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THE
LADIES' FLOWER-GARDEN.

Perennials.



THE
LADIES' FLOWER-GARDEN

OF
ORNAMENTAL PERENNIALS.

BY MRS. LOUDON.

SECOND EDITION.

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INTRODUCTION.

THE plants I propose to treat of in the present work are principally those which remain several years in the ground without requiring to be taken up and replanted; flowering every summer, and generally dying down to the ground in winter, but when they do so, springing up again from the root in spring. These plants are seldom raised from seed, and when they are, they do not flower till the second or third year; but they are generally propagated by dividing the roots either in autumn, when the plants have done flowering and are in a state of repose, or in spring, just before the young shoots begin to grow. The latter is the most general period.

When a Perennial plant is increased by division, it is not necessary to take up the whole plant, but a portion of it may be divided by the spade; or the earth may be cleared away from the roots on one side, and a portion separated from the principal mass with a gardener's knife. The principal points to be attended to in both cases are—to have several buds attached to the portion of the root which is removed; to divide the part taken away from that which remains by a clean cut, so as not to leave a bruised or ragged portion of either stem or root; and to take up the whole of the fibrous roots of the part removed, to their full extent, as the spongioles, through which alone the plant can take up food, are at the extreme point of the fibrous roots, and if they are broken off, the plant will suffer considerably, from its being forced to exist without food till it can form new ones. If, on the contrary, the portion removed be taken up carefully, with all its roots and their spongioles uninjured, and planted in a suitable soil, it will grow rapidly; and its flowering will not be at all checked by its removal.

Besides the fibrous-rooted Perennials, I shall include in the present work the Biennials; that is, plants which do not flower till the second year after sowing, and which last for a few years afterwards,

but not so long as the proper Perennials. The wallflowers and the hollyhocks may be given as familiar examples of this class of plants. I shall also include the tuberous-rooted perennials; such as the Anemones and the Dahlias; and, in short, all the herbaceous flowering plants commonly found in gardens, which have not been already described in my previous works on the Annuals and the Bulbs.

The botanical arrangement of this work will be found to be a little different from that of the Annuals; as in that work I adopted Dr. Lindley's arrangement of the Natural System, whereas in the present one I have followed the late Professor De Candolle. I have done this, because, since my former work was published, the University of London, and the Apothecaries' Company, have decided that young men studying botany, with a view to the medical profession, shall be examined according to De Candolle's system; and this circumstance appears so completely to have given it the ascendancy over all the other systems, that even Dr. Lindley's own works on Elementary Botany that have been published lately, have been written in accordance to it.

In the present Edition of the Work, which is printed on a larger paper, chiefly for the sake of giving a larger margin to the plates, all the errors of press, with which I am acquainted, are corrected; and I trust it will continue to be honoured with its share of public favour.

J. W. L.

BAYSWATER.
January 22, 1849.

THE
LADIES' FLOWER-GARDEN
OF
ORNAMENTAL PERENNIALS.

CHAPTER I.

RANUNCULACEÆ *Dec.*

ESSENTIAL CHARACTER.—Sepals usually five, but sometimes varying from three to six. Petals frequently wanting, or confounded with the sepals; when present, frequently unequal, or assuming unusual shapes. Stamens numerous, growing from beneath the pistil. Carpels numerous, growing close together on an elevated receptacle or torus. Fruit generally either a caryopsis, or follicular. Leaves alternate or opposite, generally much lacinated, with the petiole dilated so as to form a kind of sheath round the stem.

