *I. serrata* Royle are both lofty Nepal species, certainly half-hardy, and probably quite hardy. (*Illust.*, p. 175.) *I. Perado At.*, the *I. maderensis* of Lam., (*fig. 187.*) is a low tree of Madeira, common in our green-houses; but, according to the *Nouveau Du Hamel*, it is much harder than is generally imagined, and will stand the open air as well as the common myrtle. There is a plant of it grafted on the common holly, in the garden of the Horticultural Society, which has stood out for several winters as a standard, in the garden, without the slightest protection. *I. chinensis* Sims (*Bot. Mag.*, 2043., and our *fig. 188.*) is an evergreen tree, about 20 ft. high, from China, introduced in some as only a variety of the common holly. *I. macrophylla* is a Japan tree. *I. elliptica* H. B. et Kunth is a native of Peru; and also *I. scopulorum* and *I. rupticola* of the same authors: the two latter are trees; and, if they could be made to endure the open air in Britain, would be most desirable additions. *I. Paltoria Pers.* is an evergreen shrub, a native of Peru or New Granada, on the highest mountains; and, in all probability, is quite hardy. *I. emarginata* Thunb. and *I. crenata* Thunb. are natives of Japan. *I. serrata* Thunb. and *I. latifolia* Thunb. are also natives of Japan: the latter is a tree growing to the height of 20 ft. *I. myricoides* Thunb. et Kunth is a native of New Granada,



on mountains. *I. asiatica* Lin. Spec., 710, is a native of the East Indies. *I. integra* Thunb. and *I. rotunda* Thunb. are Japan shrubs. *I. bumelioides* H. B. et Kunth is a tree of Peru. A number of these species are introduced, and occasionally to be found in our green-houses; and the others, if they could be procured, would doubtless thrive in the open air in the warmest parts of Devonshire and Cornwall, and, perhaps, at least half of them in the neighbourhood of London. *I. paraguayensis* Lamb. Pin., vol. 2., App., t. 2., and our fig. 189, though commonly treated as a stove plant, might possibly succeed in the warmest parts of Devonshire, against a wall, as well as the orange tree. This shrub or tree affords what is called the Paraguay tea, from which the Jesuits of Paraguay derive a large revenue. The leaves are used in Paraguay, La Plata, Chili, Peru, and Quito, by all classes of persons, and at all hours of the day, by infusion in a pot, called *mate*, from the spout of which the tea is drunk, with or without a little sugar or lemon juice. The Creoles drink the infusion at every meal, and never eat until they have taken some of it. If the water is suffered to remain long on the leaves, the decoction becomes as black as ink. The pipe to the *mate*, or teapot, called a *bambilla*, is perforated with holes at the top, to prevent swallowing the pulverised herb, which swims on the surface. The whole party is supplied by handing the *mate* and pipe from one to another, filling up the *mate* with hot water as fast as it is drunk out. The leaves, when green, taste somewhat like mallow leaves: they are prepared for use by being parched, and almost pulverised; after which they are packed up for sale. The aromatic bitterness which the herb possesses when first prepared is partly dissipated by carriage. The principal harvest of the herb is made in the eastern part of Paraguay, and about the mountains of Maracaja; but it is also cultivated in the marshy valleys which intervene between the hills. The people boast of innumerable qualities which this herb possesses: it is certainly aperient and diuretic; but the other qualities attributed to it are rather doubtful. Like opium, it gives sleep to the restless, and spirit to the torpid; and, like that drug, when once a habit is contracted of using it, it is difficult to leave it off; and the effect of it on the constitution is similar to that produced by the immoderate use of spirituous liquor. (*Don's Mill.*, ii. p. 18.; and *Mag. Nat. Hist.*, vol. v. p. 8. and p. 9.) Plants of this species were introduced into England in 1828, and are to be found in one or two collections.

## GENUS III.



*PRINOS* L. THE PRINOS, or WINTER BERRY. *Lin. Syst.* Hexándria Monogýnia, or Polygámia Diœcia.

*Identification.* *Lin. Gen.*, No. 461.; *Dec. Prod.*, 2. p. 16.; *Don's Mill.*, 2. p. 20.

*Synonymes.* *Agéria Adans. Fam.*, 2. p. 166.; *Apalanche, Fr.*; *Winterbeere, Ger.*

*Derivation.* From *prinos*, the Greek name for the holly, which the present genus much resembles; or, according to others, from *prion*, a saw, on account of the serrated leaves of the species. The species are deciduous or evergreen shrubs, natives of North America, from 2 ft. to 8 ft. in height, forming compact upright bushes, densely clothed with foliage.

§ i. *Prinoides* Dec.

*Sectional Characteristic.* Flowers usually 4—5-cleft. (*Dec. Prod.*, ii. p. 16.)

1. *P. DECIDUUS* Dec. The deciduous Winter Berry.

*Identification.* *Dec. Prod.*, 2. p. 16.; *Dec. Prod.*, 2. p. 17.; *Don's Mill.*, 2. p. 20.

*Synonymes.* *Plex prinoides* *Ait. Hort. Kew.*, 2. p. 278.; *Plex decidua* *Walt. Fl. Carol.*, 241.

*Spec. Char., &c.* Leaves deciduous, elliptic-lanceolate, tapered to the petiole, shallowly sawed; the midrib villous beneath; the peduncles axillary; those

of the male flowers several together ; of the female ones, singly. Berries red. (*Dec. Prod.*, ii. p. 16.) A deciduous shrub, growing to the height of 4 ft. ; a native of North America, from Virginia to Georgia, on rocky shady banks of rivers ; and introduced in 1736. It produces its white flowers in June and July, which are succeeded by large crimson berries. Plants of the species are in Loddiges's Nursery, under the name of *I. prinoides*.

*Variety.* *P. d. 2 æstivalis*, *Ilex æstivalis* Lam. The adult leaves glabrous on both surfaces. (*Dec. Prod.*, ii. p. 17.)

2. *P. AMBIGUUS* Michx. The ambiguous Winter Berry.

*Identification.* Michx. Fl. Bor. Amer., 2. p. 236. ; *Dec. Prod.*, 2. p. 17. ; Don's Mill., 2. p. 20.

*Synonymy.* *Cassine caroliniana* Walt. Fl. Carol., p. 242.

*Engravings.* Wats. Dend. Brit., t. 29. ; and our fig. 190.

*Spec. Char., &c.* Leaves deciduous, oval, acuminate to both ends ; both adult ones and young ones glabrous in every part. Peduncles of the male flowers crowded together in the lower parts of the branchlets ; of the female ones, singly. (*Dec. Prod.*, ii. p. 17.) A deciduous shrub, found in sandy wet woods, and on the borders of swamps, from New Jersey to Carolina ; growing to the height of 4 ft. or 5 ft., and producing its white flowers from June to August. Introduced in 1812. The leaves are subimbricate-serrated, acute at the apex, and the berries small, round, smooth, and red. There is a handsome plant of this species in the arboretum of Messrs. Loddiges, which, in 1835, was 5 ft. high. It is of easy culture in any free soil, either by seeds, cuttings, or layers. Plants, in London, are 1s. 6d. each ; at New York, 37½ cents each.



§ ii. *Agèria* Dec.



*Sectional Characteristics.* Flowers usually 6-cleft. Leaves deciduous. (*Dec. Prod.*, ii. p. 17.)

3. *P. VERTICILLATUS* L. The whorled Winter Berry.

*Identification.* Lin. Spec., 471. ; *Dec. Prod.*, 2. p. 17. ; Don's Mill., 2. p. 20.

*Synonymy.* *P. padifolius* Willd. Enum., p. 394. ; *P. Grondvii* Michx. Fl. Bor. Amer., 2. p. 236. ; *P. confectus* Moench ; *P. prunifolius* Lodd. Cat.

*Engravings.* Wats. Dend. Brit., t. 30. ; Duh. Arb., 1. t. 23. ; and our fig. 191.

*Spec. Char., &c.* Leaves deciduous, oval, acuminate, sawed, pubescent beneath. Male flowers in axillary umbel-shaped fascicles ; the female ones aggregate. The flowers of both sexes 6-parted. (*Dec. Prod.*, ii. p. 17.) A deciduous shrub, growing to the height of 8 ft. ; a native of North America, from Canada to Virginia, in wet woods, and on the banks of ditches. Introduced in 1736. The flowers are white, and are produced from June to August. The berries are red or crimson, turning purplish when ripe. There are two handsome plants of this species in Loddiges's arboretum, 7 ft. high, one of which is under the name of *P. prunifolius*. Plants, in the London nurseries, are 1s. 6d. each ; at Bollwyler, 1 franc 50 cents ; at New York, 25 cents, and seeds 50 cents a quart.



4. *P. DUBIUS* G. Don. The doubtful Winter Berry.

*Synonymy.* *P. ambiguus* Pursh Fl. Amer. Sept., 1. p. 220.

*Spec. Char., &c.* Leaves deciduous, oval, acuminate at both ends, mucronately serrated, pubescent beneath. Flowers, 4-5-cleft ; male ones crowded at the bottom of the branches ; female ones

solitary. Berries red, larger than those of *P. verticillatus*. (*Don's Mill.*, ii. p. 20.) A deciduous shrub, or low tree, growing to the height of 12 ft., in sandy woods, and on the borders of swamps, from New Jersey to Carolina; introduced in 1736; producing its white flowers in July and August, which are succeeded by red berries, larger than those of *P. verticillatus*.

5. *P. LÆVIGATUS* Pursh. The smooth-leaved Winter Berry.

*Identification.* Pursh Fl. Sept. Amer., 1. p. 220; Dec. Prod., 2. p. 17;

Don's Mill., 2. p. 20.

*Engravings.* Wats. Dend. Brit., t. 28.; and our fig. 192.

*Spec. Char., &c.* Leaves deciduous, lanceolate, sawed, the teeth directed forwards, acuminate, glabrous on both surfaces, except on the nerves beneath, where they are slightly pubescent; upper surface glossy. Flowers 6-cleft; the male ones scattered; the female ones axillary, solitary, almost sessile. (*Dec. Prod.*, ii. p. 17.) A deciduous shrub, growing to the height of 8 ft. on the Alleghany Mountains, from New York to Virginia; introduced in 1812. The flowers are white; and the berries large, and of a dark red colour. The plant of this species in Loddiges's arboretum was 4 ft. high in 1835.



192

6. *P. LANCEOLATUS* Pursh. The lanceolate-leaved Winter Berry.

*Identification.* Pursh. Fl. Sept. Amer., 2. p. 27.; Dec. Prod., 2. p. 17.; Don's Mill., 2. p. 20.

*Spec. Char., &c.* Leaves deciduous, lanceolate, remotely and very slightly serrulate, smooth on both surfaces. Male flowers aggregate, triandrous; female ones mostly in pairs, peduncled, and 6-cleft. (*Dec. Prod.*, ii. p. 17.) A deciduous shrub, growing to the height of 8 ft.; a native of the lower districts of Carolina and Georgia; introduced in 1811. The flowers are white; and the berries are small, and of a scarlet colour. The plant in Loddiges's arboretum is 8 ft. high.

§ iii. *Wintèrli* Mœnch.



*Derivation.* Probably from the name of some botanist.

*Sectional Characteristics.* Flowers, for the most part, 6-cleft. Leaves permanent. (*Dec. Prod.*, ii. p. 17.)

7. *P. GLABER* L. The glabrous Winter Berry.

*Identification.* Lin. Spec., 471; Dec. Prod., 2. p. 17.; Don's Mill., 2. p. 20.

*Engraving.* The figure under this name in Wats. Dend., t. 27., is that of *P. coriaceous* Pursh.

*Spec. Char., &c.* Evergreen. Leaves lanceolate, with wedge-shaped bases, coriaceous, glabrous, glossy, somewhat toothed at the tip. Flowers mostly three on an axillary peduncle that is usually solitary. Fruit black. (*Dec. Prod.*, ii. p. 17.) An evergreen shrub, growing to the height of 3 ft. or 4 ft., in sandy shady woods, from Canada to Florida; introduced in 1759, and producing its small white flowers in July and August. The colour of the berries in this species is black, and in Jersey they are called ink berries. It forms a very handsome shrub, which, in Loddiges's arboretum has attained the height of 4 ft., with a regular ovate shape, densely clothed with shining foliage. Plants, in the London nurseries, are 2s. 6d. each; at Bollwyler, 2 francs; and at New York, 25 cents, and seeds 1 dollar a quart.

8. *P. ATOMARIUS* Nutt. The atom-bearing Winter Berry.

*Identification.* Nutt. Gen. Amer., 1. p. 213.; Dec. Prod., 2. p. 17.; Don's Mill., 2. p. 20.

*Spec. Char., &c.* Evergreen. Leaf oval, with the base wedge-shaped and the tip acute, and somewhat sawed, coriaceous, bearing on the under surface minute excrescences; whence the specific

name. Younger branches rather clammy. Flowers solitary on lateral peduncles. (*Dec. Prod.*, ii. p. 17.) An undershrub, growing to the height of 2 ft., in woods, and on the banks of rivers in Georgia; producing its white flowers in July and August, which are succeeded by dark-coloured berries. Introduced in 1820; but we have never seen it in British gardens.

9. *P. CORIACEUS* Pursh. The coriaceous-leaved Winter Berry.

*Identification.* Pursh Fl. Sept. Amer., 1. p. 221.; *Dec. Prod.*, 2. p. 17.; Don's Mill., 2. p. 21.

*Synonymes.* *P. gläber* Wats.

*Engraving.* Wats. Dend. Brit., t. 27., under the name of *P. gläber*.

*Spec. Char., &c.* Evergreen. Leaf lanceolate, with a wedge-shaped base, coriaceous, glabrous, glossy, entire. Flowers in short, sessile, axillary corymbs, many in a corymb. (*Dec. Prod.*, ii. p. 17.) A handsome, tall, evergreen shrub, having the general aspect of *Ilex Dahoön*; found in sandy woods near the banks of rivers in Georgia, and introduced in 1820.

*Varieties.* This species varies, with leaves broader, obovate-lanceolate, and acuminate; and narrower, lanceolate, and acute. (*Dec. Prod.*, ii. p. 17.)

App. i. *Other Species of Primos hardy or half-hardy.*

*P. dioticus* Vahl is a native of the Island of Montserrat, and considered as hardy, though not yet introduced. *P. nitidus* Vahl is also a native of Montserrat, and is supposed to require a green-house. There are two stove species described by Swartz natives of the Caribbee Islands, which are trees growing from 20 ft. to 30 ft. high. They are found on mountains in their native countries; and hence may, probably, be hardy enough to be kept in British green-houses, though it is customary to consider natives of the West India Islands as stove plants, whether they are natives of the hills or of the plains.

CHAP. XXXV.

OF THE HARDY LIGNEOUS PLANTS OF THE ORDER RHAMNACEÆ.

*DISTINCTIVE Characteristics.* Calyx 4—5-cleft; æstivation valvate. Corolla of 4—5 petals; in some absent. Petals cucullate, or convolute, inserted into the orifice of the calyx. Stamens 4—5, opposite the petals, perigynous. Ovary superior, or half-superior, 2-, 3-, or 4-celled, surrounded by a fleshy disk. Ovules one in a cell, erect, as are the seeds. Fruit fleshy and indehiscent or dry, and separating into 3 divisions. Trees or shrubs, often spiny, and generally deciduous. Leaves simple, alternate, very seldom opposite, with minute stipules. Flowers axillary or terminal. (*Lindl. Introd. to N. S.*) The species are natives of Europe or North America, and some of them of India; they are ornamental in British gardens and shrubberies, chiefly from the variety of their foliage, and from their berries; but some of them, as *Ceanothus*, from their flowers. They are all of easy culture. The genera containing hardy ligneous plants are six; which are characterised as follows:—

*ZIZYPHUS* Tourn. Calyx spreading, 5-cleft; its upper part separating all round from the lower, in the manner as if cut from it; the lower persistent, situated under the fruit, and adhering to it more or less. Petals 5, upon a glandular disk that is adnate to the calyx. Stamens inserted in front of the petals. Styles 2—3, simple. Fruit an ovoid drupe; the nut 2-celled, rarely 1—3-celled. Seed suborbicular, compressed. Shrubs or small trees. Leaves alternate, 3-nerved. Stipules spinescent. Flowers axillary. Drupes mucilaginous and eatable. (*Dec. Prod.*, ii. p. 19.) The species are deciduous shrubs, natives of Europe or Asia, one of them bearing eatable fruit.

*PALIURUS* Tourn. The flower like that of *Zizyphus*, except as follows. Styles 3. Fruit dry, indehiscent, orbicular, girded with a broad membranaceous wing, 3-celled. Seed ovate. The habit that of *Zizyphus*. (*Dec. Prod.*, ii. p. 22.) The species are deciduous shrubs or low trees, natives of Europe, or Asia, and highly ornamental in gardens, from their shining leaves, which are nerved; and their abundance of rich greenish yellow flowers, which are succeeded by fruit of rather a singular form.

They are easily propagated by seeds, which they produce, in Britain, in abundance.

**BERCHE'MIA** Necker. Calyx 5-parted, the segments deciduous, the remaining portion persistent, situate under the fruit, and adhering to it more or less. Petals 5, scale-shaped. Stamens inserted lower than the petals. Style 1. Stigmas 2. Fruit an oblong dry drupe; the nut 2-celled. A shrub, without spines, somewhat twining. Often, by defect, the sexes are diœcious, and the fruit 1-seeded. (*Dec. Prod.*, ii. p. 22.) The only hardy species is a twining deciduous shrub, a native of Carolina.

**RHA'MNUS** Lam. Calyx 4—5-cleft; often, with the upper part, after the flowering, separating from the lower all round, in the manner as if cut, and the lower part persistent, situate beneath the fruit, and cohering with it. Petals, in some, absent. Stamens inserted in front of the petals. Style 2—4-cleft. Fruit nearly dry, or berried. Cells 2—4; those in the nearly dry fruits separable, and 1-seeded, or very rarely 2-seeded. Seed oblong, having on the outer side a deep furrow, that is broadest at the base. Shrubs or small trees, with the tips of the branches becoming spines, in some instances. The leaves feather-nerved. The stipules never converted into a prickle. Flowers often unisexual. Fruit not eatable. (*Dec. Prod.*, ii. p. 23.) The species are evergreen, subevergreen, and deciduous shrubs, chiefly natives of Europe, but some of them of North America and Asia.

**COLLE'TIA** Comm. Calyx pitcher-shaped, 5-cleft, its base scarcely adhering to the ovary, which it surrounds. Not any corolla. Stamens 5, situated between the lobes of the calyx: anthers with a tendency to be 1-celled, kidney-shaped, opening by a horseshoe-shaped furrow. Style ending in 3 teeth. Fruit a 3-celled capsule, surrounded by the base of the calyx. Shrubs. Branches spiny. Leaves small, mostly opposite. (*Dec. Prod.*, ii. p. 28.; and *Don's Mill.*) The species are spinous shrubs, with few small leaves, natives of Peru or Chili, and interesting by their peculiarity of appearance, and their flowers.

**CEANO'THUS** L. Calyx 5-cleft, bell-shaped; after the flowering, the upper part separates from the lower part all round, in the manner as if cut; the lower part is persistent, is situate under the fruit, and adheres to it more or less. Corolla of 5 petals, each with a long claw, and hooded: rarely none. Stamens projecting in front of the petals. Styles 2—3, united as high as the middle. Fruit a dry berry, 3-celled, rarely 2—4-celled; the cells pervious at the base; the walls of the consistence of paper. Seed ovate. Shrubs without thorns, with leaves ovate. (*Dec. Prod.*, ii. p. 29.) The species are evergreen or deciduous shrubs, from North America, some of them highly ornamental, on account of their flowers. They are readily propagated by cuttings of the young wood; or by seeds, which are generally imported from America, though they are sometimes ripened in England.

## GENUS I.



### ZIZYPHUS Tourn. THE JUJUBE. *Lin. Syst.* Pentándria Di-Trigýnia.

*Identification.* Tourn. Inst., t. 403.; *Gært. Fruct.*, 1. p. 43.; *Lam. Ill.*, t. 185.; *Dec. Prod.*, 2. p. 198.; *Brongn. Mém. Rham.*, p. 47.

*Synonymes.* Jujubier, *Fr.*; Judendorn, *Ger.*

*Derivation.* From *zizouf*, the Arabic name of the lotus.

#### ‡ 1. *Z. VULGARIS* Lam. The common, or cultivated, Jujube.

*Identification.* *Lam. Ill.*, 185. f. 1.; *Dec. Prod.*, 2. p. 19.; *Don's Mill.*, 2. p. 23.

*Synonymes.* *Rhámnus Zizyphus Lin. Spec.*, 282., *Pall. Fl. Ross.*, 2. t. 59.; *Z. sativa Desf. Arb.*, 2. p. 373. *N. Du Ham.*, t. 16., but not of *Gært.*; *Z. Jijuba Mill. Dict.*, No. 1., but not of *Lam.*; *Jujubier cultivé, Fr.*; *Brustbeeren, Ger.*; *Giuggiol, Ital.*

*Engravings.* *Lam. Ill.*, 185. f. 1.; *Pall. Fl. Ross.*, 2. t. 59.; *N. Du Ham.* 3. t. 16.; and our *fig.* 193.

*Spec. Char., &c.* Branchlets glabrous.

Leaves ovate, retuse, denticulate glabrous, or, beneath, pubescent along the nerves. Prickles not any, or twin, one of them recurved. Drupe ovate-oblong. A deciduous tree, a native of Syria, whence it was brought to Rome during the reign of Augustus. (*Dec. Prod.*, ii. p. 19.) Introduced into England in 1640. In its native country, it grows to the height of 20 ft. or 30 ft., with a thick cylindrical stem, somewhat twisted. The bark is brown, and rather chapped. The branches are numerous, piant, armed with prickles, zigzag in their direction; the prickles at the joints being two of unequal size, of which one is almost straight, and the other shorter and quite straight. The leaves are alternate and oval-oblong, somewhat hard and coriaceous.