DESCRIPTION, &c.—The plants comprised in this order, vary exceedingly in the form of their flowers; and in some of them the petals and sepals assume even grotesque shapes, as though Nature, tired of the commonplace routine of their ordinary forms, had tried how many new figures they might be compelled to assume. Amid all this irregularity, there is, however, always a certain degree of resemblance, which enables the experienced eye of a botanist to recognise the plants belonging to this order. They have all numerous stamens, which have always two-celled anthers, with the filament firmly affixed to their back; and the filaments, sepals, and petals (when there are any), all grow out of the receptacle from beneath the carpels. The carpels themselves are generally numerous, and though growing close together, are either not attached at all to each other, or so slightly, as to be easily separated with a pin. In many of the genera each carpel contains only one seed, which it does not open to discharge, so that what is commonly called the seed is, in fact, the dry carpel, with the seed enclosed. A seed and carpel of this kind form what is called a caryopsis; and it has been observed that seeds of this description are longer in the ground before they germinate than others, no doubt because the germ of the young plant has two coverings to break through, instead of one. Many of the caryopsides are furnished with feathery tails, as in the Clematis and Pulsatilla, the use of which is to distribute the seeds. The juice of all the Ranunculaceæ, when the plants are bruised or broken, is watery and very acrid; and they are all more or less poisonous. The leaves are generally more or less cut, and the petioles or footstalks are generally dilated at the base so as to enfold the stem. This is, indeed, so frequently the case, that when a plant is found to have this peculiarity, combined with numerous stamens growing round and from beneath a little heap of carpels in the centre of the flower, the student in botany may be certain that the plant belongs to the Ranunculaceæ. There are, however, many plants belonging to the order which have neither cut leaves nor dilated petioles. The order takes its name from the genus Ranunculus.

GENUS I.

CLEMATIS *Lin.* THE CLEMATIS, OR VIRGIN'S BOWER.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Petals wanting. Calyx of from four to eight coloured, petal-like sepals. Carpels caryopsides, and terminated by a long tail, which is generally feathery. Leaves opposite, generally deeply cut. Roots fibrous.

DESCRIPTION, &c.—The flowers of the plants belonging to this genus are so well known, that it does not seem necessary to give any detailed account of them. Some of my readers will, however, probably be surprised to find that botanists do not allow them any petals, and that their showy white or purple flowers are considered to be all calyx. There are very few herbaceous species in the genus, and these are all upright bushes, and not climbers; while all the woody kinds are climbing shrubs. The name of *Clematis* alludes to the habit of growth of these species, as it signifies a little vine.

1.—CLEMATIS INTEGRIFOLIA *Lin.* THE HUNGARIAN CLIMBER OR ENTIRE-LEAVED CLEMATIS.ENGRAVINGS.—*Bot. Mag.* t. 65; and our *fig.* 3, in Plate I.

SPECIFIC CHARACTER.—Peduncles usually 1-flowered; flowers nod-

ding; leaves entire, ovate, lanceolate, smooth. Leaves undivided. Stem erect.

DESCRIPTION, &c.—This species is very improperly termed a climber, as it has erect stems, and forms a kind of bush. The peduncles of the flower are very long, and the sepals are purple, of a leathery texture, with an undulated margin. The buds are somewhat balloon-shaped, and as the margins of the sepals are fringed with whitish hairs when young, the bud appears to be ornamented with white stripes. The leaves are also ornamented with a hairy margin, and they are entire, contrary to those of all the shrubby species, the leaves of which are very much cut. The anthers are yellow, and very long, the stamens forming a kind of pitcher-shaped centre to the flower. This species is a native of Hungary, and some parts of Germany, and it is quite hardy in British gardens. When once planted, it requires no farther attention, except occasionally taking up the plant and dividing the roots if the tuft which it makes appear likely to spread too far. When in flower, it is very ornamental, from the great number of purple flowers, each with a bright yellow centre, which arise on their long peduncles all over the bush, in the months of June and July. The flowers have no fragrance. It was introduced before 1594, and it has been ever since that period a common plant in British gardens. Among its other advantages is that of its being able to bear the smoke of London without injury; it will also flower freely in very confined situations, and even under the drip of trees. There are two varieties; one with very long leaves, and the other with the flowers almost erect.

OTHER SPECIES OF HERBACEOUS CLEMATIS.

C. OCHROLEUCA *Ait.*; *Lodd. Bot. Cab.* t. 661.

The flowers of this species are cream-coloured, and nearly erect, and bell-shaped, the sepals being curled back at the tip. The stamens are of a greenish white. The leaves are entire, and the younger ones somewhat silky. The peduncle of the flower is much shorter than in the preceding species, and the whole plant is much lower.