The flowers are small, axillary, of a pale yellow colour, with short peduncles. The fruit is oval-oblong, resembling that of the olive; at first green, afterwards yellow, and entirely red when ripe. It has a mild and vinous taste. The pulp encloses a nut, having a long point at one of the extremities, and it contains two seeds. In the south of France, the tree flowers in the beginning of summer, and the fruit ripens in the beginning of autumn. In the neighbourhood of Paris, it flowers in autumn, and the fruit never arrives at maturity. In England, we have only seen very small plants, kept in pots, in pits.



*Geography, History, &c.* This tree is indigenous in Syria, and other parts of Asia, also in Greece (see p. 165.); and it is cultivated on both shores of the Mediterranean. It has been acclimatised in Italy since the time of Augustus, and cultivated for its fruit in different parts of that country, as far north as Genoa. Pliny, speaking of the jujube, says that "this tree, and the *Azedarach*, were imported into Italy, from Africa and Syria, in the reign of Augustus, and planted on the ramparts of Rome, where they made a fine appearance, from their heads rising above the houses." Du Hamel recommends the tree to be cultivated generally, on account of the beauty of its foliage; and, in Languedoc, on account of its fruit. The taste of the fruit is somewhat acid; but the flesh is firm, succulent, and, when dried, it makes a very desirable sweetmeat. The syrup of jujubes is employed for abating fever, and purifying the blood; and in coughs and catarrhs: lozenges for the latter purposes are also made of it. The plant prefers a soil that is rather dry, to one that is moist; and, when once established, it is by no means liable to suffer from the winters of Paris. It is easily increased by cuttings of the roots, whether of young or old trees; or by suckers, which it throws up in the greatest abundance. Seeds may also be procured of it from Italy. We have seen the fruit on the tree in the garden of M. Cels, at Paris, in 1828; and gathered it in that of Signor di Negro, at Genoa, in 1819. In 1835, there were plants of this species in the Fulham Nursery.

2. *Z. SINE'NSIS* Lam. The Chinese Jujube.

*Identification.* Lam. Dict., 3. p. 318.; *Dec. Prod.* 2. p. 19.; *Don's Mill.*, 2. p. 24.

*Synonymy.* *Rhamnus Zizyphus* Lour. *Fl. Coch.*, 158.

*Spec. Char. &c.* Branchlets pubescent. Leaves ovate-oblong, acute, serrate, glabrous, except beneath, along the nerves. Prickles twin, straightish, diverging. Petals reflexed. Drupes ovate. Reputed to be a native of China, apparently on the authority of the Paris Garden; but it is a question whether correctly. (*Dec. Prod.*, ii. p. 19.) Introduced into England in 1818, and described in the *Nouveau Du Hamel* as requiring protection during winter in the Paris Garden. The name is in *Loddiges's Catalogue*, but the plant in their arboretum was dead in 1835, and we have never seen it.

### 3. *Z. SPINA-CHRISTI* Willd. Christ's Thorn Jujube.

*Identification.* Willd. Spec., 1. p. 1105; Dec. Prod., 2. p. 20; Don's Mill., 2. p. 24.  
*Synonymes.* *Rhâmnus spina-Christi* Lin. Spec., 282, Desf. Fl. Atl., 1. p. 201. *Rhâmnus Nabeca* Forsk. Egypt., 204, but not of Lin.; *Z. africana* Mill. Dict., No. 4.; *Z.*; *Nabeca* Lam. Dict., 3. p. 320.; *Nabeca* Alp. Eg., 2. t. 4. p. 10.; *Enôplia spinosa* Bauh. Pin., 477. *Ger. Emac. Append.*, t. 1605.; *Christkronen Jujudorn*, *Ger.*  
*Engravings.* Alp. Eg., 2. t. 4. p. 10.; *Ger. Emac. Append.*, t. 1605.

*Spec. Char.*, &c. Leaves ovate, obtuse, toothed, glabrous, or, beneath, pubescent. Prickles twin, spreading, one straight, the other rather incurved. Flowers disposed upon peduncles, that are corymbosely divided, and villosely tomentose. Drupes ovate-globose. Inhabits the north of Africa and Palestine. (*Dec. Prod.*, ii. p. 20.) A deciduous shrub, growing to the height of 8 ft. in the north of Africa, in Palestine, in Ethiopia, and in Egypt. Introduced in 1759. The flowers are yellowish green; the fruit oblong, about the size of a sloe, with a pleasant subacid taste, and used as food by the inhabitants of Egypt and Arabia. Hasselquist thinks that this is the tree from which the crown of thorns was taken which was put on the head of our Saviour during the crucifixion; but the more general opinion is in favour of *Paliurus aculeatus*. Linnæus raised it from seeds sent by Hasselquist, and Miller cultivated it, in 1759, from seeds; but we have never seen the plant, and do not know whether it is now to be procured in England.

#### Variety.

♂ *Z. S. 2 inermis* Dec. Prod., ii. p. 20.—This has no prickles, and its leaves are larger, and very obtuse.

### 4. *Z. INCURVA* Roxb. The incurved-spined Jujube.

*Identification.* Roxb. Fl. Ind., 2. p. 364; Dec. Prod., 2. p. 20; Don's Mill., 2. p. 25.  
*Synonymes.* *Z. paniculata* Hamilt. MSS.

*Spec. Char.*, &c. Leaves oval, obtusely acuminate, crenulate, 5-nerved, oblique at the base. Petioles and nerves pubescent. Prickles solitary, or twin, with one incurved. Flowers with the style parted half-way down, disposed in bifid peduncled cymes. (*Dec. Prod.*, ii. p. 20.) A tree growing to the height of 20 ft.; a native of Upper Nepal, and introduced in 1823. The flowers are of a yellowish green, and appear in August and September: they are succeeded by small, round, dark purple fruit. We have never seen the plant.

### 5. *Z. FLEXUOSA* Walk. The flexible Jujube.

*Identification.* Wall. in Fl. Ind., 2. p. 365; Don's Mill., 2. p. 25.

*Spec. Char.*, &c. A smooth shrub, with spiny flexible branches, and unarmed straight branchlets. Prickles twin, one very long and straight, the other recurved. Leaves lanceolate, obtuse, crenate, smooth. Flowers axillary, usually solitary. Style deeply bifid. (*Don's Mill.*, ii. p. 25.) A native of Nepal, where it grows to the height of 8 ft. It is considered an elegant plant, with mahogany-coloured prickles, and solitary yellowish flowers, rather large. It was introduced in 1820; but we have not seen the plant.

## App. i. Half-hardy Species of *Zizyphus* already introduced.

*Z. Lötus* Lam., the *Rhâmnus Lötus* of Linnæus, (*Desf. Act. Par.*, 1788, t. 21.; *Shaw's Afr.*, No. 632, f. 632; and our fig. 184.) the lotos of the Lotophagi, is a deciduous shrub, from 3 ft. to 4 ft. in height, of considerable interest, and eminently deserving of a place against a conservative wall. It is a native of Persia, and of the interior of Africa, especially of the kingdom of Tunis, in a tract called Jereed, which was formerly the country of the Lotophagi. It has the habit of the *Rhâmnus*, and the flowers of the common jujube; but the fruits are smaller, rounder, and sweeter, being about the size of sloes, and containing large stones; they are borne on every part of the plant like gooseberries, and have a purplish tinge. The farinaceous pulp is separated from the stone, and laid by for winter use. Its flavour approaches nearly to that of figs or dates. A kind of wine is made from the fruit by expressing the juice, and diluting it with water; but it will not keep more than a few days. The natives of some parts of Africa convert the fruits into a sort of bread, by exposing them for some days to the sun, and afterwards pounding them gently in a wooden mortar, until the farinaceous part is separated from the stones. The meal thus produced is then mixed with a little water, and formed into cakes, which, when dried in the sun, resemble in colour and flavour the sweetest gingerbread. The stones are afterwards put into a vessel of water, and shaken about, so as to separate the farina which may still adhere to them. This communicates a sweet and agreeable taste to the water; and, with the addition of a little pounded millet, it forms a pleasant liquor, called *fondé*, which is the common breakfast, in many parts of Ludamar, during the months of February and March. The fruit is collected by spreading a cloth upon the ground, and beating the branches with a stick. The lotos of the Lotophagi must not be confounded with the Egyptian lotos, which is the *Nymphaea Lötus*; with the lotos of Homer and Dioscorides, which is a species of *Trifolium*; with the lotos of Hippocrates, which is the *Celtis australis*; or with the Italian lotos, which is the *Diospyros Lötus*. (*Don's Mill.*, ii. p. 24.) Plants of this species were introduced into Britain in 1731; but they are rarely to be met with, and, when they are, they are treated as frame plants. Plants might probably be obtained from Italy, or from the French colonial garden at Algiers.

*Z. nitida* Roxb. is a native of China, introduced in 1822. The fruit is 1 in. long, pale yellow when ripe, and edible; the root produces innumerable suckers, which run to a great distance from the parent tree. This species is recorded as a green-house plant, but will probably prove half-hardy.

*Z. parvifolia* Del. (*Voy. from Egypt*) is a hardy species, not yet introduced. *Z. mucronata* Willd. is a Cape species. *Z. glabra* Roxb. is a native of the East Indies. *Z. Enôplia* Mill., *Z. tomentosa* Roxb.,



and *Z. dlbens* Roxb. are also natives of the East Indies. *Z. agræstis* Schult. and *Z. saporiferus* Schult. are natives of the north of China; and *Z. capensis* is a native of the Cape of Good Hope. All these species being deciduous, we have no doubt that, if once introduced, and tried in very dry soil, against a conservative wall, they would be found half-hardy.

*Z. Jujuba* Lam. *Dict.*, iii. p. 318., *Rhâmnus Jujuba* Lin. *Spec.*, 282., the wild jujube, a tree growing to the height of 16 ft. in India, and cultivated in China and Cochin-China, was introduced into England in 1759, but, as far as we know, is now lost. It is figured and described by Rumphius (*Amb.*, ii. t. 36.), and by Rheede (*Mal.*, iv. t. 41.); and the following notice respecting it is in Don's *Miller*:—Leaves obliquely ovate, serrated, downy below, as well as the young branches, hoary. Prickles twin, the one recurved, the other straight. Corymbs axillary, almost sessile. Flowers greenish yellow. Drupe globular, size of a large cherry, smooth and yellow when ripe, containing a 2 celled, 1 seeded nut. There is a variety of this, or a new species, in the East Indies, which produces excellent fruit of a long form, about the size of a hen's egg, known by the name of *narrikelkool* in Bengal. The fruit of both varieties is eaten by all classes of persons: it is sweet and mealy. The bark of the tree is said to be used in the Moluccas in diarrhœa, and to fortify the stomach; which seems to confirm the general opinion entertained of the astringent properties of the bark of most of the species of this order. (*Don's Mill.*, ii. p. 26.) This species, though marked as a green-house plant, will doubtless thrive in the open air, in the warmest parts of the south of England; but we have introduced it here, because we think it and *Zizyphus Lôtus* likely to be desirable fruit-shrubs for Australia, the Cape, and the Himalayas. Highly improved varieties of both species, producing fruit as different from that which they now bear, as the Lancashire gooseberry is from the gooseberry of the woods of Switzerland or California, might probably be obtained by selection and cultivation.

Various species of *Zizyphus* are found in the Himalayas; some of which, growing on the higher parts of the mountains, may probably be found hardy. (See *Koyle's Illust.*, p. 168.) In the garden of the Horticultural Society there is an unnamed species, which has stood two winters against a wall without any protection.

## GENUS II.

PALIURUS L. THE PALIURUS, or CHRIST'S THORN. *Lin. Syst.* Pentândria Trigýnia.

*Identification.* Tourn. *Inst.*, t. 386.; D. Don *Prod. Fl. Nep.*, p. 189.; *Dec. Prod.*, 1. p. 22.; Don's *Mill.*, 2. p. 23.; Brongn. *Mém. Rham.*, p. 46.

*Synonymes.* Paliüre, Porte-chapeau, Fr.

*Derivation.* From *pallô*, to move, and *ouron*, urine; in allusion to its diuretic qualities; or from *Paliurus*, the name of a town in Africa; now called Nabil.

## § 1. P. ACULEATUS Lam. The prickly Paliurus, or Christ's Thorn.

*Identification.* Lam. *Ill.*, t. 210.; Fl. Fr., ed. 3., No. 4081.; N. Du Ham., 3. t. 17.; Don's *Mill.*, 2. p. 23.

*Synonymes.* P. pétasus *Dum. Cours.*, 6. p. 266.; P. australis *Gært. Fruct.*, 1. t. 43. f. 5.; P. vulgaris *D. Don Prod. Fl. Nep.*, 189.; *Rhâmnus Paliurus* *Lin. Spec.*, 281.; *Zizyphus Paliurus* *Willd. Spec.*, 1. p. 1183., *Sims Bot. Mag.*, t. 1893.; *Christ's Thorn*, or *Ram of Libya* *Gerard.*; *E'pine de Christ*, *Argalon, Porte-chapeau, Fr.*; *gefûgelter Judendorn, Ger.*

*Engravings.* Lam. *Ill.*, t. 210.; N. Du Ham., 3. t. 17.; *Gært. Fruct.*, 1. t. 43. f. 5.; *Bot. Mag.*, t. 1893.; *E. of Pl.*, No. 2896.; our fig. 195.; and the plates of this species, both in a young and an old state, in our Second Volume.

*Spec. Char., &c.* Branchlets pubescent. Leaves ovate, serrulated, quite smooth, 3-nerved, with two spines at the base, one straight, the other recurved. Flowers in axillary crowded umbellules; few in an umbellule. Wing of capsule crenated. (*Don's Mill.*, ii. p. 23.) A branching deciduous shrub, or low tree; a native of the south of Europe, and north and west of Asia, and introduced in 1596. The flowers, which are produced in great abundance, are of a greenish yellow, and they are succeeded by fruit of a buckler shape, flat and thin, but coriaceous. From the singular appearance of this fruit, which has the footstalk attached to the middle, which is raised like the crown of a hat, and the flattened disk, which resembles its brim, the French have given this tree the name of *porte-chapeau*. On both shores of the Mediterranean, it grows to about the same height as the common hawthorn. In the south of Russia, according to Pallas, it forms a bushy tree, with numerous branches, thickly clothed with prickles, coming out in pairs at the buds, one of them bent back, and both very sharp. It is found on the hills near the Lake of Baikal, particularly near warm springs; it is also found in the south of Caucasus and Georgia, and in the woody mountains of Taurida, where it renders some parts of them almost impervious. In many parts of Italy



the hedges are formed of this plant, as they are of the hawthorn in Britain; it is also the common hedge plant in Asia. Du Hamel recommends it for being employed for hedges in the south of France, where it abounds in a wild state. Medicinally, the entire plant is considered diuretic; and it is said to have been given with success in dropsical cases. Virgil, when describing, in figurative language, Nature as mourning for the death of Julius Cæsar, says the earth was no longer covered with flowers or corn, but with thistles, and the sharp spines of the paliurus. Columella recommends excluding the plant entirely from gardens, and planting it with brambles for the purpose of forming live hedges. In the south of France, where it has been tried in this way, the same objection is made to it as to hedges of the common sloe (*Prunus spinosa*) in this country; viz. that it throws up such numerous suckers as in a short time to extend the width of the hedge considerably on both sides. As this species abounds in Judæa, and as the spines are very sharp, and the branches very pliable, and easily twisted into any figure, Belon supposed the crown of thorns, which was put upon the head of Christ before his crucifixion, to be composed of them. Josephus says "that this thorn, having sharper prickles than any other, in order that Christ might be the more tormented, they made choice of it for a crown for him." (*Ant. of the Jews*, book i. chap. ii., as quoted by Gerard.) Hasselquist, however, thinks that the crown of thorns was formed of another prickly plant, the *Zizyphus spina-Christi* W., *Rhâmnus spina-Christi* Lin.; but, according to Warburton, it was the *Acánthus mollis*, which can hardly be considered prickly at all.

*Statistics.* The largest plant of this species in the neighbourhood of London is at Syon, where it is 33 ft. high, the trunk 1 ft., and the diameter of the head 30 ft. (See our engraving of this tree in Vol. II.) There is a fine old specimen in the Botanic Garden at Oxford about 20 ft. high, and one in the Chelsea Botanic Garden of considerable age, but not remarkable for its height. Plants, in the London nurseries, are 1s. 6d. each; at Bollwyller, 1 franc 20 cents each; and at New York, 50 cents each.

## GENUS III.



BERCHEMIA Neck. THE BERCHEMIA. *Lin. Syst.* Pentândria  
Monogýnia.

*Identification.* Neck. Elem., 2. p. 122.; Dec. Prod., 2. p. 22.; Brongn. Mém. Rham., 49.; Don's Mill., 2. p. 27.

*Synonymes.* *Enóplia Hedw. F. Gen.*, 1. p. 151., and *Schult. Syst.*, 5. p. 962.

*Derivation.* From *Berchem*, probably the name of some botanist.

*Description, &c.* Twining deciduous shrubs, of which there is only one species considered hardy.

§ 1. B. VOLU'BILIS Dec. The twining Berchemia.

*Identification.* Dec. Prod., 2. p. 22.; Don's Mill., 2. p. 27.

*Synonymes.* *Rhâmnus volubilis Lin. Fl. Suppl.*, 132., *Jacq. Icon. Rar.*, t. 336.; *Zizyphus volubilis*

*Willd. Spec.*, 1. p. 1102.; *Enóplia volubilis Schult. Syst.*, 5. p. 332.; *Supple Jack, Virginian.*

*Engravings.* *Jacq. Icon. Rar.*, t. 336.; *E. of Pl.*, No. 2835.; and our fig. 196.

*Spec. Char., &c.* Branches glabrous, rather twining.

Leaves oval, mucronate, somewhat waved. Flowers

dioecious. Drupes oblong. (*Dec. Prod.*, ii. p. 22.)

A deciduous twining shrub, a native of Carolina and

Virginia, in deep swamps near the sea coast. Introduced

in 1714. According to Pursh, it ascends the

highest trees of *Taxodium distichum*, in the dismal

swamp near Suffolk in Virginia; and it is known

there by the name of *Supple Jack*. The stems

twine round one another, or any object which they

may be near; but, in British gardens, they are sel-

dom seen above 8 ft. or 10 ft. high, probably from

little attention being paid to place the plant in a

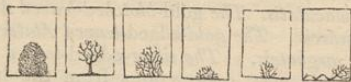


deep sandy or peaty soil, and to supply it with abundance of moisture in the growing season. The foliage has a neat appearance. The flowers are small, and of a greenish yellow colour; and, in America, they are succeeded by oblong violet-coloured berries. It is propagated by cuttings of the root, or of the branches, or by layers. Plants are in the garden of the London Horticultural Society, and in some nurseries. Price, in London, 2s. 6d. each; and at New York, 1 dollar.

### App. i. Other Species of Berchèmia.

*B. flavescens* Brongn., the *Zizyphus flavescens* of *Wallich*, is a Nepal climber, not yet introduced. *B. lineata* Dec., *Rhámnus lineatus* *Lin.*, is a green-house shrub, introduced in 1804 from China. It grows to the height of 8 ft. *B. Lourciriana* Dec., the *Rhámnus lineatus* of *Lam.*, but not of *Linnaeus*, is a trailing shrub, a native of Cochín-China, among hedges and bushes, not yet introduced, but, in all probability, half-hardy or hardy.

### GENUS IV.



### RHÁ'MNUS *Lam.* THE BUCKTHORN. *Lin. Syst.* Pentándria Mono- gýnia.

*Identification.* *Lam. Dict.*, 4 p. 461.; *Lam. Ill.*, t. 128.; *Gært. Fruct.*, 2 p. 106.; *Dec. Prod.*, 2 p. 23.; *Don's Mill.*, 2 p. 29.; *Brongn. Mém. Rham.*, p. 53.

*Synonymes.* *Neprun*, *Fr.*; *Wegdorn*, *Ger.*; the Ram, or Hart's Thorne, *Gerard.*; Box Thorn.

*Derivation.* From the Celtic word, *ram*, signifying a tuft of branches; which the Greeks have changed to *rhamnos*, and the Latins to *ramus*.

*Description, &c.* Deciduous, or evergreen shrubs, one or two of them with the habit of low trees, and some of them sub-procumbent, or procumbent; and all of them, except the latter, distinguished by an upright stiff mode of growth, and numerous strong thorns in their wild state; whence the name of ram, or buck, thorn. Many of the sorts set down in books as species are, doubtless, only varieties; but, till the whole are brought together, and cultivated in one garden, this cannot be determined. The flowers in all the species are inconspicuous; but the *R. Alaternus* and its varieties are most valuable evergreen shrubs, and several of the other species are ornamental, both from their foliage and their fruit; the latter of which is also useful in dyeing. *R. híbridus*, *R. alpinus*, *R. cathárticus*, *R. Frángula*, *R. saxátilis*, *R. alnifólus*, and *R. latifólus* are species procurable in the nurseries, and well deserving of cultivation. They are all easily propagated by seeds or layers, and most of them by cuttings; and they will all grow in any soil that is dry. They all vary much in magnitude by culture, in common with most plants which, in a wild state, grow in arid soils.

### § i. *Marcorélla* Neck.

*Synonymes.* *Rhámnus* and *Alaternus* of *Tourn.*

*Sect. Char.* Flowers usually diœcious, and 5-cleft. Fruit a berry, with 3 seeds, or, from abortion, 2 seeds. Seeds deeply furrowed, with the raphe in the bottom of the furrow. Leaves usually permanent; coriaceous, and glabrous. (*Dec. Prod.*, ii. p. 23.)

A. *Alaternus* *Tourn.* Flowers racemose, 5-cleft. Evergreen Shrubs.

#### ■ 1. *R. ALATE'RNUS* *L.* The Alaternus.

*Identification.* *Lin. Spec.*, 281.; *Dec. Prod.*, 2 p. 23.; *Don's Mill.*, 2 p. 30.

*Synonymes.* *Alaternus* *Phillyrea* *Mill. Dict.*, No. 1.

*Derivation.* From *Alaternus*, a generic name, adopted from *Dioscorides*, designating the alternate position of the leaves.