1. *Adonis vernalis* — 2. *Thalictrum aquilegifolium* — 3. *Clematis integrifolia* — 4. *Hepatica trilobata*
 5. *Hepatica americana*

It is a native of North America, where it is generally found on the banks of rivers. It was introduced in 1767. It is hardy in British gardens, but is very seldom seen, as it does not ripen seeds in this country, and it is generally killed by any attempt to divide the root. The flowers are without fragrance.

C. ERECTA *All.*

This species has white, sweet-scented flowers, and pinnate leaves. The flowers are produced in dense corymbs, and the plant grows two or three feet high. There are several varieties, which do not, however, differ greatly from the species. This species is sometimes called the Spanish Virgin's Bower, and it is found wild in Spain, and throughout the south of Europe. It was introduced before 1597, but it is seldom seen in British gardens. It flowers from June till August.

C. MARITIMA *Lin.*

This species differs from the preceding one, chiefly in the corymbs of flowers being loose instead of dense. It is a native of the south of Europe, where it is generally found on the sea-coast.

C. ANGUSTIFOLIA *Jacq.*; *Wat. Dend. Brit.* t. 112;

has white flowers, with very blunt sepals. The leaves are pinnate, and the leaflets lanceolate. It is a native of Siberia, and was introduced in 1787.

There are two or three other species which may be called herbaceous when young, but they most of them take a half shrubby character with time.

GENUS II.

THALICTRUM *Lin.* THE MEADOW RUE, OR FEATHERY COLUMBINE.

Lin. Syst. POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Involucre none. Calyx of four or five deciduous sepals. Carpels 1-seeded, indehiscent, frequently stalked, terminated by a point. Seeds pendulous. Stems never climbing. Leaves alternate.

DESCRIPTION, &c.—The flowers of plants of this genus have no petals; and, though they have a calyx of four or five petal-like sepals, it is generally so small and inconspicuous, and falls so soon, that the flowers appear to be all stamens. The carpels are caryopsides, terminating in a point; the roots are perennial; but the stems die down to the ground every winter. The roots have an unpleasant smell, and resemble those of rhubarb, both in appearance and qualities. The British species are called Meadow Rue, from their leaves having the taste of rue; but their flowers can hardly be called ornamental. Only two or three species are cultivated in British gardens. The name of *Thalictrum* is derived from a Greek word, to grow green, from the bright green of the young shoots; or from two Greek words, signifying the "cradle of affluence," from the abundance of its flowers.

1.—THALICTRUM AQUILEGIFOLIUM *Lin.* THE FEATHERY COLUMBINE.

ENGRAVINGS.—*Bot. Mag.* t. 1818; and our *fig. 2*, in Plate 1.

VARIETIES.—T. A. 2, *atropurpureum Murr.* A native of Austria. The stems and stamens are all of a very dark purple.

T. A. 3, *formosum Dec.*; *Bot. Mag.* t. 2025. The filaments are dark purple, and the anthers yellow.

T. A. 4, *album G. Don.* Stems green. Stamens white.

SPECIFIC CHARACTER.—Flowers in corymbese panicles. Sepals recurved, much shorter than the stamens. Caryopsides stalked. Leaves tri-pinnate. Roots fibrous.

DESCRIPTION, &c.—This species is very ornamental, from the feathery brightness of its flowers, the stamens of which are only conspicuous. The sepals are of the same colour as the stamens; but they are so small, and so much

turned back, as to be very little seen. The flowers are disposed in corymbose panicles, with little stipules at the base of each fork of the panicle. The stem is hollow, and generally of a dark purple colour, covered with a kind of mealy bloom. The leaves are tri-pinnate or tri-ternate. The caryopsides are three-sided, with wings on the angles; and they hang, when nearly ripe, on rather long foot-stalks. The species is a native of Germany, and other parts of central Europe, where it is found generally on woody hills. It was introduced in 1731. It is quite hardy in British gardens; but the stems die down to the ground every winter, and should be cut off. The plant is propagated by seeds, or by dividing the root in spring. It should be planted in a dry, but somewhat shaded situation, and it grows from one foot to three feet high, flowering from May to July. The feathery Columbine was known to the Greeks and Romans, and dedicated to Bacchus; and it was thought lucky to lay a newly-born child on a pillow stuffed with its flowers, as it was supposed to ensure richness to the child through life.