*Engravings.* *Mill. Dict.*, t. 16. f. 1.; *N. Du Ham.*, 3. p. 42. t. 14.; and our *fig.* 157.

*Spec. Char., &c.* Leaves ovate-elliptical, or lanceolate, coriaceous, quite smooth, serrated. Flowers diœcious, disposed in short racemes. (*Don's Mill.*, ii. p. 30.) An evergreen shrub, a native of the south of Europe and the north of Africa; in cultivation, in England, from the days of Parkinson, in 1629. There are several varieties.

- R. A. 2 *baleárica* Hort. Par. *The Balearic Alaternus*.—Leaves roundish. The *Rhámnus rotundifolius* of Dumont. We take this as the first variety, assuming the species to be what is called *R. A. latifolius*, which is the commonest variety in British nurseries.
- R. A. 3 *hispanica* Hort. Par. *The Spanish Alaternus*.—Leaves ovate, a little toothed.
- R. A. 4 *fólius maculátis*. *The gold-blotched-leaved Alaternus*.
- R. A. 5 *fólius aúreis*. *The gold-edged-leaved Alaternus*.
- R. A. 6 *fólius argénteis*. *The silver-edged-leaved Alaternus*.—This variety, which is very conspicuous from the large proportion of the leaves which is white, is more tender than some of the other varieties, it generally does best against a wall, and is well worth a place there, on account of its splendid appearance, especially in winter.
- R. A. 7 *angustifolia*, *synon. R. Clúsi* Willd. *The narrow-leaved Alaternus*.—Figured in *Mill. Icon.*, t. 16. fig. 2. This variety is so distinct, that it is by many authors considered as a species. There are two subvarieties of it, the gold-striped-leaved, and the silver-striped-leaved. They are all of remarkably free growth, more especially *R. A. angustifolia*.



*Geography, History, &c.* The alaternus is a densely branched shrub, growing to the height of 15 ft. or 20 ft. in sheltered situations, but always preserving the character of a bush, unless carefully trained to a single stem. The leaves are alternate, shining, and often glandular at the base, and serrated in some varieties, but entire in others. The flowers are numerous, male or female, or imperfect hermaphrodites, on the same or different individuals; and hence the plant is seldom seen in England bearing fruit. It is abundant in the south of Europe, and was observed by Sir James Smith, in Italy, sometimes only a foot or two in height, and at others as high as a low tree. Evelyn, also, observed it there; and says that its blossoms, which are produced from April to June, afford an "early and marvellous relief to bees." Evelyn boasts that he was the first who brought the alaternus into use and reputation in England, and that he had propagated it from Cornwall to Cumberland. Parkinson, however, first introduced it; and he commends it for the beauty and verdure of the leaves, "abiding quite fresh all the year." In his time it was called evergreen privet. The plant is mentioned by Pliny and by Dioscorides, both as medicinal and as being used in dyeing. Clusius states that in Portugal the bark is used to dye a red, and the wood to dye a blackish blue. In British gardens, this shrub is particularly valuable for the rapidity of its growth in almost any soil and situation, more especially the narrow-leaved variety. About the end of the seventeenth century, it was one of the few evergreens generally planted, not only for hedges and to conceal objects, but to clothe walls, and to be clipped into artificial shapes. In London and Wise's *Retired Gardener*, published in 1706, it is recommended to grow the alaternus in cases (boxes), for ornamenting gardens and court-yards; and, when clipped into the form of a bowl or ball, for placing in the borders of parterres. "You give it what shape you think fit by the help of your shears, which, being well guided, will make this shrub of a very agreeable figure." (*Ret. Gard.*,

ii. p. 751.) The four large, round, and smoothly clipped plants of phyllirea, on naked stems, mentioned in p. 45. as possessed by Evelyn at SAYS Court, were doubtless of this species, and not of the genus *Phyllirea*, which is of much slower and less robust growth. The *Alaternus* was at that time, and even so late as the time of Miller, frequently confounded with the *Phyllirea*; but the two genera are readily distinguished by the position of their leaves, which are alternate in *Rhamnus*, and opposite in *Phyllirea*. At present, the *alaternus* is chiefly planted in town gardens, to conceal walls, and because it is less injured by the smoke of coal than most other evergreens. The species, and all the varieties, are readily propagated by cuttings, which are taken off in autumn, and planted in sandy soil, in a shady border, and covered with a hand-glass. Price, in the London nurseries, of the species, and of the blotched-leaved variety, 9*d.* a plant; of the gold- and silver-edged-leaved, 2*s.* 6*d.* each: at Bollwyller, the species and varieties from 1 franc to 2 francs a plant: at New York, &c. As the roots are not very productive of fibres, when large plants are chosen, they should be such as have been reared in pots, in order that they may receive no check from removal.

2. *R. HYBRIDUS* L'HÉRIT. The hybrid *Alaternus*.

*Identification.* L'Hérit. Sert., t. 5; Dec. Prod., 2. p. 23; Don's Mill., 2. p. 33.  
*Synonymes.* *R. burgundiacus* Hort. Par.; *R. sempervirens* Hortulan.  
*Engraving.* L'Hérit. Sert., t. 5.

*Spec. Char., &c.* Leaves oblong, acuminate, serrated, smooth, shining, hardly permanent, rather coriaceous. Flowers androgynous. (*Don's Mill.*, ii. p. 30.) A garden hybrid, a sub-evergreen shrub, raised from *R. alpinus*, fecundated by *R. Alaternus*, and forming a very distinct and desirable kind, which, in British gardens, grows to the height of 10 ft. or 12 ft. The flowers are green, and appear in May or June. There is a plant in the arboretum of Messrs. Loddiges, which, in 1833, before it was cut down, was 8 ft. high. There is one in the garden of the London Horticultural Society 5 ft. high. Price of plants, in London, 2*s.* each; at Bollwyller, 1 franc and 50 cents.

B. *Rhamnus* Dec. Flowers in Fascicles, 5-cleft.



3. *R. LONGIFOLIUS* Link. The long-leaved Buckthorn.

*Identification.* Link Enum., 1. p. 228; Dum. Cours. Bot. Cult., 6. p. 260; Dec. Prod., 2. p. 24; Don's Mill., 2. p. 30.  
*Synonyme.* *R. Willdenovianus* Röm. et Schult. Syst., 5. p. 295.  
*Spec. Char., &c.* Leaves oval-oblong, acute at both ends, serrated, smooth, shining, pilose in the axils of the veins beneath. (*Don's Mill.*, ii. p. 30.) A shrub, growing to the height of 8 ft.; introduced in 1823, but from what country is uncertain.

C. Flowers 4-cleft, in Fascicles.



a. Branchlets terminating in a Thorn.

4. *R. CATHARTICUS* L. The purging Buckthorn.

*Identification.* Lin. Spec., 280; Dec. Prod., 2. p. 24; Don's Mill., 2. p. 30.  
*Synonyme.* The White Thorn of the modern Greeks.  
*Engravings.* Eng. Bot., t. 1629; Wood. Med. Bot., t. 114; Cœd. Fl. Dan., t. 850; N. Du Ham., 2. t. 10; our fig. 198; and the plate of this species in Vol. II.

*Spec. Char., &c.* Erect. Leaves ovate, toothed. Flowers in fascicles, polygamodixæious. Berries 4-seeded, rather globose. (*Don's Mill.*, ii. p. 30.) A native of Europe and the north of Asia, and plentiful in England.

Variety.

‡ *R. c. 2 hydriensis* Jac., with larger leaves, tapering to the base, is found wild about Hydria.

*Description, History, &c.* A deciduous shrub or low tree, growing to the height of 12 ft. or 15 ft. in a state of cultivation, with many irregular branches, the young shoots of which have a smooth greyish brown bark; but the older branches have rougher bark, armed with a few short thorns. The leaves are ribbed, smooth, and of a bright green. The flowers are of a yellowish green, and they are succeeded by berries, which are globular, bluish black, nauseous, violently purgative, with 4 cells, and as many seeds. By this last character they are distinguished by druggists from the berries of *R. Frángula*, which are supposed to be less cathartic. In Britain, this species is found in native woods and thickets, generally on calcareous and loamy soils, but seldom above 10 ft. or 12 ft. in height. According to Pallas, this species is common in the champagne and southern parts of Siberia, with a trunk thicker than a man's arm, and the wood very hard, and of a reddish colour. The flowers are, for the most part, hermaphrodite, and, in a wild state, clustered; but in a state of cultivation they are fewer, and nearly solitary. The juice of the unripe berries has the colour of saffron, and it is used for staining maps or paper: they are sold under the name of French berries. The juice of the ripe berries, mixed with alum, is the sap green of painters; but, if the berries be gathered late in the autumn, the juice is purple. The bark affords a beautiful yellow dye. The inner bark, like that of the elder, is said to be a strong cathartic, and to excite vomiting; the berries are also strongly purgative; and it is said that the flesh of birds which feed upon them possesses the same quality. Plants of this species, in the garden of the London Horticultural Society, have attained the height of 9 ft. in 10 years: they do not make much show in spring, when in flower; but in autumn and winter, when profusely covered with their black berries, they are very ornamental. The fruit remains on after the leaves have fallen. Plants, in the London nurseries, are 1s. each; at New York, plants are 37½ cents each.

If plants were required for forming hedges (for which the species is very eligible, in consequence of its robust and rigid habit of growth), they could, no doubt, be provided and supplied at a price less than that of plants of the common hawthorn, because plants of *R. cathárticus* come up in the first year from the sowing.

5. *R. VIRGATUS* Roxb. The twiggy Buckthorn.

*Identification.* Roxb. Fl. Ind., 2. p. 351; Dec. Prod., 2. p. 24; Don's Mill., 2. p. 30.

*Synonymes.* *R. cathárticus* Hamilt. MSS.

*Spec. Char., &c.* Erect. Branchlets terminating in a spine. Leaves nearly opposite, oblong, ventricose, serrated. Flowers around the base of the young shoots, and axillary in threes. Stigmas 2-3-cleft. (*Don's Mill.*, ii. p. 33.) A deciduous shrub, growing to the height of 12 ft. in the Neelgherry Mountains in the Himalaya; introduced in 1820. The flowers are very small, yellow, and appear in June and July; and the berries are from 2. to 3-seeded.

6. *R. TINCTORIUS* Waldst. The Dyer's Buckthorn.

*Identification.* Waldst. et Kit. Pl. Rar. Hung., 3. p. 255; Dec. Prod., 2. p. 24; Don's Mill., 2. p. 31.

*Synonymes.* *R. cardiopérnus* Willd. Herb.

*Engravings.* Hayne Abild., t. 97., and our fig. 199.

*Spec. Char., &c.* Erect. Leaves ovate, crenate-serrated. Petioles villous. Flowers crowded, diœcious. Berries obcordate, 3- to 4-seeded. (*Don's Mill.*, ii. p. 31.) A deciduous shrub, a native of Hungary, in hedges, where it grows to the height of 8 ft. Introduced in 1820. The flowers, which are produced in May and June, are of a greenish yellow, and the berries and inner bark are used for dyeing. A plant of this species, in the garden of the London Horticultural Society, was, in 1834, 3 ft. high, after being 7 years planted.



198



199

7. *R. INFECTORIUS* L. The staining Buckthorn, or *Avignon Berry*.

*Identification.* Lin. Mant., 49.; Dec. Prod., 2. p. 24.; Don's Mill., 2. p. 31.

*Synonymes.* *Rhamnus Lycium Scop. Carn. ed. 2. n. 260.*; dwarf, or yellow-berried, Buckthorn; Nerprun des Teinturiers, Graine d'Avignon, Nerprun teignant, Fr.; Farbender Wegdorn, Ger.

*Engravings.* Ard. Mém., 78. t. 14.; and our fig. 200.

*Spec. Char., &c.* Leaves ovate-lanceolate, serrulated, smoothish. Flowers diœcious, bearing petals in both sexes. (*Don's Mill.*, ii. p. 31.) A deciduous, sub-procumbent shrub; a native of the south of Europe, in rocky places; common about Avignon, and the Vaucluse; whence the name Avignon berry. Introduced in 1683. The root fixes itself so firmly in the fissures of the rocks, that the plant can scarcely be pulled up. The stem divides immediately into branches, that are very much subdivided, and form a very close head, the shoots having numerous spines, both terminating and lateral. The flowers are numerous, and the berries 3-celled, and black when ripe. In England, the berries are very seldom produced. According to the first edition of *Du Hamel*, the berries of this species were gathered green, and used for producing a yellow colour by dyers and painters. Miller says that this is a mistake, and that the Avignon berries alluded to by *Du Hamel* are those of the narrow-leaved alaternus, one of the most common shrubs in the south of France. In the *Nouveau Du Hamel*, this assertion of Miller's is noticed, together with one of *Haller's*, who says that the Avignon berries are gathered from the *R. saxatilis*. The writer remarks that the berries are now very little used, and that, as all the three species abound in the south of France, and the berries of all of them dye yellow, the Avignon berries were probably gathered from all, or any, of them indiscriminately. The berries are used for dyeing leather yellow; and the Turkey leather, or yellow morocco, is generally supposed to be coloured by them. There are plants of this species in the arboretums of Messrs. Loddiges and the London Horticultural Society. The latter had, in 1834, attained the height of 6 ft., forming a very handsome bush.



8. *R. SAXATILIS* L. The Stone Buckthorn.

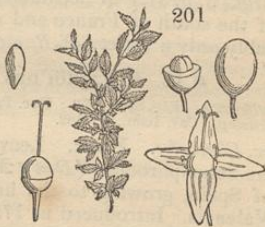
*Identification.* Lin. Sp., 1671.; Dec. Prod., 2. p. 24.; Don's Mill., 2. p. 31.

*Synonymes.* *R. longifolius Mill. Dict.*; Stein Wegdorn, Ger.

*Engravings.* Jacq. Austr., t. 43.; and our fig. 201.

*Spec. Char., &c.* Procumbent, or erectish.

Leaves ovate-lanceolate, serrulated, smoothish. Flowers diœcious, female ones destitute of petals. (*Don's Mill.*, ii. p. 31.) A procumbent deciduous shrub, native of the south of Europe, among rocks, in Austria, Switzerland, Italy, and Greece. Introduced in 1752. The flowers are of a greenish yellow, and appear in June and July. The berries are black, containing three whitish seeds, each enclosed in a dry whitish membrane, separating into two parts with elastic force. The berries are supposed to be used for the same purposes as those of *R. infectorius*, and *R. tinctorius*, for which they are often sold. Neither this nor the preceding species can be considered as ornamental in itself; but both are well adapted for planting among rocks, either natural or artificial. In garden scenery, where natural rocks occur, and where it is desirable that they should be retained, the only legitimate mode of rendering them gardenesque is, by clothing them, or varying them with showy flowering plants, ligneous or herbaceous.



☞ 9. *R. OLEOI'DES* Lin. The Olive-like Buckthorn.

*Identification.* Lin. Sp., 279.; Desf. Atl., 1. p. 197.; Dec. Prod., 2. p. 24.; Don's Mill., 2. p. 31.  
*Synonymy.* *R. oleifolius* Hort.  
*Engraving.* Our fig. 202.

*Spec. Char., &c.* Diffuse, or rather erect; leaves oblong, obtuse entire, coriaceous, smooth, with netted veins beneath. (*Don's Mill.*, ii. p. 31.) A deciduous shrub, growing to the height of 3 ft., in the fissures of rocks, in Sicily, Mauritania, Spain, and Greece. Introduced in 1752. In Loddiges's *Catalogue*, it is in the list of green-house plants; but it is generally understood to be quite hardy. Though the species of the *Rhamnus* are numerous, yet, as few of them attain a large size, they will not occupy so much space in an arboretum as might, at first sight, be imagined. Where the soil is dry, and the surface somewhat undulated, the plants may be scattered over it at the same distances from each other as their heights; or, if there is space to spare, at double this distance, which will allow each species to display its natural form, and to bring its leaves, flowers, and fruit to maturity. Where the soil is not naturally dry, an artificial ridge of dry soil, mixed with rocks or stones, may be formed; and along this the different species of *Rhamnus* may be scattered.



☞ 10. *R. BUXIFOLIUS* Poir. The Box-leaved Buckthorn.

*Identification.* Poir. Dict., 4. p. 463; Dec. Prod., 2. p. 24.; Don's Mill., 2. p. 31.  
*Synonymy.* ? *R. buxifolius* Brot. *Fl. Lus.*, 1. p. 301.  
*Engraving.* Our fig. 203.

*Spec. Char., &c.* Diffuse. Leaves ovate, quite entire, mucronate, smooth, coriaceous, green on both surfaces. (*Don's Mill.*, ii. p. 31.) A shrub, growing to the height of 3 ft., a native of Numidia, and introduced in 1820. According to Desfontaines, it is only a variety of *R. oleoides*; but, whether a species or variety, it is, at all events, a very distinct and a very neat form; indeed, it may be observed of the species of deciduous *Rhamnus* generally, that they are all characterised by a particular kind of distinctness and permanence of appearance; from which, however much many of the sorts may resemble each other, yet they can never be mistaken for species belonging to other genera. They almost all grow slowly, and have wood of a hard and durable nature; and the appearance of all of them, whether as bushes or low trees, has the expression of durability. The blossoms are small, and so are the fruit; but both, or at all events the fruit, remain a long time on the plant, as well as the leaves, most of which are pointed and coriaceous, and strongly veined or ribbed; all which adds to that expression of firmness, rigidity, and permanence in the plant, which we have already mentioned.



☞ 11. *R. PUBESCENS* Poir. The pubescent Buckthorn.

*Identification.* Poir. Dict., 4. p. 464.; Dec. Prod., 2. p. 24.; Don's Mill., 2. p. 31.  
*Synonymy.* *R. oleoides* Lam. *Fl. Fr.*, 2. p. 545., ed. 3., No. 4075.

*Spec. Char., &c.* Diffuse. Leaves quite entire, coriaceous, pubescent. (*Don's Mill.*, ii. p. 31.) A deciduous shrub, growing to the height of 3 ft., a native of the south of France and of the Levant, and introduced in 1817. Probably only a variety of *R. oleoides*.

☞ 12. *R. LYCIOI'DES* Lin. The Lycium-like Buckthorn.

*Identification.* Lin. Sp., 279.; Dec. Prod., 2. p. 25.; Don's Mill., 2. p. 31.  
*Engraving.* Cav. Icon., 2. t. 182.

*Spec. Char., &c.* Erect. Leaves linear, quite entire, obtuse, smooth. Flowers hermaphrodite. (*Don's Mill.*, ii. p. 31.) A deciduous shrub, a native of Spain, growing to the height of 3 ft. or 4 ft., on the limestone hills of Valencia. Introduced in 1752.

*Variety.*

☞ *R. l. 2 arragonensis* Asso *Syn. Arr.*, p. 27., has the leaves yellowish on the upper surface, and is found in Arragon.

☞ 13. *R. ERYTHROXYLON* Pall. The red-wooded Buckthorn.

*Identification.* Pall. *Fl. Ross.*, 2. t. 62.; *Itin.*, French edit., t. 90.; Dec. Prod., 2. p. 25.; Don's Mill., 2. p. 31.  
*Engravings.* Pall. *Fl. Ross.*, 2. t. 62.; *Itin.*, French edit., t. 90.; and our fig. 204.

*Spec. Char., &c.* Erect. Leaves linear, lanceolate, quite entire or serrated, smooth. Flowers hermaphrodite. Berries oblong. (*Don's Mill.*, ii. p. 31.)



204.

A deciduous shrub, growing to the height of 6 ft., in rocky and gravelly situations, near the rivers of Mongolia and Siberia. Introduced in 1823. It delights in a warm situation; and in cold and humid places, Pallas observes, it is never met with. The wood, on account of its hardness and red colour, is used by the Mongols for making their images; and the berries, when macerated in water, afford them a deep yellow colour. The plant, in its wild state, is a prickly bush; but, when cultivated, the spines no longer appear. There is a



205

small plant of this species in the garden of the London Horticultural Society; and another in the arboretum of Messrs. Loddiges.

*Variety.*

- \* *R. E. 2 angustissimum* Dec. Prod., ii. p. 25., *R. lycioides* Pall. *Fl. Ross.*, t. 63., (fig. 205.) has the leaves narrow, smaller, and very finely serrated. It is a native of Caucasus and Achalgory.

b. *Branchlets not terminated by Spines.*

- \* 14. *R. RUPESTRIS* Vill. The Rock Buckthorn.

*Identification.* Vill. Dauph., 2. p. 531.; Don's Mill., 2. p. 31.

*Synonymes.* *R. pumilus* β *rupestris* Dec. Prod., 2. p. 25.

*Spec. Char., &c.* Procumbent, branched. Leaves ovate, quite entire, smooth. Flowers diœcious. (*Don's Mill.*, ii. p. 31.) A procumbent deciduous shrub, a native of Dauphiné, on rocks; and introduced in 1752.

- \* 15. *R. VALENTINUS* Willd. The Valencia Buckthorn.

*Identification.* Willd. Spec., 1. p. 1096.; Don's Mill., 2. p. 31.

*Synonymes.* *R. pumilus* Cav. *Icon.*, 2. t. 181.; *R. pumilus* var. *valentinus* Dec. Prod., 2. p. 25.

*Engraving.* Cav. *Icon.*, 2. t. 181.

*Spec. Char., &c.* Procumbent. Leaves roundish, elliptical, minutely crenate, and nearly sessile. Flowers 4-cleft, hermaphrodite. (*Don's Mill.*, ii. p. 31.) A procumbent deciduous shrub, a native of Spain, on the mountains of Mecca and Palomera, in the kingdom of Valencia; introduced in 1816; flowering in June and July.

- \* 16. *R. WULFENII* Spreng. Wulfen's Buckthorn.

*Identification.* Spreng. Syst., 1. p. 762.; Don's Mill., 2. p. 31.

*Synonymes.* *R. pumilus* Wulf. in *Jacq. Coll.*, 2. p. 141.; *R. pumilus* var. *Wulfeni* Dec. Prod., 2. p. 25.

*Engraving.* Jacq. Coll., t. 11.

*Spec. Char., &c.* Erectish. Leaves orbicular, with cartilaginous crenated margins, veiny, silky beneath on the nerves. Stigma simple. Flowers hermaphrodite. (*Don's Mill.*, ii. p. 31.) A subprocumbent deciduous shrub, growing to the height of 2 ft., a native of Austria; introduced in 1752, and flowering in June and July.

- \* 17. *R. PUSILLUS* Ten. The small Buckthorn.

*Identification.* Ten. Prod., 16.; Don's Mill., 2. p. 31.

*Synonyme.* *R. pumilus* var. *neapolitanus* Dec. Prod., 2. p. 25.

*Spec. Char., &c.* Procumbent. Leaves obovate, acute, crenulated, and mucronate at the apex. Flowers hermaphrodite. Stigma 3-parted. (*Don's Mill.*, ii. p. 31.) A deciduous procumbent shrub, a native of Naples, and introduced in 1823; flowering in June and July.

- \* 18. *R. DAHURICUS* Pall. The Dahurian Buckthorn.

*Identification.* Pall. *Fl. Ross.*, 2. t. 61.; Dec. Prod., 2. p. 25.; Don's Mill., 2. p. 31.

*Engraving.* Pall. *Fl. Ross.*, 2. t. 61.

*Spec. Char., &c.* Erect. Leaves oblong-ovate, serrated, smooth, veiny. Flowers diœcious, female ones with bifid stigmas. (*Don's Mill.*, ii. p. 31.) A deciduous shrub, growing to the height of 5 ft.; found near the river Arguinus in Dahuria, but not in any other part of Siberia. The flowers are of

a greenish yellow colour; berries black, about the size of a pea; and the general appearance of the plant is that of *R. catharticus*, of which it may possibly be only a variety. In 1833, there was a small plant of it in Loddiges's arboretum. The wood is red, and is called sandal wood by the Russians.

♁ 19. *R. ALNIFOLIUS* L'Hérit. The Alder-leaved Buckthorn.

*Identification.* L'Hérit. Sert., t. 5.; Dec. Prod., 2. p. 25.; Don's Mill., 2. p. 32.  
*Engravings.* Hayne Abbild., t. 61.; and our fig. 206.

*Spec. Char., &c.* Erect. Leaves obovate or ovate, serrulated, obliquely lineated, with lateral nerves, acuminate or obtuse, smoothish beneath, except the nerves. Flowers hermaphrodite or diœcious. Pedicels 1-flowered, aggregate. Calyxes acute. Fruit turbinate. (*Don's Mill.*, ii. p. 32.) A deciduous shrub, growing to the height of 8 ft.; a native of North America, introduced in 1778; but not the *R. alnifolius* of Pursh. There are plants of this name in the nurseries, which, in London, cost 1s. 6d.; at New York, 50 cents.



♁ 20. *R. FRANGULOIDES* Michx. The Frangula-like Buckthorn.

*Identification.* Michx. Fl. Bor. Amer., 1. p. 153.; Don's Mill., 2. p. 32.  
*Synonymes.* *R. alnifolius* var. *franguloides* Dec. Prod., 2. p. 25.  
*Engravings.* N. Du Ham., 3. t. 15, and our fig. 207.

*Spec. Char., &c.* Leaves oval, serrated, pubescent on the nerves beneath. Peduncles twice bifid. Berries depressed, globose. (*Don's Mill.*, ii. p. 32.) A deciduous shrub, growing to the height of 8 ft.; a native of North America, from Canada to Virginia, on dry hills, near rivers; producing its green flowers in June and July, which are succeeded by small, round, black berries. Introduced in 1810. This sort, and some of the others, may possibly be only seminal varieties, or natural hybrids; for, in a genus in which there are so many species, it is to be expected that accidental cross fecundation will occasionally take place. From whatever source, however, a distinct form is produced, it can always be wanted in gardens by propagation by extension; and, so long as mankind have wealth, intelligence, and leisure to admire the varied productions of nature, the greater the number of these varied productions, the more ample will be their source of enjoyment.



♁ 21. *R. ALPINUS* Lin. The Alpine Buckthorn.

*Identification.* Lin. Spec., 213.; Don's Mill., 2. p. 32.  
*Engravings.* N. Du Ham., 3. t. 13.; Bot. Cab., t. 1077.; our fig. 208.; and our plate of the tree in Vol. II.

*Spec. Char., &c.* Erect, twisted. Leaves oval-lanceolate, crenate-serrated, smooth, lineated with many parallel nerves. Flowers diœcious, female ones with 4-cleft stigmas. (*Don's Mill.*, ii. p. 32.) A deciduous shrub, growing to the height of 4 ft., in the Alps, of Switzerland, Dauphiné, and Carniola. Introduced in 1752. The flowers are greenish, and produced in May and June, and the berries black. This is a very distinct species, and remarkable for its twisted leaves. There is a strong plant of it in the arboretum of Messrs. Loddiges, and one in the garden of the Horticultural Society, which, in 10 years, has attained the height of 8 ft., and the character of a small tree.



✱ 22. *R. PUMILUS* Lin. The dwarf Buckthorn.

*Identification.* Lin. Mant., 49.; Don's Mill., 2. p. 32.  
*Synonymie.* *R. rupëstris* Scop. Carn., 1. t. 5.  
*Engraving.* Scop. Carn., 1. t. 5.

*Spec. Char., &c.* Plant procumbent, much branched. Leaves ovate, serrated, smooth. Flowers hermaphrodite. (*Don's Mill.*, ii. p. 32.) A deciduous procumbent shrub, a native of Mount Baldo in the Alps, and of Carniola, in the fissures of rocks. Introduced in 1752. Flowering in June and July. The flowers are greenish yellow, the stamens white, and the berries black.

§ ii. *Frángula* Tourn.

*Identification.* Tourn. Inst., t. 583.; Dec. Prod., 2. p. 26.; Brongn. Mém. Rham., t. 55.

*Sect. Char.* Flowers hermaphrodite, rarely diœcious, 5-cleft, sometimes 4-cleft. Seeds smooth, compressed, with the hilum white and exserted, and with the raphe lateral, on the surface of the inner testa. Embryo flat. Leaves membranous, caducous, quite entire, lined with approximate parallel nerves. (*Don's Mill.*, ii. p. 32.)

§ 23. *R. CAROLINIANUS* Walt. The Carolina Buckthorn.

*Identification.* Walt. Car., p. 101.; Pursh, 1. 166.; Michx. Fl. Amer., 1. p. 153.; Dec. Prod., 2. p. 26.; Don's Mill., 2. p. 32.

*Spec. Char., &c.* Erect. Leaves oval-oblong, almost entire, smooth. Umbels stalked. Flowers hermaphrodite. Berries globose. (*Don's Mill.*, ii. p. 32.)

A deciduous shrub, growing to the height of 6 ft., in woods and swamps, in Virginia and Carolina. Introduced in 1819. It flowers in May and June, and the berries are black, and 4-seeded.

‡ 24. *R. FRÁNGULA* L. The breaking Buckthorn, or Berry-bearing Alder.

*Identification.* Lin. Spec., 280.; Don's Mill., 2. p. 32.

*Synonymes.* Nerprun Bourgène, Aune noir, Fr. glatter Wegdorn, Ger.

*Derivation.* The name of Frángula, breaking, is applied to this species, from the brittleness of its branches.

*Engravings.* Eng. Bot., t. 250.; CEd. Fl. Dan., t. 278.; our fig. 209.; and the plate of the species in Vol. 11.

*Spec. Char., &c.* Leaves oval, quite entire, lined with 10 or 12 lateral nerves, and, as well as the calyx, smooth. Flowers hermaphrodite. (*Don's Mill.*, ii. p. 32.) A deciduous shrub, or low tree, with stems from 3 to 5 ft. high, in a wild state; but, in cultivation, attaining more than double that height. The branches are numerous, alternate, leafy, round, smooth, and blackish. The flowers are whitish, with purple anthers, and the berries are dark purple, each with two large seeds. A native of Europe, and part of Siberia, in Asia, in woods and thickets. It is not uncommon in England, but rare in Scotland. It is common in all the north of Russia, in Siberia, and Caucasus, and in Taurida. The berries are used by the Russians for dyeing yellow, and the bark for dyeing a tawny colour. From a quarter to half an ounce of the inner bark, boiled in small beer, is a sharp purge. In dropsies, or constipation of the bowels in cattle, it is a very certain purgative. The berries are also purgative, like those of the common buckthorn. These, gathered before they are ripe, dye wool green and yellow; when ripe, blue grey, blue, and green. The bark dyes yellow, and, with a preparation of iron, black. The flowers are particularly grateful to bees. Goats devour the leaves voraciously, and sheep will eat them. The charcoal prepared from the wood is preferred by the makers of gunpowder to any other. The berries of this species, and also of the cornel, are said to have been formerly brought to market for those of the common buckthorn. They are easily distinguished; the true buckthorn having 4 seeds, and this only 2; and the cornel one nut enclosing two kernels. (*Martyn's Müller.*) The plant of this species in the garden of the London Horticultural Society was, in 1835, 8 ft. high, after being 10 years planted; and that at Messrs. Lodiges was still higher in 1833, but it has been since cut down.



*Variety.*

‡ *R. F. 2. angustifolia* Hort., has narrower leaves. The plant of this species in the Horticultural Society's Garden is very distinct, and, in 1835, was 6 ft. high, after being 10 years planted.

‡ 25. *R. LATIFOLIUS* L'Hérit. The broad-leaved Buckthorn.

*Identification.* L'Hérit. *Sert.*, 5. t. 8.; Dec. *Prod.*, 2. p. 26.; Don's *Mill.*, 2. p. 32.  
*Engravings.* L'Hérit. *Sert.*, 5. t. 8.; Dend. *Brit.*, t. 11.; Willd. *Abbild.*, t. 100.; E. of *Pl.*, No. 2886.;  
our *fig.* 210.; and the plate of this tree in Vol. 11.

*Spec. Char., &c.* Leaves elliptical, acuminate, quite entire, lineated with 12 or 15 lateral nerves; younger leaves and calyxes villous. Flowers hermaphrodite. (Don's *Mill.*, ii. p. 32.) A deciduous shrub, with the habit of a low tree; a native of the Azores, on the mountains of St. Michael. Introduced in 1778. It flowers in July, and the berries which succeed them are either red or black, both colours appearing on the same plant. The leaves are larger than those of any other species; and the whole plant is remarkable for its robust appearance, and the conspicuous opposite nerves, which proceed from the middle of the leaves. It deserves a place in every collection. There is a tree of it at Syon 15 ft. high. In London, plants are from 1s. to 1s. 6d. each. At Bollwyller, 1 franc and 50 cents; and at New York, 50 cents.



App. i. *Hardy Species of Rhámnus not yet introduced.*



*R. sanguineus* Pers., a native of Galicia, on the banks of rivers, where it grows to the height of 6 ft.

*R. minutiflorus* Pursh, a native of the sea coasts of Carolina and Florida.

The following species probably belongs to another genus; but, not having seen the plant, we can say nothing about it of our own knowledge.

*R. carpinifolius* Pall. *Ros.*, 2. p. 24. t. 60., Willd. *Spec.*, 1101., and N. Du Ham., vol. iii. p. 40., (*fig.* 212.) is said to be a tree resembling the hornbeam. Pallas says that it abounds in the calcareous mountains of Kuitai, in Russia, but that he never saw its flowers. It may possibly be a *Plánera*.

*R. amygdálinus* Desf. *Atl.*, 1. p. 198., a native of the north of Africa, in the fissures of rocks, where it grows to the height of 3 ft., and produces berries used for dyeing yellow, like those of *R. saxatilis*.

*R. persicifolius* Moris. *Stirp. Sard.*, 4to, fasc. 2., a native of Sardinia, and probably only a synonyme of *R. amygdálinus*.

*R. prunifolius* Smith *Prod. Fl. Græc.*, 1. p. 157., a native of Crete, on the highest mountains, and probably only a variety of one of the preceding sorts.

*R. Sibthorpianus* Schult. *Syst.*, 6. p. 286., *R. pubescens* *Sibth. Fl. Græc.*, t. 239., a native of Mount Parnassus, and nearly allied to *R. alpinus*, and *R. Frángula*.

*R. Purshianus* Dec. *Prod.*, 2. p. 25. (*fig.* 211.), the *R. alnifolius* of Pursh but not of L'Héritier, a shrub, growing to the height of 6 ft., native of North America, on the banks of the Koorkoosky.



App. ii. *Half-hardy, or Green-house, Species.*

*R. integrifolius* Dec. *Hort. Monsp.*, *R. coriáceus* *Nees's Hort. Phys.*, p. 114. t. 22., is a shrub, a native of Teneriffe, on the highest peak, where it attains the height of 2 ft.; introduced in 1822. and, doubtless, half-hardy.

*R. prinóides* L'Hérit. *Sert.*, 6. t. 9., *Zizyphus lúcidus* *Manch* is a shrub, growing 10 ft. high in Africa, at the Cape of Good Hope; introduced in 1778.

*R. celtidifolius* Thunb. is a native of the Cape of Good Hope, not yet introduced.

*R. crenulátus* Ait. *Hort. Kew.*, 1. p. 263., is a shrub, growing to the height of 6 ft. on the mountains of Teneriffe; in culture in British green-houses in 1778.

*R. serrulátus* H. B. et Kunth *Nov. Sp. Amer.*, 7. p. 51. t. 617., is a shrub, growing to the height of 6 ft. in Mexico, not yet introduced.

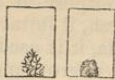
*R. microphýllus* Willd. is a trailing shrub, a native of Mexico, resembling *R. oleóides*, introduced in 1823.

*R. umbellátus* Cav. *Icon.*, 6. p. 2. t. 504., is a shrub, growing 6 ft. high in Mexico.

*R. tenuifolius* Moc. in Dec. *Prod.*, 2. p. 25., is a native of Mexico, of which little is known.

Besides the above, there are some doubtful green-house species, all of which it would be desirable to procure, in order to prove their degree of hardiness, and assist in reducing this genus to order.

## GENUS V.



CEANO'THUS L. THE CEANO'THUS, or RED ROOT. *Lin. Syst.*  
Pentándria Monogýnia.

*Identification.* Brongn. Mém. Rham., p. 62; Hook. Fl. Bor. Amer., 1. p. 124; Dec. Prod., 2. p. 31; Don's Mill., 2. p. 37.

*Synonymes.* *Rhámnus* species L., *Juss., Lam.*; Céanothe, *Fr.*; Sakebaum, *Ger.*

*Derivation.* From *keanóthus*, a name employed by Theophrastus to designate a spiny plant, derived from *keo*, to cleave: the modern genus has, however, nothing to do with the plant of Theophrastus. The English name red root is given to the plant in America, from the red colour of the roots, which are of a large size in proportion to the branches.

*Description, &c.* Deciduous shrubs, with large red roots, herbage generally pubescent, with numerous erect branches, seldom exceeding 3 ft. or 4 ft. in height, but, in one or two cases, attaining the height of 6 ft. or 8 ft., with alternate, serrated, 3-nerved leaves, and white, blue, or yellow flowers, in terminal panicles, or in axillary racemes. They are chiefly natives of North America, very ornamental in British gardens, and easily propagated by cuttings of the young wood, planted in sand, and covered with a hand-glass. Most of the species produce seeds freely in British gardens, and they all grow in any common garden soil.

■ 1. *C. AZU'REUS* Desf. The azure-flowered Ceanothus, or Red Root.

*Identification.* Desf. Cat., 1815, p. 232; Dec. Prod., 2. p. 31; Don's Mill., 2. p. 37.

*Synonymes.* *C. cæruleus* Lag. *Gen. et Spec.* 1816, p. 11., *Lodd. Bot. Cab.*, t. 110.; *C. bicolor* Willd. in *Schult. Syst.*, 7. p. 65.

*Engravings.* Bot. Reg., t. 291; Lodd. Bot. Cab., t. 110.; and our fig. 213.

*Spec. Char., &c.* Leaves ovate-oblong, obtuse, acutely serrated, smooth above, hoary and downy beneath. Thyrses elongated, axillary, with a downy rachis. Pedicels smooth. (*Don's Mill.*, ii. p. 37.) A very handsome shrub, with brilliant celestial blue flowers in large panicles; a native of Mexico, where its bark is considered as a febrifuge. Introduced in 1818. It is the most robust-growing species of the genus, attaining, in 3 or 4 years from seed, the height of 5 ft. or 6 ft. or more, against a wall. It was at first treated as a green-house plant, but lately it has been found to be nearly as hardy as the North American species. There is a plant in the Botanic Garden at Kew which has stood out 10 years; one in the Lewisham Nursery which has stood out 4 years as a standard; and one in the Fulham Nursery, 10 ft. in extent, which stands out without any protection whatever.



213

■ 2. *C. AMERICANUS* L. The American Ceanothus, or Red Root; or New Jersey Tea.

*Identification.* *Lin. Spec.*, 281; Dec. Prod., 2. p. 31; Hook. Fl. Bor. Amer., 1. p. 124; Don's Mill., 2. p. 37.

*Engravings.* *Duh. Arb.*, 1. t. 51.; *Mill. Ic.* t. 57.; *Bot. Mag.*, t. 1497; and our fig. 214.

*Spec. Char., &c.* Leaves ovate, acuminate, serrated, pubescent beneath. Thyrses elongated, axillary, with a pubescent rachis. (*Don's Mill.*, ii. p. 37.) A shrub, from 2 ft. to 4 ft. high; a native of North America, in dry woods from Canada to Florida. Introduced in 1713. The leaves and stems of the plant are pubescent; the flowers are small and white; but, being produced in great numbers together, are very ornamental. They appear in June and July, and are succeeded by bluntly triangular fruits, and, about London, in fine seasons, it ripens seeds. It is abundant in most parts of North America, where it is



214

commonly known by the name of New Jersey tea; the leaves having been formerly dried for the same purpose as those of the Chinese tea plant; and for which, according to Pursh, it formed a general substitute during the war of independence. In Canada, it is used for dyeing wool of a nankin, or cinnamon, colour. This shrub will grow in any soil that is tolerably dry, and is not uncommon in British gardens. Plants, in the London nurseries, are 1s. 6d. each, and seeds 1s. per ounce. At Bollwyler, plants are 1 franc each. At New York, plants are 15 cents each, and seeds 1 dollar a quart.

3. *C. (A.) TARDIFLO'RUS* Horn. The late-flowering *Ceanothus*, or *Red Root*.  
*Identification.* Horn. Hort. Hafn., 230.; Dec. Prod., 2. p. 31.; Don's Mill., 2. p. 37.

*Spec. Char., &c.* Leaves cordate-ovate, serrated, downy beneath. Thyrses elongated, axillary. (Don's Mill., ii. p. 37.) A native of North America, introduced in 1820, and, in all probability, only a variety of the foregoing species.

4. *C. OVA'TUS* Desf. The ovate-leaved *Ceanothus*, or *Red Root*.

*Identification.* Desf. Arb., 2. p. 381.; Dec. Prod., 2. p. 31.; Don's Mill., 2. p. 37.

*Spec. Char., &c.* Leaves ovate or oval, serrated, smooth on both surfaces, as well as the peduncles. Thyrses short, axillary? (Don's Mill., ii. p. 37.) A native of North America, where it grows from the height of from 2 ft. to 4 ft. It is generally confounded in gardens with *C. americanus*, from which, however, it appears quite distinct. A plant of this species was in Knight's Exotic Nursery, King's Road, in 1830.

5. *C. INTERMEDIUS* Pursh. The intermediate *Ceanothus*, or *Red Root*.

*Identification.* Pursh Fl. Sept. Amer., 1. p. 167.; Hook. Fl. Bor. Amer., 1. p. 124.; Dec. Prod., 2. p. 32.; Don's Mill., 2. p. 37.

*Spec. Char., &c.* Leaves oval-oblong, acute, mucronately serrulated, triple-nerved, pubescent beneath. Panicles axillary, on long peduncles, with loose corymbose pedicels. (Don's Mill., ii. p. 37.) A deciduous shrub; a native of North America, in the woods of Tennessee: introduced in 1812, and producing its white flowers in June and July. Height from 2 ft. to 4 ft. This species is readily distinguished from *C. americanus* by its very small leaves, which are not one fourth the size of those of that species.

6. *C. SANGUINEUS* Pursh. The bloody-branched *Ceanothus*, or *Red Root*.

*Identification.* Pursh Fl. Sept. Amer., 1. p. 167.; Hook. Fl. Bor. Amer., 1. p. 125.; Dec. Prod., 2. p. 32.; Don's Mill., 2. p. 37.

*Spec. Char., &c.* Leaves oblong-ovate, serrated, pubescent beneath. Panicles axillary, thyrsose, on very short peduncles. Pedicels aggregate. (Don's Mill., ii. p. 37.) A shrub, from 2 ft. to 3 ft. in height, found near the Rocky Mountains, on the banks of the Missouri. It is readily distinguished by its branches, which, as the specific name implies, are of a blood-red or purplish colour. The flowers, which appear in May and June, are white, and are produced on panicles not longer than the leaves.

7. *C. MICROPHYLUS* Michx. The small-leaved *Ceanothus*, or *Red Root*.

*Identification.* Michx. Fl. Bor. Amer., 2. p. 154.; Dec. Prod., 2. p. 32.; Don's Mill., 2. p. 37.

*Synonymy.* *C. hypericoides* L'Herit. MSS.

*Spec. Char., &c.* Leaves oblong, obtuse, entire, minute, sub-fascicled, smooth. Branches straight, somewhat decumbent. Corymbs stalked, loose, terminal. (Don's Mill., ii. p. 37.) A shrub growing to the height of 2 ft., found in sandy woods from Carolina to Florida, and introduced in 1806. The leaves are very small, not being more than 3 or 4 lines in length; and the whole plant is of a delicate habit; but it has large red roots, as in all the other species. The flowers are white, and produced in May and June; and they are succeeded by almost globular fruit.