2.—*THALICTRUM FLAVUM* *Smith.* THE COMMON MEADOW RUE.

ENGRAVINGS.—*Eng. Bot.* t. 367; 2nd edit. t. 775.

SPECIFIC CHARACTER.—Stem erect, branched, furrowed, leafy.

Leaves bi-pinnate; leaflets broadly ovate, or wedge-shaped, trifid. Panicle compact, sub-corymbose. Flowers erect. (*Smith.*)

DESCRIPTION, &c.—The common Meadow Rue has an upright, compact panicle of yellow flowers; and deeply-cut leaflets. It is a native of Britain, and grows two or three feet high in osier-beds or wet meadows, or on the banks of rivers or ditches. It flowers in June and July. The stem is hollow and furrowed; and the root, which is fibrous, is sometimes used to dye wool yellow. The whole plant is extremely acrid, and the country people use the bruised leaves as a blister. This species is seldom grown in gardens, though it is certainly ornamental.

3.—*THALICTRUM AMENONOIDES* *Mich.* THE ANEMONE-LIKE *THALICTRUM*.

SYNONYME.—*Anemone thalictroides* *Lin.*

ENGRAVINGS.—*Bot. Mag.* t. 866; *Swt. Brit. Flow. Gard.*, 2d ser. t. 150; *Lodd. Bot. Cab.* t. 770.

SPECIFIC CHARACTER.—Flowers produced in umbels. Sepals longer than the stamens. Leaves bi-ternate, leaflets roundish; floral leaves resembling an involucre. Roots tuberous.

DESCRIPTION, &c.—This species is a very puzzling one. Its flowers, particularly when double, are very much like those of the wood anemone, and the whole appearance of the plant resembles that of the flowers belonging to that genus. There are generally eight sepals, which are white, and much longer than the stamens, and which are roundish and somewhat concave. The leaves are small, but in shape they resemble those of the Columbine; and two or three of them are united at a little distance below the flower, so as to form a kind of involucre, just as is the case with the anemones. The roots are also tuberous. It is true that this plant differs from the anemones in its sepals falling off very soon after their expansion, leaving on, the stamens, which in their naked state make the flowers look very like those of the meadow rues. The carpels are also completely those of the genus *Thalictrum*. The species is a native of the whole of North America, as it is found in every part of that country, from Virginia to Canada. It was introduced into England in 1768; and, as it is quite hardy and flowers abundantly, it is a very useful border plant in British gardens. It is also very useful for filling a bed in a geometrical flower-garden, from its dwarf stature, which seldom exceeds six inches, and its compact habit of growth.

OTHER SPECIES OF THALICTRUM.

T. CLAVATUM *Dec.*

The seed-vessels are inflated, and spread out like a star. It is a native of North America, where it is found on sand-hills, near Hudson's Bay. It was introduced in 1820.

T. CORNUTI *Lin.*; T. REVOLUTUM *Dec.*; T. CANADENSIS *Cornuti.*

A native of North America, introduced in 1806. The flowers are white, or pale purple; and the leaflets are glaucous beneath, and somewhat revolute at the edges.

T. ALPINUM *Lin.*; *Bot. Mag.* t. 2237; *Eng. Bot.* t. 262; 2^{od} edit. t. 772.

A very pretty little plant, with an upright stem, and delicate, feathery, nodding flowers. The leaves are very small and roundish, like those of the Columbine. It is a native of hilly places through all the north of Europe, and it has also been found wild on the mountains of Scotland and Wales. It is quite hardy, and very suitable for rock-work.

T. PETALOIDEUM *Lin.*

The sepals of this species are white, and longer than the stamens; and, though they soon fall, the filaments of the stamens are so much dilated as to look like little flesh-coloured petals with a yellow ball (the anther), at the tip of each. The seed-vessels are striped, and they have no foot-stalks. The species is a native of the north of Asia, and it was introduced in 1799. There are many other species of *Thalictrum*; but they are seldom seen in British gardens.