### App. i. Other Species of *Ceanothus*.

*C. velutinus* Hook. Fl. Bor. Amer., i. p. 125. t. 45., (fig. 215.) is a very beautiful species, discovered by Douglas, and described by Professor Hooker from dried specimens in the possession of the London Horticultural Society. The plant grows from 3 ft. to 3 ft. high. The leaves are broad, sometimes subordinate, obtuse, from 3 in. to 4 in. long, and from 3 in. to 3 in. broad; and the flowers are white, in terminal panicles. The plant is found on subalpine hills, near the sources of the Columbia, and at the Kettle Falls. This seems a very desirable species, and, when introduced, will probably be found the next in beauty to *C. azureus*, which it appears to surpass in robustness of growth.

*C. laevigatus* Hook. Fl. Bor. Amer., i. p. 125., also discovered by Douglas, and described from dried specimens, is probably only a variety of *C. velutinus*. It is found on mountains near the coast of the north-west of America, and at Nootka Sound.

*C. thyrsiflorus* Esch. Mém. Acad. Scienc. Peters., x. p. 221., Hook. Bor. Amer., i. p. 125., was discovered on the north-west coast of America by Mr. Menzies. The flowers are surrounded by densely imbricated, ovate, and acute bractes, which drop before the blossoms are expanded. The calyx is blue, and the petals white. The whole plant turns black in drying.



We have little doubt that all the above species would cross-fecundate, and, consequently, that the beautiful ultramarine blue of the flowers of *C. azureus*, or some portion of it, might be given to *C. americanus*, which would be a very desirable acquisition. Indeed, there is such a close general resemblance between all the sorts described, that we cannot help suspecting that they are only races or varieties of one or two original forms. *C. azureus*, *C. americanus*, and *C. velutinus* when it can be got, ought to be in every collection. Where there is a conservative wall, and the choice is limited to half a dozen or a dozen plants, *C. azureus*, which continues in flower during the greater part of summer, ought undoubtedly to be one of them.

App. I. *Half-hardy Genera and Species of the order Rhamnaceæ.*

*Sphaerocarya* (from *sphaira*, a sphere, and *caryon*, a nut) *edulis* Wall. Fl. Ind., ii. p. 371., Don's Mill., ii. p. 27., is a native of Nepal, in forests, producing a fruit of a pale brown colour, the flesh of which is eaten by the inhabitants. It grows to a tree of 40 ft. in height, with ovate, alternate, smooth leaves, and racemes of greenish inodorous flowers. When introduced, it will probably be found not more tender than other Nipal trees.

*Condalia* (in honour of *Anthony Condal*, M.D., the companion of Loefling in his voyages) *microphylla* Cav. Icon., 6. p. 16. t. 525., Don's Mill., 2. p. 27., (fig. 216.) is a spiny shrub, a native of Chili, a good deal resembling a *Zizyphus*.

*Sageretia* (named in honour of *M. Sageret*, member of the Royal Agricultural Society of Paris, a vegetable physiologist) *Theezans* Brongn. *Mém. Rham.*, p. 52., Don's Mill., ii. p. 28.; the *Rhamnus Theezans* of Lin. Mant., 207., and the *R. Thea* of Osb. Itin., 232., is a shrub growing to the height of 4 ft., a native of China, where it is said the poor make use of the leaves instead of those of the true tea. The branches are divaricate, spiny at the apex. Leaves ovate, smooth, serrulated. Flowers somewhat paniced, glomerated, in terminal spikes, greenish. This species has not yet been introduced; though there are plants bearing the name of *Rhamnus Theezans* in the garden of the London Horticultural Society, growing with great luxuriance, which appear to be only a variety of *Rhamnus Alaternus*.

*S. oppositifolia* Brongn., the *Zizyphus oppositifolia* of Wall., and *S. hamosa* Brongn., the *Zizyphus hamosa* of Wall., are Nepal climbing shrubs, which have not yet been introduced; and which, though marked as requiring the green-house, would doubtless stand against a conservative wall.

*Scutia* (from *scutum*, a shield, in allusion to the form of the disk of the flower) *capensis* Brongn. *Mém. Rham.*, p. 55., Don's Mill., ii. p. 33.; the *Rhamnus capensis* of Thunb., and *Ceanothus capensis* of Dec., is a Cape shrub, growing to the height of 4 ft.; introduced in 1823, and sometimes to be found in green-houses.

*Retanilla* (from *retanilla* is the aboriginal name in Peru) *obcordata* Brongn. *Mém. Rham.*, p. 57., Don's Mill., ii. p. 34., the *Rhamnus Retanilla* of Domb., and the *Collètia Retanilla* of Vent. Hort. Cels., t. 92., is a twiggly shrub, with white flowers, a native of Peru, where it grows to the height of 3 ft. *R. Ephemera* Brongn., the *Rhamnus Ephemera* of Domb., and the *Collètia Ephemera* of Vent. Choix., t. 16., is also a native of Peru. Both these shrubs are in the country, and are kept in green-houses; but we have little doubt of their being as hardy as the plants of the genus *Collètia*.

*Collètia* (named by Commerson in honour of his friend and countryman *Collet*, who wrote upon the plants of Brest) *spinosa* Kunth Nov. Gen. Amer., 7. p. 58., Hook. Bot. Miscel., 1. p. 153. t. 44 A., (fig. 217.) the *Collètia polyacantha* of Willd., is a native of Chili, Peru, and also of Brazil. It is a shrub with few and small leaves, but with numerous, very strong, awl-shaped spines. The flowers are of a reddish yellow, and whitish in the centre. This shrub has been tried in the open air, both against a wall and in the open border, in the Horticultural Society's Garden; and, in 1835, it had stood three years, without any protection, flowering freely in the summer season, from May to August. It has stood out for three winters in the open border in Buchanan's Nursery, Camberwell, without any protection, and against a wall in the Fulham Nursery. We think we can safely recommend it as a shrub for the open border, at least in dry sheltered situations.

*C. serratifolia* Vent. Choix., t. 15.; the *Rhamnus Spartium* of Domb., also from Peru; *C. cruciata* Gill. et Hook. Bot. Misc., 1. p. 152. t. 43., from sandy hills in La Plata; *C. ferax* Gill. et Hook., from Chili; *C. ulicina* Gill. et Hook., the ulax, or furze-like *Collètia*, also from Chili; *C. Chacaye G. Don*, the *Rhamnus Chacaye* of Domb., from Peru; and *C. tetragona* Brongn., also from Peru; are probably as hardy as *C. spinosa*. They will grow in a common garden soil, and are propagated by cuttings or seeds.

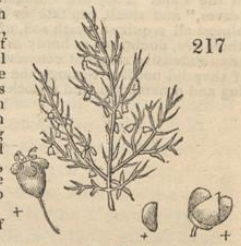
*Trevia* (from *Trevo*, the name of some Spanish botanist) *quinquenervis* Meyers in Hook. Bot. Misc., 1. p. 158. t. 45. B., and Don's Mill., 2. p. 35., and *T. trinervis*, are spiny shrubs, growing to the height of 4 ft. or 6 ft.; natives of Chili, on the Andes, and probably as hardy as *Collètia*. The last species was introduced in 1828.

*Discaria* (from *discus*, a disk; the disk of the flower being very broad) *americanæ* Hook. Bot. Misc., 1. t. 44. D., is a spiny shrub, a native of Buenos Ayres; and *D. australis* Hook. is a native of New Holland; neither of which has yet been introduced.

*Hovenia* (in honour of *D. Hoven*, a senator of Amsterdam, who contributed to the success of the travels of Thunberg by his good offices) *dulcis* Thunb. is a fruit tree of Japan, where it is called *ken*, and *kenpokomas*. It has large, cordate, acuminate leaves, and small white flowers. The fruit is said to contain a sweet red pulp, which has a taste somewhat like that of a pear. It was introduced in 1812; and a plant of it in the Botanic Garden at Kew has stood against a south wall since the year 1816. Another has stood in the Horticultural Society's Garden since the year 1816; in both gardens, they have attained the height of the wall; and, though the young shoots are generally killed back in winter, when they receive no protection, yet the plants grow vigorously during every summer. The tree, which grows to the height of 12 ft. in its native country, is figured in *Kempfer's Amoen. Ex.*, 2. p. 809. In 1830 there was a plant of this species in Knight's Nursery, 10 ft. high, in a pot.



216



217

*Colubrina* (from *coluber*, a snake; in allusion to the twisted stems) *triflora* Brongn. and Don's Mill., 2. p. 36, the *Rhàmnus triflorus* of Moc. et Sesse; and *C. Mociniàna* G. Don, the *Ceanòthus Mociniànus* of Dec., are Mexican shrubs; the latter introduced in 1824. There are some Nepal species of this genus, not yet introduced, which will probably be found hardier than those from Mexico.

*Willemia* (in honour of C. L. Willemet, author of *Herbarium Mauritaniùm*) *africana* Brongn. and Don's Mill., 2. p. 38; the *Ceanòthus africanus* of Lin. Seb. Thes., 1. t. 22. f. 6, is a Cape shrub, which has been an inhabitant of our green-houses since 1712. It is readily distinguished by its purplish red branches, and lanceolate, serrated, shining leaves. It is an elegant shrub, considering the order to which it belongs; and, on a conservative wall, would deserve the preference to any that we have enumerated.

*Pomaderris* (from *poma*, a lid, and *aeris*, a skin; in allusion to the membranous covering to the capsule) *elliptica* Labill., Don's Mill., 2. p. 38, Sims Bot. Mag., t. 1510, (fig. 218.) is a

218



shrub from Van Diemen's Land, growing to the height of 6 ft., and introduced in 1805. It bears a general resemblance to *Ceanòthus azureus*; but it has smoother and more shining foliage, and cream-coloured flowers. Being a native of Van Diemen's Land, it will probably be found tolerably hardy. There are several other Australian species, and some from the South Seas, which will be found enumerated in Don's *Miller*, and in our *Hortus Britannicus*, all of which might be tried against a conservative wall.

The genera *Cryptandra* Smith, *Bartlingia* Brongn., *Solenántha* G. Don, *Tetrapásma* G. Don, *Trichocéphalus* Brongn., *Phýlica* Lin., *Soulangia* Brongn., *Gouànià* Jacq., *Carpodétus* Forst., and *Oliènia* Thunb., all afford ligneous plants, marked in Don's *Miller* and in our *Hortus Britannicus* as inhabitants of the green-house; but, as far as we have observed, none of them have been tried against a conservative wall, except *Phýlica ericoides* Lin. (Bot. Mag., t. 224., and our fig. 219.), which is a heath-like

219



shrub, growing from 2 ft. to 3 ft. in height; and producing white flowers from April to September, which, in dry warm situations, on sandy soil, will pass the winter in the open air, with a little protection.

## CHAP. XXXVI.

### OF THE HALF-HARDY LIGNEOUS PLANTS OF THE ORDER BRUNIA'CEÆ.

THERE are nine genera included in this order in Don's *Miller*; and the species are mostly natives of the Cape. They are "much branched heath-like shrubs, with small, smooth, or hardly pilose leaves," and small, capitate or rarely paniced, spiked and terminal, or solitary flowers. They almost all require a heath soil, and to be propagated by cuttings, in the manner of heaths. Many of them are, doubtless, as hardy as some of the Cape heaths have been proved to be; and, where there is an extensive range of conservative walling, a few of each genus might be tried against it. Even if they did not live through the winter, their foliage and flowers, during summer, would be interesting and ornamental, and a stock of plants for turning out annually might be kept in pits.

## CHAP. XXXVII.

### OF THE HARDY OR HALF-HARDY LIGNEOUS PLANTS OF THE ORDER HOMALINA'CEÆ.

*DISTINCTIVE Characteristics.* Calyx funnel-shaped, its tube usually adnate to the ovary, its limb with 5—15 lobes. Petals inserted into the calyx, as many as its lobes, alternate with them, smaller than they, and deemed by some an inner whorl of lobes of the calyx. Glands present in front of the segments of the calyx. Stamens arising from the base of the petals, either singly, or in threes or sixes. Anthers 2-celled, opening longitudinally. Ovary 1-celled, with numerous ovules. Styles 3—5, simple. Ovules attached to as many parietal placentas as there are styles. Fruit berried or capsular. Seeds small, ovate, or angular, with an embryo in the middle of fleshy albumen. Trees or shrubs. Leaves alternate, with deciduous stipules, toothed or entire. Flowers in spikes, racemes, or panicles. (*Lindley Introd. to N. S.*, p. 79., adapted.) The ligneous species and varieties of which there are living plants in British col-

lections are four: *Aristotelia Macqui*, and the variety of this with variegated leaves; and two species of *Azara*: both genera are natives of Chili. The genus *Aristotelia* is considered by botanists as only allied to *Homalinceæ*; but we have placed it first in our enumeration, as being both the most conspicuous, and the hardiest plant of the order.

**ARISTOTELIA** L'Hérit. Calyx deeply 5-cleft. Corolla of 5 petals, inserted into the bottom of the calyx. Stamens 15—18, 3—4 in a fascicle in front of each lobe of the calyx. Ovary free. Fruit a globose berry, 3-celled, the cells 2-ovuled, 1—2-seeded. (*Dec. Prod.*, ii. p. 56.)

**AZARA** R. et P. Calyx 4—7-parted. Corolla none. Stamens numerous, inserted into the base of the calyx. Fruit a globose berry, 1-celled, 5-seeded from abortion; seed covered with a spongy aril when mature. (*Don's Mill.*, ii. p. 55.)

## GENUS I.



**ARISTOTELIA** L'Hérit. THE ARISTOTELIA. *Lin. Syst.* Polyadélphia Polyándria.

*Identification.* L'Hérit. *Stirp.* p. 31; *Dec. Prod.*, 2. p. 56.; *Don's Mill.*, 2. p. 58.

*Derivation.* Named in commemoration of Aristotle, the celebrated philosopher and naturalist.

■ 1. *A. MACQUI* L'Hérit. The Macqui Aristotelia.

*Identification.* L'Hérit. *Stirp.* p. 31.; *Dec. Prod.*, 2. p. 56.; *Don's Mill.*, 2. p. 58.

*Synonymes.* *A. glandulosa* R. et P. *Fl. Per. Syst.*, p. 126.; *Poir. Suppl.*, 587.; *A. Macqui* in *Dec. Prod.*, 2. p. 56.

*Engravings.* L'Hérit. *Stirp.*, t. 16.; *Lam. Ill.*, t. 369.; *Wats. Dend. Brit.*, t. 44.; *N. Du Ham.*, t. 33.; *Otto*, t. 88.; *E. of Pl.*, No. 6597.; and the plate of this tree in our Second Volume.

*Variety.*

■ *A. M. 2 foliis variegatis.* The variegated-leaved Macqui Aristotelia.

*Description, &c.* The species is a shrub with spreading branches and persistent leaves, which are almost opposite, with obvious petioles, and disks that are oblong, acute, more than 2 in. long, and about 1 in. broad, dentately serrate, glabrous, and of rather a full green colour. There are stipules, but they fall off. The flowers are small, green, and yellow, disposed in axillary racemes: some of the stamens are sterile. It is a native of Chili, where it forms an evergreen shrub, with diffuse branches, growing to the height of 6 ft. The flowers are not very showy; but, in Chili, they are succeeded by berries about the size of a pea, very dark purple, and at length becoming black. They are acid, eatable; and the inhabitants make a wine from them, which they give in malignant fevers. In British gardens, it forms a sub-evergreen shrub or low tree, of very vigorous growth; so much so, in a young state, that, from the shoots not being matured, they are frequently killed down to the ground, and the foliage more or less injured. Notwithstanding this, the aristotelia frequently flowers, and, against a wall, ripens fruit; and, in all probability, if the tree were planted in dry and rather poor soil, so as to grow slowly, and not make more wood every year than it could ripen properly, it would attain a large size, and form a very handsome hardy evergreen shrub or tree. There is a plant of it at Oriel Temple, near Dublin, which, in twenty years, has attained the height of 16 ft.; and there are specimens in most botanic gardens. There is a large one at Messrs. Loddiges's, and one in the garden of the London Horticultural Society, as a low bush, which, in 1835, flowered freely. There is a tree at Syon, 18 ft. high. A standard in our garden at Bayswater has stood since 1831, without the slightest protection, and flowers freely; it is trained to a single stem, and is 8 ft. high; but would probably have been twice that height if we had not been obliged to mutilate it for want of room. The plant grows vigorously in any common garden soil,

producing shoots 3 ft., 4 ft., or 5 ft. in length, when young; and it is readily propagated by cuttings, or by layers. The latter mode is generally adopted in British nurseries. Plants, in London, are 2s. 6d. each. In the case of the aristotelia and of all other shrubs or trees that are rather tender, it is very desirable, in cold situations north of London more especially, to have reserve plants, against a wall, or in pots, from which cuttings may be taken when wanted, to supply any deaths which may occur in the open garden.

## GENUS II.



### AZARA R. et P. THE AZARA. *Lin. Syst. Polyándria Monogýnia.*

*Identification.* R. et P. Fl. Per. et Chil. Prod., 1. p. 76. t. 36.; Syst., p. 137.; D. Don, in Edin. N. P. Journ. Jan. 1831; Don's Mill., 1. p. 297., 2. p. 55.

*Derivation.* In honour of Joseph Nicholas Azara, a Spanish promoter of science, and of botany in particular. (*Don's Mill.*, i. p. 297.)

*Description, &c.* The species are leafy evergreen shrubs or trees, with alternate, simple, stalked, stipulate leaves, which are bitter to the taste; and flowers disposed in corymbs or spikes, fragrant.

#### 1. A. DENTATA R. et P. The toothed-leaved Azara.

*Identification.* R. et P. Fl. Per. et Chil. Syst., 1. p. 138.; Fl. Per., 5. t. 465. fig. a; Dec. Prod., 1. p. 262.; Don's Mill., 1. p. 297., 2. p. 55, 56.

*Engravings.* R. et P. Fl. Per., 5. t. 465. fig. a; Bot. Reg., t. 1788.; and our fig. 220.

*Spec. Char., &c.* Leaves ovate, serrated, scabrous, tomentose beneath. Stipules leafy, one large, the other small. Corymbs sessile, few-flowered. Calyx 5-7-parted, spreading, with the segments somewhat imbricate in aestivation. Stamens numerous, many of them sterile. (*Don's Mill.*, ii. p. 55, 56.) An evergreen shrub or low tree, growing to the height of 12 ft. in its native country (Chili), in groves about Concepcion, where it is called Corcolen. It was introduced into England in 1830, or before, and flowered against a wall in the garden of the London Horticultural Society in 1835. The following particulars respecting it are from the *Bot. Reg.*, t. 1788. Branches pubescent. Leaves oblong, from 1 in. to 2 in. long, crenately sawed, deep, bright green, remarkably glossy. Flowers small, devoid of corolla, yellow in the anthers, which are protruded a little beyond the calyx, disposed in corymbose clusters that are shorter than the leaves, fragrant. *A. dentata*, in England, nailed to the south face of a wall, and protected from wet in winter, forms a very handsome evergreen bush. No drought seems to affect it; for, after nearly two months of the hottest and driest weather known in England, its leaves were perfectly fresh and green. (*Bot. Reg.*, Sept. 1835.)



#### 2. A. INTEGRIFOLIA R. et P. The entire-leaved Azara.

*Identification.* R. et P. Syst. Fl. Per. et Chil., 1. p. 138.; Fl. Per. 5. t. 466. f. a; Dec. Prod., 1. p. 262.; Don's Mill., 1. p. 297., 2. p. 56.; Gard. Mag., 10. p. 285.

*Engraving.* R. et P. Flor. Per., 5. t. 466.

*Spec. Char., &c.* Leaves obovate or oblong, entire, smooth. Stipules equal, permanent. Flowers spiked. Calyx with a connivent 4-cleft limb, furnished with scales on the inside, valvate in aestivation. Stamens not numerous, all fertile, disposed in fascicles opposite the lobes of the calyx. (*Don's Mill.*, ii. p. 56.) An evergreen shrub, a native of Chili, growing to about 12 ft. high, and found in groves about Concepcion, where it, as well as *A. dentata*, is called Corcolen. Mr. Knight of the Exotic Nursery, Chelsea, raised, in 1832, plants of this species from seeds obtained of Mr. Cuming, who had imported them from their native country. It is probably only a variety of the preceding. *A. serrata* R. et P., another species, is described in *Dec. Prod.* and *Don's Mill.*, 2. p. 56. This is a native of the same locality as the others, and is also a shrub 12 ft. high. All three are, probably, varieties of the same species.

### App. i. Other hardy or half-hardy ligneous Species of Homalinàcæ.

*Blackwellia nepalensis* Dec. is a Nepal shrub, with ovate leaves and whitish flowers.—*Astránthus cochinchinensis* Lour. (*Don's Mill.*, 2. p. 57.) is a tree with ovate, serrated, lanuginous leaves, and white flowers in long spikes, introduced in 1825.—*Netllia thyrsoiflora* D. Don, and *N. rubriflora* D. Don (*Don's Mill.*, 2. p. 57.), are hardy Nepal shrubs, with the habit of *Spiræa*; but they have not yet been introduced. The last generic name was given by Professor Don, in honour of his friend Patrick Neill, Esq., LL.D. F.R.S.E. and F.L.S., Secretary of the Wernerian and Horticultural Societies of Edinburgh; a gentleman who has been a great encourager of botany and gardening for many years, and to whose zeal and activity, and the universal esteem in which he is held in his native country, the Caledonian Horticultural Society owes its existence, and, in a great measure, its present prosperous state.

CHAP. XXXVIII.

OF THE HARDY OR HALF-HARDY LIGNEOUS PLANTS OF THE ORDER ANACARDIA'CEÆ.

*Identification.* Lindley, in *Intro. to N. S.*  
*Synonymes.* Terebinthaceæ, tribe 1. Anacardiæe *R. Br.*, and tribe 2. *Sumachinæe* Dec. Prod., 2. 66.

*Distinctive Characteristics.* Calyx in 5, occasionally in 3—4, or 7, divisions. Petals the same in number, inserted, in most, along with the stamens, into a perigynous disk: in some, not any. Sexes hermaphrodite, dioecious or polygamous. Stamens equal in number to the petals, and alternate with them, or twice as many, or even more. Ovary simple, superior. Seeds solitary. Leaves alternate. (*Lindl. Intro. to N. S.*) Low deciduous or evergreen trees, natives of Asia and Africa.

GENUS I.



PISTA'CIA L. THE PISTACHIA TREE. *Lin. Syst. Dicc'cia Pentándria.*

*Identification.* *Lin. Gen.*, 1108. ; Dec. Prod., 2. p. 64. ; Don's Mill., 2. p. 61. and 65.

*Synonymic.* Terebinthus *Juss.*

*Derivation.* From the Greek word *Pistakia*, derived, according to some, from *Psittakion*, the name of a city; and, according to others, from the Arabic word *Foustay*, the Arabian name of *Pistacia vera*.

*Gen. Char.* The sexes are dioecious, and the flowers without petals. In the male plants, the flowers are disposed in racemes that resemble catkins; every flower is bracteated by a scale; the calyx is 5-cleft; and the stamens are 5, inserted into a calycine disk, or into the calyx, and have 4-cornered, almost sessile, anthers. In the female plants, the flowers are disposed in a raceme, less closely than in the male; the calyx is 3—4-cleft; the ovary is 1—3-celled; the stigmas are three, and thickish; and the fruit is a dry ovate drupe, the nut of which is rather bony, and usually 1-celled, though sometimes it shows two abortive cells at the side; the cell contains a single seed, which is affixed to the bottom. The cotyledons of the seed are thick, fleshy, and oily, and bent back upon the radicle. The species are trees, with pinnate leaves. (*Dec. Prod.*, ii. p. 64.)

‡ 1. *P. VE'RA* *Lin.* The true Pistachia Nut Tree.

*Identification.* *Lin. Spec.*, 1454. ; Dec. Prod., 2. p. 64. ; Don's Mill., 2. p. 65.

*Synonymes.* *Pistacia officinàrum Hort. Kew.*; Pistachier, *Fr.*; Pistacie, *Ger.* Pistacchio, *Ital.*

*Engravings.* Blackw. Icon., t. 461. ; N. Du Ham., 4. t. 17., and our fig. 221.

*Spec. Char., &c.* Leaves deciduous, impari-pinnate, of 3—5 leaflets, rarely of 1; the leaflets ovate, a little tapered at the base, indistinctly mucronate at the tip. (*Dec. Prod.*, ii. p. 64.) A tree, a native of Syria, growing to the height of 20 ft. Introduced in 1770.

*Varieties.* The following are considered by some authors as species:—

‡ *P. v. 2 trifolia* *Lin. Spec.*, 1454., *Bocc. Mus.*, ii. t. 93., has leaves usually of 3 leaflets.

‡ *P. v. 3 narbonensis* *Bocc. Mus.*, t. ii. 693. ; *P. reticulata Willd.* and *Don's Müller*; has pinnate leaves, the leaflets having prominent veins. A plant of this variety, as a bush, in the open garden of the Horticultural Society, was, in 1834, 5 ft. high, after having been 6 years planted. According to the *Nouveau Du Hamel*, these sorts differ only in the size, shape, and consistency of the leaflets, and are by no means entitled to be considered as species.

*Description, &c.* The trunk of this tree is clothed with grey bark. The branches are spreading, but not very numerous; and they are furnished with winged alternate leaves, on long petioles. The fruit is oval, about the size of an olive: it is reddish and furrowed, and it contains a kernel, oily and mild to the taste. It is a native of Syria, Barbary, Persia, and Arabia. It was brought from Syria to Italy by the Emperor Vitellius, whence it found its way to the south of France, where it is so far naturalised as to appear, in some places, like a native. (See 134.) It is cultivated in the south of France, and in Italy, for its fruit, which is sometimes eaten raw, but more frequently in a dried state, like almonds. They are most generally used on the Continent as sugar-plums, being covered with sugar, or with chocolate, under the name of diabolins: creams and ices are also composed of them, coloured green with the juice of spinach. Generally, the fruit is said to be a fortifier of the stomach, and to diminish coughs and colds. There is a nut imported from the West Indies, under the name of pistachia nut, which is the produce of quite a different plant, probably a palm. In British gardens, the tree is not much planted, from its being generally supposed to require a wall; but, in favourable situations, it will grow as a standard or a bush; as is proved by a plant in the garden of the London Horticultural Society, which has stood there for 5 or 6 years without any protection. It will grow in any common garden soil, and may be propagated, either by nuts procured from abroad, or even from the Italian warehouses in England, or by cuttings. Miller says, if planted against high walls, with a warm aspect, or as standards in a sheltered situation, they will bear the cold of our ordinary winters very well; but, in severe frosts, they are often destroyed. The tree, he says, flowers, and produces fruit freely in England; but the summers are not warm enough to ripen the nuts. He mentions a tree, in the Bishop of London's garden at Fulham, upwards of 40 years old, planted against a wall; and another, which had been planted as a standard, in the Duke of Richmond's grounds, at Goodwood, in Sussex, where it had stood many years without the slightest protection. Till lately, there was a very fine specimen at Syon. The foliage of the tree is so ornamental, that no conservative wall ought to be without one.



‡ 2. *P. TEREBINTHUS* Lin. The Turpentine Pistachia, or Venetian, or Chian, Turpentine Tree.

*Identification.* Lin. Spec., 1455.; Dec. Prod., 2. p. 64.; Don's Mill., 2. p. 65.

*Synonymes.* *T. vulgaris* Tourn. Inst., 579.; *P. vera* Mill. Dict., No. 4.; Pistachier Térébinthe, Fr.;

Terpentin Pistacie, Ger.; Terebinto, Ital.

*Engravings.* Woody. Med. Bot., 415. t. 153.; Blackw., t. 478.; Duh. Arb., ed. 1. vol. 2. t. 87.

*Spec. Char., &c.* Leaves deciduous, impari-pinnate, of about 7 leaflets, that are ovate-lanceolate, rounded at the base, and at the tip acute and mucronate. (Dec. Prod., ii. p. 64.) A tree, growing to the height of 30 ft. in the south of Europe and north of Africa. Introduced in 1656.

*Variety.*

‡ P. T. 2 *sphaerocarpa* Dec. Prod., ii. p. 64. The round-fruited Turpentine Pistachia Tree.—Its fruit is larger and rounder than that of the species. (J. Bauh. Hist., i. p. 278. ic.) It is said to be a native of the East. Requin has seen a cultivated plant of this variety in a garden at Nismes. (Dec. Prod., ii. p. 64.)

*Description, &c.* The general appearance of the tree is that of *P. vera*, but the leaves are larger, and the fruit only a third of the size; the leaflets are, also, lanceolate, instead of being subovate. The fruit is round, not succulent,

and somewhat furrowed; at first green, and afterwards reddish; but black, or of a very dark blue, when ripe. The leaves and flowers emit a very resinous odour, which spreads to a considerable distance, more especially at sunset, when the dew is falling, after a very warm day. Gerard, in describing this tree, says that its kernel is "clammie, full of fat, and oilous in substance, and of a pleasant savour. This plant beareth an empty cod, or crooked horne, somewhat reddish, wherein are found small flies, wormes, or gnats, bred and ingendered of a certaine humorous matter, which cleaveth to the inner sides of the said cods or hornes; which wormes have no physicall use at all." (*Johnson's Gerard*, p. 1434.) Exceedingly good figures of the male and female trees are given by Gerard, in which the pods, or horns, produced by the insect (a species of *Cynips*) when depositing its eggs, are exhibited as about the same length as the leaves. Oliver states that these excrescences contain a small portion of very limpid and odoriferous resin. The turpentine is procured from the *P. Terebinthus*, by making numerous slight incisions in the trunk and principal branches, from the ground as high up the trunk as a man can reach, from the 15th to the 20th of July, according to the Greek calendar. The terebinth oozes out of the wounds made in the bark, and, in a few days, becomes hard and dry by exposure to the air; as in the case of the resins produced by the pine tribe, and with resins generally. The colour is a bluish or greenish white. It is collected every morning from the wounds in the trees with a spatula; and is purified from any extraneous matters that may have stuck to it, by liquefaction by solar heat, and by passing it through a sieve. The largest trees, of 50 or 60 years' growth, with trunks 4 ft. or 5 ft. in circumference, do not yield above 10 oz. or 12 oz. annually: hence the high price of the article, and its adulteration with Venice turpentine, which is produced from the larch; or with common turpentine, which is drawn from the Scotch pine. The terebinth which is pure is called the Chian, or Cyprus turpentine (from Chios, the ancient name of Scio); and, when undiluted, it is known from the common turpentine by being thicker, and possessing a far more agreeable odour; it is also destitute of bitterness and acidity.

In consequence of the small quantity of terebinth produced by the trees in Scio, a correspondent of Du Hamel's suggests the idea of grafting the *P. vera*, or edible-fruit-bearing species, on the upper parts of trees of *P. Terebinthus*, in order to render them more profitable. He states that he has seen this done in a garden at Naples, and that the fruit was much larger and better than it was on those trees which had not been grafted; while the stocks produced as much resin as the ungrafted plants of the same species. In British gardens, the tree is not very common: the largest specimen that we know of it is a female plant, in the north-east corner of the Chelsea Botanic Garden, 22 ft. high, that flowers every year, and produces fruit, which, though not fecundated, attains the size of small peas. This species is generally considered as the hardiest of the genus, and, with *P. vera*, may be planted in warm sheltered situations in the open border.

### † 3. *P. LENTISCUS* Lin. The Mastich Tree.

*Identification.* Lin. Spec., 1455; Dec. Prod., 2 p. 65; Don's Mill., 2 p. 66.  
*Engravings.* Woodv. Med. Bot., t. 152; Black, t. 195; Duh. Arb., ed. nov., 4 t. 18; and our fig. 222.

*Spec. Char., &c.* Evergreen. Leaves abruptly pinnate; the leaflets 8, lanceolate; the petiole winged. (*Dec. Prod.*, ii. p. 65.) A native of Southern Europe, Northern Africa, and the Levant.

#### *Varieties.*

† *P. L. 2 angustifolia* Dec., *P. massiliensis* Mill. *Dict.*, *P. angustifolia massiliensis* Tourn., has leaflets almost linear, and the tree seldom exceeds 10 ft. in height.

† *P. L. 3 chia* N. Du Ham., iv. p. 72., *P. chia* Desf. *Cat. Hort. Par.*, a native of Scio, where it produces the mastich.

*Description, &c.* The species bears a general resemblance to the two preceding ones, in summer, when they are clothed with foliage; but it differs from them in being evergreen, and in having the leaves much smaller. Fabricius has observed that the male plant sometimes produces hermaphrodite flowers, with three stamens and five styles. Gouan has remarked that the buds in this species are different from what they are in the other sorts; the branch-bearing buds being terminal, and the flower buds axillary. The leaves have sometimes 5 leaflets on each side; and the petioles are so much winged as to appear like pinnæ. The tree is a native of the south of Europe, and the north of Africa. It grows to the height of 20 ft., and is cultivated in gardens, as well as being found in a wild state. Desfontaines, who travelled in Barbary, states that the tree in that country, though punctured as it is in the Island of Scio, yet does not yield mastich; but that the wood gives out an aromatic smell when burned, and the berries yield an oil fit both for the lamp and for the table. The great source of the mastich of commerce is the Island of Scio, where it is obtained from the trees in the same manner as the Chian turpentine. The quantity produced there averages, according to Olivier, 125,000 lb. annually; but, according to Macculloch, the annual produce is 1500 cwt. The tree was introduced into British gardens in 1654; but it is not very common there. It is not so hardy as *P. Terebîthus*, and should always be planted against a wall.



‡ 4. *P. ATLANTICA* Desf. The Mount Atlas Mastich, or Turpentine Tree.

*Identification.* Desf. Atl., 2 p. 364; Dec. Prod., 2 p. 64; Don's Mill., 2 p. 66.

*Spec. Char., &c.* Leaves deciduous, impari-pinnate. The leaflets about 9, lanceolate, a little tapered at the base. The petiole between the terminal pairs of leaflets somewhat winged. (Dec. Prod., ii. p. 64.) A native of sandy places in Barbary and about Constantinople.

*Variety.* ‡ *P. a. 2 latifolia* Dec. Prod., 2 p. 64, has leaflets rounded, broader at the base than those of the species. It was found in the Isle of Scio by Olivier.

*Description, &c.* The species is a deciduous tree, with a large roundish head, growing to the height of 40 ft. in Barbary, near Coffa, not far from Mount Atlas; where, from being found in rows, it appears to have been in a state of cultivation. The variety with broad leaves is found in the Island of Scio, and also about Constantinople. The drupe of this tree is about the same size as that of the *Pistacia Terebîthus*; but the tree seems to be rather more prolific of resin. Desfontaines, who discovered this species, and first described it, says that the resin oozes from the trunk and branches at different seasons of the year, but especially in summer; and that, in property, in smell, and in taste, it is scarcely to be distinguished from Oriental mastich. The Arabs collect it in autumn and winter, and chew it to improve their breath, and give brightness to their teeth; and the Moors eat the fruits, and bruise them to mix with their dates. This tree is rarely to be met with in British gardens.

## GENUS II.



*RHUS* L. THE RHUS, or SUMACH. *Lin. Syst.* Pentándria Trigýnia and Diœ'cia Pentándria.

*Identification.* *Lin. Gen.*, 369; *Lam Ill.*, t. 207; *Kunth Gen. Tereb.*, p. 5; *Dec. Prod.*, 2 p. 66. Don's Mill., 2 p. 61. and p. 69.

*Derivation.* From *rhoos*, or *rhous*, Greek, which is derived from *rhudd*, a synonyme of *rud*, Celtic, red; in allusion to the colour of the fruit and leaves of some of the species in autumn. (Don's Mill., ii. p. 69.) Donnegan has given the following explanation of the word *rhous*:—"A species of

small tree, the rind of which was used for tanning, and the fruit as a spice (*Theophrast. H. Pl.*, 3. 18.); supposed to be some variety of the *Rhus Côtinus*." And others derive *Rhus* from the Greek verb *rheô*, I run, from the habit of the roots running and spreading under ground to a considerable distance from the tree. Sumach is derived from *Simaq*, the Arabic name of the plant.

*Gen. Char.* Sexes hermaphrodite, dioecious, or polygamous. *Calyx* small, 5-parted, persistent. *Petals* ovate, and inserted into a calycine disk, or into the calyx. *Stamens* 5, inserted into a calycine disk; all of them in the flowers of the male and hermaphrodite sexes bearing anthers. *Ovary* single, perhaps from defect, subglobular, of 1 cell. *Styles* 3, short, or not any. *Stigmas* 3. Fruit an almost dry drupe of 1 cell, with a bony nut, which includes a single seed; and, in some instances, 2—3 seeds: when one, perhaps, by defect. Each seed is pendulous by a thread (the raphe), that arises from the bottom of the cell. *Cotyledons* leafy, their edges, on one side, and the radicle, in contact. (*Dec. Prod.*, ii. p. 66., and *Wats. Dend.*) —Deciduous shrubs, generally with alternate compound leaves; natives of Europe, Asia, and North and South America. The leaves vary much, both in form and magnitude; and they generally die off, in autumn, of a dark red, or a bright scarlet, or yellow; on which account, at that season, they are very ornamental. Most of the species are poisonous, some of them highly so; and they all may be used in tanning, and dyeing yellow or black. They are all easily propagated by cuttings of the root, and some of them by cuttings of the branches.

§ i. *Côtinus* Tourn.

*Sect. Char.* Leaves undivided. Flowers hermaphrodite.

1. *R. CÔTINUS* L. The *Cotinus* *Rhus*, or *Venetian Sumach*.

*Identification.* *Lin. Spec.*, 383; *Dec. Prod.*, 2 p. 67.; *Don's Mill.*, 2 p. 69.

*Synonymes.* *Côtinus Coggŷgria Scop. Carn.*, ed. 2. No. 368.; *Mench Meth.*, 73.; *Côtinus coriacea*

*Duh. Arb.*, 1. t. 78.; *Venus Sumach*, *Venus Sumach*, wild Olive; *Sumach Fustet*, or *Arbre aux*

*Péruques*, *Fr.*; *Perücken Sumach*, *Ger.*; *Scotino*, *Ital.*

*Derivation.* The term *Côtinus* is derived from *cotinos*, a name under which *Pliny* speaks of a tree

with red wood, which is supposed to grow in the *Apennines*. (*Don's Mill.*, 2 p. 69.)

*Engravings.* *Jacq. Aust.*, t. 210.; *Mill. Icon.*, t. 270.; *Lob. Icon.*, t. 99.; *Duh. Arb.*, t. 178.; and our

*fig.* 223.

*Spec. Char., &c.* Leaves obovate. (*Dec. Prod.*, ii. p. 67.) A native of sunny places in the south of Europe and Asia, from Spain to Caucasus. The flowers are disposed in loose panicles, and have the sexes hermaphrodite. The drupe is half-heart-shaped, smooth, and veiny; its nut is triangular. Many of the flowers are abortive, and their pedicels, after the flowering, lengthen, and become hairy. (*Ibid.*)

*Description, &c.* The *Rhus Côtinus*, though seldom found higher than 5 ft. or 6 ft. in a wild state, yet grows to double that height in gardens, where it forms a highly ornamental shrub, more especially when covered with its large loose panicles of elongated hairy pedicels, very few of which produce fruit. It is easily known from all the other species by its simple, obovate, smooth, stiff, lucid, green leaves, rounded at the points, and supported by long footstalks, which remain on till they are killed by frost, so that the plant is almost a sub-evergreen. The flowers are produced at the ends of the branches, and are of a pale purplish or flesh colour. Each flower is composed of 5 small oval petals, which spread open, but are seldom succeeded by seeds in England. In Greece, and in the south of Russia, the whole plant is used for tanning, and for dyeing leather, wool, and silk yellow. In Italy, about Venice, it is used for dyeing black, and is called by the Italians *scotino*, from *skotios*, dark. Sir James Edward Smith found it cultivated under this name for tanning, on a little hill at the back of the inn at Valcimaca, between Rome and Bologna. (*Corresp.*, i. p. 325.) The plant appears to have been known to



Pliny, who mentions it as an Apenmine shrub, under the name of *Coggýgia*. In England, it was cultivated by Tradescant, and it is described by Gerard as an excellent and most beautiful plant, "with the leaves of the cappariss, and the savour of the pistachia." As an ornamental shrub, it deserves a place in every garden where there is room to allow it to extend itself on every side. A dry loam suits it best; and it is propagated by pegging down the branches flat to the ground, and strewing earth over them, through which young shoots rise up, which root at the base, and may be removed in autumn. There are old plants of it at Syon; and a very fine one at Deepdene, the diameter of the head of which is nearly 20 ft.: but the largest in England is at Enville, in Staffordshire, where it has attained more than double that size. Plants, in the London nurseries, are 50s. a hundred, or 6d. each; at Bollwyller, plants are 1 franc each.

### § ii. Sumach Dec.

*Sect. Char.* Leaves impari-pinnate; leaflets more than 3 in the leaves of each of the first 6 species of this section. Flowers in panicles, polygamous, diceious, or hermaphrodite.

‡ 2. *R. TYPHINA* L. The Fever Rhus, or Stag's Horn Sumach.

*Identification.* Lin. Spec., 380.; Dec. Prod., 2. p. 67.; Don's Mill., 2. p. 70.

*Synonymes.* *R. virginiana* Bauh. Pin., p. 517.; Virginian Sumach.

*Engravings.* Duh. Arb. Ed. Nov., 2. t. 47.; Wats. Dend. Brit., t. 17 and t. 18.; and our fig. 224.

*Spec. Char., &c.* Leaf of 8—10 pairs of leaflets, and the odd one, that are lanceolate, acuminate, serrated, hairy beneath. Petiole and branches hairy. (*Dec. Prod.*, ii. p. 67.) A native of North America. Fruit hairy, purple. De Candolle has characterised two forms of this species as follows:—

‡ *R. t. 1 arborescens.*—Its form that of a tree; its height between 10 ft. and 25 ft. high; leaf slightly downy beneath. (*Willd. Enum.*, 323.)

‡ *R. t. 2 frutescens.*—Its form shrubby; its height between 2 ft. and 10 ft.; and its leaf downy and whitish beneath.

*Description, &c.* *Rhus typhina*, in British gardens, is either a large shrub or a low tree, with a woody stem, and a head composed of many irregular branches, generally crooked and deformed. The young shoots are covered with a soft velvet-like down, resembling that of a young stag's horn, both in colour and texture; whence, and probably also from the crookedness of the branches, the common name. The leaves

are large, and very conspicuous in autumn, before they drop off, when they change to a purplish or yellowish red. The flowers are produced in close spikes at the ends of the branches; and the female ones are followed by seeds enclosed in woolly, simple, succulent covers, which are very conspicuous in autumn. The plant is found in a wild state in almost every part of North America; particularly in Carolina and Virginia. It was cultivated by Parkinson in 1629, and is now common in British gardens. There are large specimens of it at Syon, where it has attained the height of 15 ft. as a tree; and in the arboretum of Messrs. Loddiges, and in the garden of the London Horticultural Society; in each of which places it has attained the height of 10 ft. or 12 ft. In some parts of North America, the wood is used for tanning leather, and the roots prescribed as a febrifugal medicine. In British gardens it well deserves a place, from its large and beautiful foliage, and its striking colour in autumn; its spikes of dark red fruit; and the singularity of its branches in winter. As the plant is of open irregular growth, and not



of long duration, it should never be placed where it is intended to act as a screen. Like all objects the chief beauty of which consists in their singularity, it produces the most striking effect when standing alone on a lawn. If trained to a single stem, either of the forms of this species may be made an interesting small tree, but not one of many years' durability. Price, in the London nurseries, 1s. a plant, and seeds 1s. an ounce; at Bollwyller, 50 cents a plant; and in New York, 25 cents a plant, and seeds 1 dollar a quart.

‡ 3. *R.* (? T.) VIRIDIFLORA Poir. The green-flowered Rhus, or Sumach.

Identifications. Poir. Dict., 7. p. 504.; Dec. Prod., 2. p. 67.; Don's Mill., 2. p. 70.