GENUS III.

HEPATICA *Dec.* THE HEPATICA OR LIVERWORT.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Involucre of three entire leaves in the form of a calyx close to the flower. Petals wanting in the single flowers. Calyx of six to nine petal-like coloured sepals disposed in two or three series. Stamens and ovaries numerous. Carpels tailless. Leaves evergreen, three or five lobed.

DESCRIPTION, &c.—The European Hepaticas are so well known in every garden, that I need only remind my readers that they are dwarf evergreen plants with three-lobed leaves, and very pretty flowers, which are either bright blue, bright pink, or white, but never yellow. Like the Clematis, the single Hepaticas have no petals, the coloured part of the flower being only a calyx, while that part which looks like a calyx is the involucre; it being separated from the flower by a small portion of the stem, which is never the case with the true calyx. The American Hepaticas are probably only varieties of *H. triloba*. The name of Hepatica signifies belonging to the liver, and the English name of the plant is Liverwort, but why these are applied seems doubtful.

1.—HEPATICA TRILOBA *Chois.* THE COMMON HEPATICA.

SYNONYMS.—*Adonis Hepatica* *Lin.*; *A. precox* *Sal.*
 ENGRAVINGS.—*Bot. Mag.* t. 10; *Eng. Bot.* t. 51; and our *fig. 4*,
 in Plate I.

VARIETIES.—The species is the single blue, but the varieties are the

double blue, the single and double pink, and the single and double white.

SPECIFIC CHARACTER.—Leaves cordate, three-lobed; lobes quite entire, ovate, acutish; petioles and scapes rather hairy. (*G. Don.*)

DESCRIPTION, &c.—The flower of the *Hepatica* is shrouded in the bud by its involucre, which consists of three entire leaves. The sepals are of the same colour in the bud as when expanded. The single flowers have numerous stamens and carpels, but in the double flowers these are all changed into petals. The leaves are of a thick leathery texture and a deep green colour. The flowers are numerous, but each is on a separate flower-stem, or scape, rising from the root. The species is a native of various parts of Europe; and it has sometimes, though very rarely, been found wild in England, though probably the apparently wild specimens have been accidentally thrown out of some garden. The plant should be planted in light soil, the best being peat or sandy loam; and as it has a tendency to push itself out of the ground, so as partially to lay bare its roots, the earth should be occasionally drawn up round it, or it should be taken up and replanted about every third or fourth year in autumn; as it should not be removed after the young shoots have begun to grow, and the flowers to expand, which they do as soon as the snow is off the ground in spring. All the varieties may be kept in pots, and they are all very suitable for rock-work.

2.—HEPATICA AMERICANA *Ker.* THE AMERICAN HEPATICA.

SYNONYME.—*H. t.* var. *Pursh.*

VARIETY.—*H. A. 2 acutiloba*; *H. acutiloba* *Dec.*

ENGRAVINGS.—*Bot. Reg.* t. 387; and our *fig. 5*, in Plate 1.

SPECIFIC CHARACTER.—Leaves cordate, three-lobed, lobes quite entire, roundish obtuse; petioles and scapes very hairy. (*G. Don.*)

DESCRIPTION, &c.—This is probably only a variety of *H. triloba*, though the sepals are rounder at the point and narrower than in that species. They are also somewhat darker at the margin than in the centre. This plant is very abundant in Canada in rocky situations, but it does not succeed well in British gardens, particularly near a town, though it does best on rock-work. This species is found to vary considerably in the leaves, which are sometimes found with five lobes, and sometimes with the lobes pointed. It was introduced in 1800.

GENUS IV.

HYDRASTIS *Lin.* YELLOW-ROOT.

Lin. Syst. POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of three ovate sepals. Petala wanting. Stamens and ovaries numerous. Fruit baccate, numerous, collected into a head, each terminated by the style, 1-celled, 1—2-seeded.

Seeds somewhat egg-shaped, smooth. Roots tuberous, and yielding a yellow dye. Leaves 3 or 5-lobed. (*G. Don.*)

DESCRIPTION, &c.—There is only one species of this genus. The name of *Hydrastis* is derived from the Greek word for water; because the plant will only live in moist situations.