Synonymy. *R. canadense* Mill. Dict., No. 5.

Spec. Char., &c. Leaf of 8—10 pairs of leaflets, and the odd one, that are lanceolate-oblong, serrate, pubescent beneath. Petiole and branches rather hairy. (Dec. Prod., ii. p. 66.) A tree, a native of North America. Flowers green, in upright racemes. Probably a variety of *R. glabra*. (Ibid.) The plant of *R. viridiflora* in the garden of the London Horticultural Society was, in 1834, 10 ft. high, after having been 10 years planted.

‡ 4. *R.* (? T.) GLABRA Lin. The glabrous Rhus, or Scarlet Sumach.

Identifications. Lin. Spec., 380.; Dec. Prod., 2. p. 67.; Don's Mill., 2. p. 70.

Engravings. Wats. Dend. Brit., t. 15.; and our fig. 225.

Spec. Char., &c. Leaf glabrous, of 8—10 pairs of leaflets, and an odd one; leaflets lanceolate-oblong, serrate, whitish beneath. Branches glabrous. (Dec. Prod., ii. p. 67.) A native of North America. Fruit covered with silky hairs, red. De Candolle has distinguished three forms of this species; namely:—

‡ *R. g.* 1 *hermaphrodita*, with hermaphrodite sexes, and greenish flowers; the *R. glabra* Willd. Spec., i. p. 1478., and figured in *Dill. Elth.*, t. 243.

‡ *R. g.* 2 *diœica*, with diœicious sexes, and greenish flowers, figured in *Lam. Ill.*, t. 207. f. 1.

‡ *R. g.* ? 3 *coccinea*, the *R. carolinianum* of *Mill. Dict.*, and the *R. elegans* of Ait., Loddiges's Catalogue, and of nurseries generally, figured in *Dend. Brit.*, t. 16., has diœicious sexes, and red flowers. It is distinguished by a more upright habit of growth, and smoother branches and leaves, than *R. glabra*. The leaves are glaucous underneath; and the fruit is of a rich velvety crimson.

Description, &c. The general appearance of the species is similar to that of *R. typhina*; but the plant is smaller, the branches more spreading and smooth, and the leaflets wider, less serrate, and of a deeper green. There are many varieties of *R. typhina* in North America; and, to us, it appears highly probable that *R. glabra* is only one of these. According to Kalm, the species or variety under notice is exceedingly common in woods throughout great part of North America, both in cultivated and uncultivated districts. In woods, it is found on the margins of open glades; and, in cultivated parts of the country, it less common in low meadows than in corn fields. "It is like a weed in some parts of the country; and, if a field be left a few years uncultivated, this shrub overruns it, from berries which are brought by birds; and, when the ground comes again into tillage, the roots stop the plough very much. The fruit remains on the shrub during winter; but the leaves drop very early in autumn. It seldom grows above 9 ft. high. The wood burns well, without much crackling. On cutting the stem, a yellow juice comes out between the bark and the wood; one or two of the outer circles of the wood are white, but the innermost are of a yellowish green; it contains a pith frequently half an inch in diameter, or more, of a brown colour, and so loose, that it is easily pushed out by a stick. The branches, boiled with the



berries, afford a black ink-like tincture. The berries are eaten by children with impunity, but they are very sour: they are red, and are made use of for dyeing that same colour." (*Martyn's Miller.*) Professor Rogers, in *Silliman's Journal*, vol. xxvii. p. 294., observes that the berries contain a large portion of the malic acid, and are used as a substitute for lemons in various preparations of domestic economy and medicine: the leaves are used in tanning. In British gardens, this sort has been cultivated since 1726. A plant in the garden of the London Horticultural Society was, in 1834, 6 ft. high, after being 10 years planted. The history and culture are the same as those of *R. typhina*.

§ 5. *R. PU'NILA Michx.* The dwarf Rhus, or *Sumach*.

*Identification.* Michx. Fl. Bor. Amer., 1. p. 182.; Pursh Bor. Amer., 1. p. 204.; Dec. Prod., 2. p. 67.; Don's Mill., 2. p. 70.

*Spec. Char., &c.* Dwarf, downy in every part. Leaf of many pairs of leaflets, and the odd one; the leaflets are oval, cut in a toothed manner, and tomentose beneath. Fruit silky. (*Dec. Prod.* 2. p. 68.) A native of Upper Carolina, whence it was introduced in 1806. It grows to the height of 1 ft., and flowers in July. Mr. John Lyon, who discovered this species, when collecting the seed, "got poisoned all over his body, and was lamed for a considerable time." (*Ph.*) The species is not in the garden of the London Horticultural Society, or in the arboretum of Messrs. Loddiges.

‡ 6. *R. VERNICI'FERA Dec.* The varnish-yielding Rhus, or *Sumach*.

*Identification.* Dec. Prod., 2. p. 68.; Don's Mill., 2. p. 70.

*Synonymes.* Sitz, or Urus, *Japanese*, according to *Kempfer Am.*, 791. t. 792.; *R. vernix Lin. Mat. Med.*, 151., and *Thun. Jap.*, 121., not of other authors; *R. juglandifolium Wall.* in *Litt. Don. Prod. Fl. Nep.*, not of Willd. *Engraving.* *Kempf. Amœn.*, t. 792.

*Spec. Char., &c.* Leaf of 5—6 pairs of leaflets, and the odd one; all ovate, acuminate, entire, rather glabrous above, beneath bearing velvety pubescence. Petiole and branches softly woolly. (*Dec. Prod.*, ii. p. 68.) A tree, a native of Japan and Nepal. The general appearance of this species is that of *R. typhina*; but the leaves are much larger, and more like those of some species of *Juglans* or *Carya*. The plant also seems to be of more robust growth; a specimen in the garden of the London Horticultural Society having, in 6 years, attained the height of 11 ft. Though marked, in some works, as a green-house shrub, it appears to be as hardy as the common species; and it is especially worth culture on account of its magnificent leaves. Thunberg affirms that the very best Japan varnish is made from this species, which is the *Rhus vernix* of *Lin. Mat. Med.*, though not of *Lin. Sp. Plan.*; it grows in abundance in many parts of that country; and is cultivated in several places, on account of the advantage derived from it. The varnish, which oozes out of the tree on its being wounded, is procured from stems that are three years old, and is received into some proper vessel. When first collected, it is of a whitish colour, and of the consistence of cream; but grows thicker and black on being exposed to the air. It is so transparent, that, when laid, pure and unmixed, upon boxes or furniture, every vein of the wood may be clearly seen through it. For the most part, a dark ground is spread underneath it, which causes it to reflect like a mirror; and for this purpose recourse is frequently had to the fine sludge which is collected in the trough under a grindstone; or to ground charcoal; occasionally, a red substance is mixed with the varnish, and sometimes leaf gold ground very fine. This varnish hardens very much, but will not endure any blows, cracking and flying almost like glass; though, at the same time, it can stand boiling water without receiving any damage. With this the Japanese varnish over the posts of their doors and windows, their drawers, chests, boxes, scimitars, fans, tea-cups, soup-dishes, their portable stools, and most articles of household furniture which are made of wood. (*Mart. Mill.*)

§ 7. *R. VENENATA Dec.* The poisonous Rhus, *Poison Wood*, or *Swamp Sumach*.

*Identification.* Dec. Prod., 2. p. 68.; Don's Mill., 2. p. 71.; Hook. Fl. Bor. Amer., 1. p. 126.

*Synonymes.* *R. vernix Lin. Spec.*, 380., *Big. Med. Bot.*, 1. p. 96. t. 10.; *Toxicodendron pinatum Mill. Dict.*, No. 5.; *Poison Sumach*, *Poison Elder*.

*Engravings.* Dill. Elth., t. 292.; Wats. Dend. Brit., t. 19.; Big. Med. Bot., I. t. 19.; and our fig. 226.

*Spec. Char., &c.* Leaf rather glabrous than pubescent, of 5—6 pairs of leaflets, and the odd one, which are ovate-lanceolate, acuminate, entire, and beneath reticulately veined. (*Dec. Prod.*, ii. p. 68.) A native of North America, from Canada to Carolina, and commonly called there poison sumach, or poison wood. The drupe is white, and the nut furrowed. (*Ibid.*)

*Description, &c.* In its native country, this species is a shrub or low tree, growing to the height of 20 ft.; but it does not grow so vigorously in British gardens, probably from not being sufficiently attended to in regard to soil, which ought to be kept very moist, as the name swamp sumach implies. The leaves are divided like those of *R. typhina* and *R. glabra*; but they are quite different from those of both kinds in being smooth, shining, and having the leaflets very entire, narrow, and pointed, and the veins of a purplish red colour. There is a plant in the garden of the London Horticultural Society, which, in 1834, was 4 ft. high, after being 5 years planted. There are also plants of the same species in the arboretum of Messrs. Loddiges. The leaves die off of an intense red or purple; and are, in the autumn season, strikingly beautiful. This species is a native of swamps in Virginia, Carolina, Pennsylvania, and New England; and it is also said to be a native of Japan.

The milky juice stains linen a dark brown. The whole shrub is in a high degree poisonous; and the poison is communicated by touching or smelling any part of it. In forty-eight hours, inflammation appears on the skin, in large blotches, principally on the extremities, and on the glandulous parts of the body: soon after, small pustules rise in the inflamed parts, and fill with watery matter, attended with burning and itching. In two or three days, the eruptions suppurate; after which the inflammation subsides. Some persons are incapable of being poisoned with this plant; but those who are of unstable habits are more likely to receive it. According to Kalm, an incision being made, a whitish yellow juice, which has a nauseous smell, comes out between the bark and the wood: it is noxious to some persons, but does not in the least affect others. On Kalm himself it had no effect, except once, on a hot day, when, being in some perspiration, he cut a branch, and carried it in his hand for half an hour, smelling it now and then. It produced a violent itching in his eyelids and the parts thereabouts. During a week, his eyes were very red, and the eyelids very stiff, but the disorder went off by washing the parts in very cold water. (*Mart. Mill.*) In British gardens, this species is not very common; but it well deserves culture, on account of the beauty of its smooth shining foliage at all seasons, and of its almost unparalleled splendour in the autumn, from the time that the leaves begin to change colour, till they ultimately drop off with the first frost. We would recommend that the plant should always have a label attached to it, indicating the poisonous qualities of the leaves, even when touched or smelled to. Plants, in the London nurseries, are 1s. 6d. each, seeds 2s. an ounce; at Bollwyller, 1 franc and 50 cents a plant; and at New York, 50 cents a plant.



8. *R. CORIARIA* Lin. The hide-tanning Rhus, or the Elm-leaved Sumach.

*Identification.* Lin. Spec., 379.; Dec. Prod., 2. p. 67.; Don's Mill., 2. p. 70.

*Derivation.* The specific name of Coriaria was given to this plant from the use made of it by the Turks in tanning leather; and it was also a name of the *Rhus* among the Romans, from the same quality.

Engravings. N. Du Ham., 2. t. 46.; Wats. Dend. Brit., t. 136.; Blackw., t. 486.; Plenck. Icon., t. 232.; and our figs. 227. and 228.



227

*Spec. Char., &c.* Leaf villose, of 5—7 pairs of leaflets, and the odd one; leaflets elliptical, and toothed with large and blunt teeth. The petiole smooth at the tip, a little margined. (*Dec. Prod.*, ii. p. 67.) A native of sunny rocky spots in the south of Europe, from Portugal to Tauria. Fruit villose. (*Ibid.*)



228

*Description, &c.* The general habit of this plant resembles that of *R.*

*typhina*; but it is much smaller in all its parts. The leaflets are about 2 in. long, and  $\frac{1}{2}$  in. wide, of a pale green, serrated, and in general appearance resembling the leaves of the common elm. The flowers are in large loose panicles, of a whitish green; and they appear in July, but are seldom followed by seeds in England. The seeds are used at Aleppo, ground into powder, as a provocative to appetite, as mustard is in Britain. The plant is a native of the south of Europe and the north of Africa, and it appears to have been introduced into England in 1640. In British gardens, this species is not uncommon. Plants, in London, cost 1s. 6d. each; at Bollwyller, 1 franc.

9. *R. COPALLINA* Lin. The Gum Copal Rhus, or Mastich-tree-leaved Sumach.

*Identification.* Lin. Spec., 380.; Dec. Prod., 5. p. 68.; Don's Mill., 2. p. 72.  
*Engravings.* Jacq. Hort. Schön., t. 341.; Pluk. Alm., p. 56. f. 1.; and our fig. 229.

*Spec. Char., &c.* Leaf glabrous above, a little pilose beneath, of 5—7 pairs of leaflets, and the odd one; leaflets lanceolate and entire. Petiole winged and jointed. Root stoloniferous. Flowers yellow green. Sexes diœcious. (*Dec. Prod.*, ii. p. 68.)

*Variety.*

*R. c.* 2 *leucantha* Jac. Hort. Schön., t. 342. — Root not stoloniferous. Flowers whitish. Panicles more contracted than in the species.

*Description, &c.* The leaves and general habit of the plant are those of *R. typhina*, but it seldom grows to the height of more than 4 ft. or 5 ft. The branches are smooth, and the leaflets entire with acute points; they are light green on both sides, and in autumn change to a fine purple. The petiole, as in *R. Coriaria*, is somewhat winged towards its tip, which, with other circumstances, induces us to think that they may both be varieties of the same species. *R. copallina* is found in dry fields and woods, particularly in sandy soil, from New Jersey to Carolina. The leaves are used as tobacco by the Indians of the Missouri and the Mississippi. The species was intro-



229 +

duced into England in 1697, and is occasionally to be met with in collections. There are good plants of both the species and the variety in the arboretum of Messrs. Loddiges. Plants of the species, in London, are 1s. 6d. each, and seeds 1s. an ounce; at New York, 37½ cents a plant.

\* *R. 10. R. RADICANS L.* The rooting-branched Rhus, or Sumach; or Poison Oak.

*Identification.* Lin. Spec., 381.; Dec. Prod., 2. p. 69.; Don's Mill., 2. p. 71.

*Synonymes.* *R. Toxicodendron* var. *α Michx.* *Fl. Bor. Amer.*, 1. p. 185.; and *R. T.* var. *β Torrey*

*Fl. U. S.*, 1. p. 322.

*Engravings.* Big. Med. Bot., t. 42.; and our fig. 230.

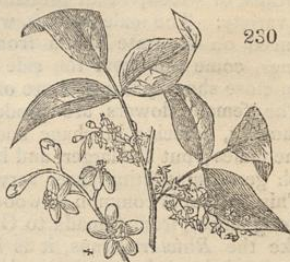
*Spec. Char., &c.* Leaf of one pair of leaflets and an odd one, the odd one upon a petiole; all glabrous and entire. (*Dec. Prod.*, ii. p. 69.) A native of North America. De Candolle has characterised three forms of this species as follows:—

1 *R. r. 1 vulgaris.*—Stem climbing by means of roots emitted from it; leaflets large, ovate. *R. Toxicodendron vulgare Ph. Fl. Amer. Sept.*, i. p. 205.; *Bot. Mag.*, t. 1806.; *Toxicodendron vulgare*, and *T. volubile Mill. Dict.* This often poisons upon mere touching.

2 *R. r. 2 volubilis.*—The stem climbing, scarcely emitting roots; the leaflets large and ovate. *Toxicodendron volubile Mill. Dict.*

3 *R. r. 3 microcarpa.*—Leaflets oblong-oval with a tapered long point; the fruit much smaller than that of the other forms. *R. Toxicodendron microcarpa Ph. Fl. Amer. Sept.*, i. p. 205. There is a figure of this in *Dill. Elth.*, t. 291. fig. 375. A plant of this variety in the garden of the London Horticultural Society was, in 1834, 4 ft. high, after having been 8 years planted.

*Description, &c.* This species, in America, has a low shrubby stem, and forms a bush from 2 ft. to 3 ft. in height, whence shoots proceed near the bottom to the distance of 20 ft. or 30 ft. on each side, rooting at the joints, and completely occupying the surface of the ground. Placed near a wall or a tree, the shoots climb up, and root into the joints of the wall, or into the furrows of the bark of the tree, if the latter should be old. It is a native of many parts of North America, from Canada to Georgia; sometimes covering the surface of the ground to a great extent; and at other times climbing to the top of the highest trees, and penetrating the bark with its fibrous roots. When the stem is cut, it emits a pale brown sap of a disagreeable scent; and staining so powerfully, that letters or marks made upon linen with it cannot be obliterated, but grow blacker the more the linen is washed, not being acted upon by common chemical agents. (*Churchill's Medical Botany*, vol. ii.) In Bigelow's *Medical Botany*, it is stated, that the plant is as common in the woods of America as the ivy is in the woods of Europe; "and the terrible effects of its poison are so frequent, that there seems to be no doubt on the subject. An American young man, who was cutting wood, had his feet, hands, and arms so dreadfully blistered by an unwary approach to this plant, that he could not work for some days." Kalm relates that the plant is poisonous to some persons, but less so to others, and that the same thing takes place with respect to it as with *R. venenata*. (See p. 553.) He mentions the case of two sisters, one of whom could manage a plant of *R. radicans* without being affected by its venom; whilst the other felt its exhalations as soon as she came within a yard of it, or even when she stood to windward of it at a still greater distance. Kalm says that the poison had not the least effect upon himself, though he tried it in various ways, and once squirted the juice into his eye; but that, on another person's hand, which he had covered very thickly with it, the skin, a few hours afterwards, became as hard as a piece of tanned



leather, and peeled off afterwards in scales. (*Travels*, i. p. 177., as quoted in *Martyn's Miller*.) *R. radicans* was introduced into British gardens in 1640, and is common in collections in two distinct varieties. One, a dwarf kind, about a yard or less in height, with several upright stems; and emitting from about the bases of these stems numerous prostrate runners, which extend several, sometimes many, feet from the plant, and root into the earth: the other rising to a much greater height, having fewer stems, and being but little prone to emit prostrate runners, but producing, in the upper part, flexile and rather long branches, that climb when contiguous to objects of support; perhaps rather by emitted fibres than by convolution.

✱ § 11. *R. (R.) TOXICODÉNDRON* *Lin.* The Poison-tree Rhus, or Sumach.

*Identification.* *Lin. Spec.*, 381; *Hook. Fl. Bor. Amer.*, 1. p. 127.; *Dec. Prod.*, 2. p. 69.; *Don's Mill.*, 2. p. 72.  
*Synonymes.* *R. Toxicodéndron quercifolium Michx. Flor. Bor. Amer.*, 1. p. 182., *Pursh Fl. Sept. Amer.*, 1. p. 205.; *Toxicodéndron pubescens Mill. Dict.*, No. 2., *R. T. serratum Mill. Dict.*; the common Poison Oak, Poison Nut, Poison Vine.  
*Engraving.* *N. Du Ham.*, 2. t. 48.; and our *fig.* 251.

*Spec. Char., &c.* Leaf of one pair of leaflets, and an odd one, the odd one upon a petiole; all inciso-angulate, pubescent. (*Dec. Prod.*, ii. p. 69.) A native of North America. Dr. Hooker remarks, that American botanists are at variance with regard to the distinctive characteristics of *R. Toxicodéndron* and *R. radicans*. Nuttall says, that they are certainly different. Pursh, and most other authors, either unite them, or speak with doubt as to the value of their distinctive characters. (*Hook. Bor. Amer.*, i. p. 127.)

*Description, &c.* The general appearance of this shrub closely resembles that of *R. radicans*, of which, in all probability, it is only a variety. The male flowers, which are produced on separate plants from the female ones, come out from the side of the stalks, on close short spikes, and are of a pale green. The female flowers are produced in loose panicles, agreeing in shape and colour with the males; but are larger, and have a roundish germ supporting three very short styles. This species is common in woods, fields, and along fences, from Canada to Georgia, where, like the *Rhus radicans*, it is known by the name of the poison oak, or the poison vine. *R. Toxicodéndron* was introduced into England in 1640, when it was cultivated in the Bishop of London's garden at Fulham; it is now frequent in collections. *R. Toxicodéndron* yields a yellowish milky sap, the properties of which, as an indelible ink, are similar to those of the sap of *R. radicans*. The plant in the garden of the London Horticultural Society, in 1834, formed a bush 5 ft. high, and 5 ft. in diameter, after having been 10 years planted; and it is there readily distinguished from *R. radicans* by its deeply sinuated, or almost pinnatifid, leaflets.



251

### § iii. *Thezèra* *Dec.*

*Sect. Char.* Leaf of 3—5 sessile leaflets, disposed palmately. Flowers in short racemes. Sexes dioecious. Styles 3, distinct, short. Drupe roundish, marked at the tip with 3 tubercles; the nut compressed. (*Dec. Prod.*, ii. p. 72.)

✱ 12. *R. PENTAPHYLLA* *Desf.* The five-leafleted-leaved Rhus, or Sumach.

*Identification.* *Desf. Fl. Atl.*, 1. p. 267. t. 77.; *Dec. Prod.*, 2. p. 72.; *Don's Mill.*, 2. p. 75.  
*Synonymes.* *Rhámnus pentaphyllus Jacq. Obs.*, 2. p. 27.; *R. Thezèra* (from *thezas*, a point, in reference to the prickles), *Pers. Ench.*, 1. p. 325., *Tin. Pug.*, 1. p. 7.  
*Engraving.* *Bocc. Sic.*, t. 21.

*Spec. Char., &c.* Branches bearing spines. Petiole indistinctly winged. Leaflets 3—5, linear-lanceolate at the tip broader, obtuse, entire, or having 3 teeth. (*Dec. Prod.*, ii. p. 72.) A shrub, growing to the height of 10 ft., a native of Sicily and Barbary, and introduced in 1816. The fruit is acidulous and eatable, and the bark dyes red, and is used in tanning leather.

13. *R. ZIZYPHINA* Tineo. The Zizyphus-like Rhus, or Sumach.

*Identification.* Schrank in Flora, 1819, p. 314; Tin. Pug. Sic., 1. p. 8; Dec. Prod., 2. p. 72; Don's Mill., 2. p. 75.

*Synonymes.* *Rhâmnus tripartita Ucria*, and *Zizyphus tripartita Roem. et Schult Syst.*, 5. p. 342, and 6. p. 663.

*Spec. Char., &c.* Branches divaricate, bearing spines. Leaflets 3, glabrous, glossy above, wedge-shaped, toothed more than half their length. Racemes terminal. (*Dec. Prod.*, p. 72.) A shrub, found in the mountainous parts of Sicily, where it grows to the height of 4 ft. Introduced in 1800.

§ iv. *Lobadium* Dec.

*Sect. Char.* Leaf of 3 leaflets, and palmately disposed on the tip of the common petiole, cut in a serrate manner, the teeth large. Flowers in a dense catkin. Sexes polygamous. There are two-lobed glands under the ovary, alternate with the stamens. Styles 3, short, distinct. Drupe rather compressed, villose. Nut smooth. Aromatic shrubs. (*Dec. Prod.*, ii. p. 72.)

14. *R. SUAVEOLENS* Ait. The sweet-scented Rhus, or Sumach.

*Identification.* Ait. Hort. Kew., 1. p. 368; Dec. Prod., 2. p. 72; Don's Mill., 2. p. 75.

*Synonymes.* *Myrica trifoliata Hortul.*, and, perhaps, of *Lin.*; *Toxicodendron crenatum Mill. Dict.*, No. 5.

*Spec. Char., &c.* Leaflets oval, a little angular in the middle, glabrous. (*Dec. Prod.*, ii. p. 72, 73.) A native of Carolina, where it grows to the height of 6 ft., and produces its greenish-yellow flowers in May. It was introduced in 1759, but is not common in collections; is, in all probability, the same as the following sort.

15. *R. (s.) AROMATICA* Ait. The aromatic Rhus, or Sumach.

*Identification.* Ait. Hort. Kew., 1. p. 367; Dec. Prod., 2. p. 73; Don's Mill., 2. p. 75.

*Engraving.* Turp. in An. du Mus. 5. p. 445. t. 30.

*Spec. Char., &c.* Leaflets oval, a little angular in the middle, pubescent in a pilose manner. (*Dec. Prod.*, ii. p. 73.) A native of North America, in Kentucky, and from Pennsylvania to Carolina, where it grows to the height of 6 ft. Introduced in 1772. Nuttall has stated that the drupes are acid and eatable. The flowers are yellow, in dense terminal spikes. The plant in the Horticultural Society's Garden was, in 1834, 4 ft. high, after being 10 years planted.

App. i. *Other Species of Rhus, hardy and half-hardy.*

In Don's *Miller*, ninety-seven species of this genus are described; but, if it were possible to bring them all together, and cultivate them in the same garden, we question much if there would be found more than a fourth part of them entitled to be considered specifically or permanently distinct. We judge of those which we have not seen from those which we have observed for years in British gardens; and, as we feel quite confident that *R. typhina*, *R. viridiflora*, and *R. glabra* are one and the same species, and *R. Toxicodendron* and *R. radicans* are also only one species, so we do not think it likely that the species, or names given as species, under the other sections, are more distinct. It is the business of botanical writers, however, to record all these names with their descriptions; and of cultivators, to endeavour to procure them for their gardens, in order to compare them together; for which last reason we subjoin the following names:—

*R. lobata* Hook. (*Fl. Bor. Amer.*, 1. p. 127. t. 46.) is a very handsome species, or perhaps only a tolerably distinct variety, closely resembling *R. Toxicodendron* var. *quercifolium*, at least, as the plant bearing that name appears in the garden of the London Horticultural Society. Dr. Hooker says, "Although nearly allied as this [*R. lobata*] is to the two preceding species [*R. radicans* and *R. Toxicodendron*], I nevertheless venture to consider it distinct. Its general habit is very different, having erect straight stems, and numerous small leafy branches. The leaflets, besides that they are deeply lobed with acute sinuses, are truly ovate, very obtuse, and greatly smaller than in any state of *R. Toxicodendron* or *R. radicans* which I have seen: the panicles, too, are exceedingly numerous, and large in proportion to the size of the leaf." (*Fl. Bor. Amer.*, i. p. 127.) The shrub was discovered by Douglas, on the outskirts of woods in dry soils in North-west America, particularly at Fort Vancouver. It is not yet introduced, but appears to be a very desirable variety.

*R. acuminata* Dec. (*Don's Mill.*, ii. p. 70.), a native of Nepal, and hardy; not yet introduced.

*R. Amela* D. Don (*Don's Mill.*, ii. p. 72.), the *R. Bucku-Amela* of *Hort. Brit.*, is a Nepal tree, growing to the height of 4 ft., with diœcious flowers, disposed in large terminal spikes. It is marked as having been introduced in 1823, and as requiring the protection of a frame. It seems a most desirable species; but we have not seen it.

*R. bahamensis* G. Don (*Don's Mill.*, ii. p. 72.) is a climbing shrub, a native of the Bahama Islands, not yet introduced, probably only a modification of *R. radicans*.

*R. Oxyacantha* and *R. oxyacanthoides* of *Hort. Brit.*, the *R. Oxyacantha* and *R. dioica* of *Don's Miller*, the first introduced in 1823, and the last in 1825, are considered hardy; but they are rarely to be met with in gardens. (See, also, several species enumerated under *Anacardiaceæ* of the Himalaya, p. 174.)

The frame and green-house species of *Rhus* are numerous, as will be seen by a glance at our *Hort. Brit.*, p. 110. When tried in the open air, many of them will probably be found hardy, and perhaps all of them half-hardy. *R. heterophylla*, generally kept in the green-house, was planted

against a wall in the garden of the London Horticultural Society, in 1832, and is found quite hardy. We anticipate the hardness of most of the other species from their habits; viz. from their being generally deciduous, in the open air, in the neighbourhood of London; producing their shoots rapidly, and so early in the season as to allow time for their ripening before the approach of frost; and from their having no visible buds in the shoots, but numerous germs in the roots: a proof that a great part of the vitality of the plant is under ground, and, consequently, comparatively safe from the influence of the weather.

## GENUS III.

DUVAUA Kth. THE DUVAUA. *Linn. Syst.* Polygámia Monœ'cia.

*Identification.* Kth. Gen. Tereb., p. 8.; Dec. Prod., 2. p. 74.; Don's Mill., 2. p. 76.; Lindley in Bot. Reg., t. 1568. 1573. 1580.

*Synonymes.* Schinus sp. Andr.; Amyris sp. Cav.

*Derivation.* Called Duvaua, "after M. Duvau, a French botanist, known as the editor of the original edition of Richard's *Analyse du Fruit*; and for some observations on *Perónica*." (Lindley, in Bot. Reg., t. 1568.)

*Gen. Char., &c.* *Calyx* persistent, with 4—5 segments. *Corolla* of 4—5 concave petals. *Sexes* monœciously polygamous. *Stamens* 8—10, inserted under a pitcher-shaped calycine disk, which has as many sinuses and as many teeth as there are stamens: these are opposite the sinuses, and half of them opposite the petals, and half of them alternate with them. *Anthers* in the fruit-bearing flowers barren. *Ovary* conical, including one ovule, barren in some flowers. *Styles* 3—4. *Stigmas* capitate. *Fruit* a globose drupe, with a leathery nut, whose seed is pendulous, and has flat cotyledons, and a long radicle.—Chilian trees and shrubs, becoming spiny as they advance in growth; their leaves simple, and their flowers disposed in axillary racemes, many in a raceme. (Dec. Prod., ii. p. 74., and Lindley, in Bot. Reg., t. 1568. 1573. 1580.) There are four species in cultivation, which are all very handsome evergreen bushes, with bright shining foliage; the leaves rather small, oblong, and toothed; with numerous small flowers of a greenish yellow, and small dry berries.

*Properties and Uses.* The foliage emits, when bruised, a strong but not unpleasant odour of the nature of turpentine; and it is probable that this odour pervades all parts of the plants, especially those in which the sap is most abundant. A pretty phenomenon is exhibited by the leaves of *D. ovata*, and, doubtless, by those of every species of *Duvaúa* and of *Schinus*, when thrown upon water, both in a whole state and when broken into pieces. The leaves, or parts of leaves, "after lying a short time, will be found to start and jump as if they were alive, while at the instant of each start a jet of oily matter is discharged into the water. This circumstance appears to be owing to some peculiar irritability of the parenchyma of the leaves, which, when acted upon by water, causes the turpentine sacs, that abound in them, to empty themselves with violence; and the movements of the leaves may be ascribed to the recoil produced by the discharge. Thus we have in every leaf a sort of vegetable battery, which will keep up its fire until the stock of ammunition is expended." (Bot. Reg.) The movements of the leaves upon the water have been compared to a fleet of ships employed in manœuvring, or to persons engaged in dancing. (Gard. Mag., vol. ix. p. 377.) Dr. Gillies states that the Pehuenco Indians prepare by fermentation an intoxicating liquor from the fruit of *D. latifolia*, or a nearly allied species. (Bot. Reg.)

*Propagation and Culture.* Seeds have been produced plentifully in the London Horticultural Society's garden by *D. depéndens*, trained to a south wall; and seeds of *D. latifolia* are often imported from Chile. Plants of this genus may also be multiplied by cuttings of the ripe wood struck in sand, under a bell-glass, in a gentle heat. The species "will not bear the climate of London without protection from frost; but, if trained to a wall, and sheltered by a roof of thatch in winter, they succeed perfectly: in short, they are about as hardy as myrtles." (Bot. Reg.) *D. ovata*, and, it is probable, all the species, "will grow in any soil or situation which is dry in summer, and well drained in winter; and would probably succeed in the crevices of rocks in Devonshire or Cornwall." (Bot. Reg.) *D. depéndens*, *D. ovata*, and *D. latifolia* have flowered in the London Horticultural Society's Garden, the two former in July, and plentifully; the last in June and July, but it seems by the figure in Bot. Reg., much less abundantly than the other

two. The fruit produced by *D. dépendens* consists of small, dry, blackish purple berries. The species appear highly desirable to all who have a conservative wall, if it were only to excite an interest in plants in the minds of children, by exhibiting to them the curious action of the leaves.

† 1. *D. DEPENDENS* Dec. The drooping-branched Duvaua.

*Identification.* Dec. Prod., 2. p. 74.; Don's Mill., 2. p. 75.; Lindley in Bot. Reg., t. 1573.

*Synonymes.* *Amÿris polygama* Cav. Icon., 3. p. 20. t. 239.; *Schinus dépendens* Ort. Decad., 8. p. 102.; *Duvaia dépendens* a Hook. Bot. Misc., 2. p. 176.

*Engravings.* Cav. Ic., t. 239.; Bot. Reg., t. 1573.; and our fig. 232.

*Spec. Char., &c.* Leaves mostly, especially upon the flower-bearing branches, obovate, and very obtuse, or even emarginate, with scarcely any denticulations. Racemes scarcely exceeding the leaves in length. Stamens mostly 10. Flowers smaller than those of *D. ovata*. (Lindley, in Bot. Reg., t. 1573.) A tree, a native of Chili, where it is called *Huinghan*. (Dec. Prod., ii. p. 74.) Introduced in 1790. There is an old plant of it in the Botanic Garden at Kew, against a wall with a west aspect, which has attained a considerable size, with very little protection. There is also a tree in the Chelsea Botanic Garden, which is 12 ft. high, with a trunk 7 in. in circumference, after having been 5 years planted. The plant in the London Horticultural Society's Garden has passed seven winters against a wall with a southern exposure. The winter of 183-6 having been unusually severe, has withered the leaves and the smaller shoots of this and of some other species of *Duvaia* in this garden; but, on examining the trees, April 20. 1836, we find the stronger shoots, and the trunk and branches, uninjured, and buds and leaves rapidly developing themselves.



‡ 2. *D. OVA'TA* Lindl. The ovate-leaved Duvaua.

*Identification.* Lindl. in Bot. Reg., t. 1568.

*Engraving.* Bot. Reg., t. 1568.

*Spec. Char., &c.* Leaves ovate, toothed, in most acute at the tip, in some obtuse. Racemes a little longer than the leaves. Stamens mostly 8. (Lindley, in Bot. Reg., t. 1568.) Nearly related to *D. dépendens*; "but the plants are so different when growing side by side, that we cannot think it right to combine them." (Lindley.) About 6 ft. high. Branches spinescent. Introduced about 1825 or 1826. The plant in the Horticultural Society's Garden was planted in 1831. To us it appears only a variety of the preceding species.

‡ 3. *D. LATIFOLIA* Gill. The broad-leaved Duvaua.

*Identification.* Gillies MSS.; Lindl. in Bot. Reg. t. 1580.

*Synonymes.* *D. dépendens* γ Hook. Bot. Misc.

*Engraving.* Bot. Reg., t. 1580.; and our fig. 233.

*Spec. Char., &c.* Leaves oblong, acute, coarsely toothed, so waved as to seem in some measure plicate. Racemes dense, the length of the leaves. Stamens 8. (Lindley in Bot. Reg., t. 1580.) "Whatever may be thought" of the distinctness, as species, "of *D. ovata* and *D. dépendens*, there can be no doubt that this is a totally distinct species; for not only are the leaves, in their outline, surface, and colour, and the whole plant in its habit, very different, but we find it maintain all its peculiarities unchanged when raised from seeds." (Id.) This species is very common in Chili, and is called there *Huing han*, as well as *D. dépendens*. It was introduced into Britain in 1829, or before. The plant in the Horticultural Society's Garden was placed against the wall where it now stands in 1829. This species, judging from the above-mentioned plant, as examined by us April 20th, 1836, appears to be somewhat more tender than *D. dépendens*; but this may be owing to its larger leaves presenting a greater surface to the action of the weather. We have already more than once remarked, that, when the majority of a species of a genus are hardy, the probability is that those species of that genus which are found to be rather tender may, by cultivation through several generations, or even perhaps by extension, become hardy. The first, Sir Joseph Banks alleges, has been the case with *Zizania aquatica*; and the second, according to Dr. Walker, with *Passiflora cærulea*.



‡ 4. *D. DENTA'TA* Dec. The toothed-leaved Duvaua.

*Identification.* Dec. Prod., 2. p. 74.; Don's Mill., 2. p. 76.

*Synonymes.* *Schinus dentata* Andr. Bot. Rep., t. 620.

*Engraving.* Andr. Bot. Rep., t. 620.

*Spec. Char.*, &c. Leaf lanceolate, toothed, scarcely so long as the raceme. Stamens 10. (*Dec. Prod.*, ii. p. 74.) A shrub, a native of the Island of Owyhee. (*Id.*) Introduced in 1795. The plant in the Horticultural Society's Garden was placed against the wall in 1829. It is probable that plants of this species are extant in many old collections in conservatories.

### App. i. Other Species of *Duvaia*.

There is a plant belonging to this genus in the Horticultural Society's Garden, which was placed against a wall there in 1831, but which has not yet flowered. It seems somewhat different in foliage from the preceding sorts, and may be a variety. The others we consider as nothing more than varieties, unless we except *D. latifolia*.

### App. I. Other Species of *Anacardiaceæ*, half-hardy, or conjectured to be so.

*Sabia parviflora* Wall. and *S. campanulata* Wall. are climbing shrubs, natives of Nepal, and included in our list, p. 174., as likely to prove hardy when once introduced. In Don's *Miller* (ii. p. 69.), they are very properly marked as requiring the green-house; and we should probably not have included them among the half-hardy species, had we not had the aid of Mr. Royle's opinion, as stated in p. 173.

♁ *Schinus Mulli* L. (*Don's Mill.*, ii. p. 76.; *Lam. Ill.*, t. 822.; and our *fig.* 234.) is a deciduous

shrub or low tree, a native of Brazil and Peru, where it grows to the height of 20 ft. The leaves are impari-pinnate, with lanceolate serrated leaflets. The flowers are small, and of a yellowish green; and they are succeeded by berries about as large as a pea, of a singularly beautiful rose colour, and highly polished. This species was introduced in 1597, and, till lately, was kept in green-houses; but a plant in the garden of the London Horticultural Society has stood out several years in the open border, without any protection whatever.



It well deserves a place against a conservative wall, not only on account of the beauty of its foliage and of its berries, but from the interest attached to it, from the usefulness of its products in its native country, were it is called the Peruvian mastich tree. The Peruvians are reported to make a vinous liquor and a sort of vinegar from its berries; and, from the resinous gum which exudes from its stem, they prepare mastich. The fresh leaves exhibit the same phenomenon, when immersed in water, as those of *Duvaia* (see p. 558.), and, probably, other terebinthinate genera. The leaves, the bark, and other parts of the plant, when bruised, emit a terebinthinate odour. There are two plants in the garden of the London Horticultural Society, one of which, in 1834, was 3 ft. high, after having been 2 years planted; and the second, which differs in its foliage from the other, was 3 ft. high, after having been planted 3 years. The common name in gardens is *S. Molle*; but the proper specific name is *Mulli*, which is the Peruvian name of the tree.

*S. M.* 2 *Areira Lin. Spec.*, 1467., *Don's Mill.*, 2 p. 77., is a variety with the leaflets almost entire. *S. Huýgan Mol.* and *S. virgata* Sweet are species from Chili and Lima, probably as hardy as *S. Mulli*.

*Triceros* (from *treis*, three, and *keras*, a horn; because the berry is three-horned) *cochinchinensis* Lour. (*Dec. Prod.*, 2 p. 89., and *Don's Mill.*, 2 p. 77.) is a tree with impari-pinnate leaves, a native of Cochin-China, on the mountains, where it grows to the height of 25 ft. It would form a most desirable acquisition to British gardens, as there can be little doubt of its proving quite hardy. *Heterodéndron oleaginum* Desf. (*Don's Mill.*, 2 p. 78.) is an evergreen shrub from New Holland, with the appearance of *Cneorum tricoccum*.

*Styloplasiium spatulatum* Desf. (*Don's Mill.*, 2 p. 78.) is also a native of New Holland. *Cneorum tricoccum* L. (*Lam. Ill.*, t. 27.) is a native of Spain and the south of France, in dry and gravelly places. It has been an inhabitant of our green-houses since 1793; and, on dry sheltered rockwork, it will stand the open air with little or no protection; producing its yellow flowers from April to September, and ripening its brownish red 3-seeded fruits, which resemble in form those of *Euphórbia Láthyris*, and remain on all the winter. The plant is evergreen, and grows to the height of from 1 ft. to 2 ft. A specimen of this species in our garden at Bayswater, planted at the foot of a wall, and protected with a glass case, but without any artificial heat, has stood for the last six years; and is now (April 23. 1836) 18 inches high, and covered with fruit and flowers; contrasting strongly with *Coronilla glauca*, planted in the same glass case, and beautifully in flower at the same time.

*Cneorum pulverulentum* is a native of Teneriffe, and probably as hardy as the other.

## CHAP. XXXIX.

OF THE HALF-HARDY LIGNEOUS PLANTS OF THE ORDER  
BURSERACEÆ.

235

*Balsamodendron gileadense* Kunth, and Don's Mill., 2. p. 81.; the *Am̄ris gileadensis* of Lin. (*Vahl Symb.*, 1. p. 28. t. 11.; and our fig. 235, representing a branch, drawn to our usual scale of 2 in. to 1 ft., and fig. 236, representing the flower and fruit of the natural size), the Balm of Gilead tree, is a native of Arabia, with leaves palmately trifoliate, and small whitish flowers. There are two or three varieties of it, which are by some considered species, but none of them have yet been introduced into Britain. — *Canarium Pimela* König. (*Don's Mill.*, 2. p. 85.) is a tree with compound leaves, growing to the height of 50 ft. in the woods of Cochin-China and Java.

*Pogástrum* G. Don. (*Don's Mill.*, p. 87.) is a Cape genus, containing several species of evergreen shrubs, with alternate pinnate leaves, some of which may probably prove hardy; but none of which have hitherto been introduced.



236

## CHAP. XL.

OF THE HALF-HARDY LIGNEOUS SPECIES OF THE ORDER  
AMYRIDACEÆ.

*Am̄ris toxicifera* Willd., the *A. balsamifera* of L. and *Cat. Car.* t. 40., is a tree with compound leaves, a native of Carolina, and growing to the height of 50 ft. It is commonly kept in green-houses; but there can be little doubt, from the climate of its native country, that it would succeed against a conservative wall. The fruit is produced in racemes, and it is pearl-shaped and purple. From the trunk of the tree a juice distils as black as ink, which is reported to be poisonous. The leaves, in a dried state, are highly cephalic. This species was introduced in 1820, but it is not common. It well deserves a place in collections, as the representative of a genus containing various species interesting in medicine and the arts.

*A. floridana* Nutt. is a shrub, growing to the height of 10 ft. in Eastern Florida, with reticulately veined, glandular, resinous, and fragrant leaves, and black berries, about the size of those of black pepper. When introduced, it will doubtless be found half-hardy.

## CHAP. XLI.

## OF THE HARDY LIGNEOUS PLANTS OF THE ORDER LEGUMINA'CEÆ.

THE name of Leguminæcæ is applied to this extensive and truly natural order, on account of the seeds of all the species being produced in leguminous pods, bearing more or less resemblance to those of the common pea or bean; and quite different from the siliquose pods of cruciferous plants.

The *Distinctive Characteristics* are: Calyx with 5 divisions, either partitions, teeth, or clefts, the odd one anterior to the axis of inflorescence. Fruit a legume. Seed with the radicle next the hilum. (*Lindley, Introd. to N. S., and Key.*) The ligneous species are trees and shrubs, for the most part deciduous; and they are disposed through almost every part of the world. The order contains some of our finest ornamental shrubs and low trees, such as *Robinia*, *Cytisus*, *Wistaria*, *Genista*, *Ulex*, *Amorpha*, *Halimodendron*, *Acacia*, *Gleditschia*, *Cercis*, and various others. It also contains some considerable trees, which belong to the genera *Robinia*, *Gleditschia*, *Sophora*, &c. The genera containing hardy ligneous plants are in number twenty-three, which, after De Candolle and G. Don, we place in characterised sections, and ascribe to them short characters, that are more or less contra-distinctive.