1.—HYDRASTIS CANADENSIS *Lin.* THE CANADIAN YELLOW-ROOT.ENGRAVINGS.—*Bot. Mag.* t. 3019, and t. 3232.

SPECIFIC CHARACTER.—Lower leaves stalked, upper ones nearly sessile. Carpels ovate, acute.

DESCRIPTION, &c.—The flower of this plant, though small, is brilliantly white; and the leaves, and fruit, which looks like a large scarlet mulberry, are very ornamental. It is a native of Canada, where it grows in marshy places: and where the root, which is covered with tubercles that are yellow inside, is used both as a tonic medicine and as a yellow dye. It was introduced in 1759, but it is seldom seen in British gardens, as, if not kept very moist, it will not live through a summer.

GENUS V.

ADONIS *Dill.* THE FLOS ADONIS.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of five sepals. Petals from five to fifteen. Stamens numerous. Caryopsides numerous, ovate, spiked, or hooked, and crowded on an elevated receptacle or torus. Embryo ovate. Cotyledons distant. Leaves deeply cut into numerous linear lobes. Flowers solitary, produced at the top of the stem or branches.

DESCRIPTION, &c.—Most of the plants belonging to this genus are annuals with crimson flowers, and hence the name, as they are fabled to have sprung from the blood of Adonis when he was wounded by the wild-boar. There is probably only one species of perennial Adonis, as, though four or five are marked in some catalogues, they appear to be all varieties of *A. vernalis*.

1.—ADONIS VERNALIS *Lin.* THE SPRING ADONIS.

SYNONYMES.—*A. Helleborus Crantz*; *A. spennina Jacq.*; *A. Mentzeli Dec.*; *A. sibirica Patrin.*; *A. daurica Reichb.*; *A. Irkutiana Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 134; and our *fig. 1* in Plate 1.

VARIETIES.—*A. v. 2 volgensis*; *A. volgensis Stev.*; *A. chærophylla Fisch.* Stems branched. Sepals of the calyx pubescent on the outside.

A. v. 3 pyrenaica; *A. pyrenaica Dec.* Stem branched. Radical leaves on long stalks. Carpels smooth.

SPECIFIC CHARACTER.—Radical leaves abortive, or reduced to sheathing scales. Stem leaves sessile, and multifid with entire lobes. Caryopsides velvety; hooked with the recurved styles. Roots black and acrid.

DESCRIPTION, &c.—A very showy plant, a native of the north of England, in valleys, and of the south on the sunny parts of mountains, flowering immediately after the melting of the snow. It flowers freely in English gardens in almost any soil, provided the situation in which it grows be open to the sun. It was introduced before the time of Parkinson (1629), as he speaks of it as the Great Ox-eye, or large yellow Anemone. It is a very showy plant, and well deserving of cultivation, though of late years it has been somewhat neglected from the great number of novelties that have been introduced into our flower-gardens.

GENUS VI.

PULSATILLA *Willd.* THE PASQUE FLOWER.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Involucre sessile, distant from the flower. Petals wanting. Sepals coloured and petal-like; varying from five to fifteen. Caryopsides ending in a long feathery tail. Leaves much cut, with a dilated petiole, clasping the stem.

DESCRIPTION, &c.—The beautiful flowers which compose this genus, have been separated from *Anemone*, to which they are closely allied, on account of their carpels or caryopsides having feathery tails, while those of the true *Anemones* have tails which are not feathery. Though I am in general averse to multiplying genera, as I think every new name that is to be learnt adds greatly to the difficulties which the botanical or floricultural student has to surmount, yet I have adopted this distinct genus; because the grounds of distinction are such as can be easily ascertained with the naked eye; and as there are but few species in *Pulsatilla*, the finding a feathery-tailed carpel in any unknown species of *Anemone* will show that it must be one of these, and will thus help the student to discover its specific name. Every species, both of *Anemone* and *Pulsatilla*, has, what is called an involucre, consisting of three leaves joined together round the stem, at some distance below the flower; and in *Pulsatilla* these leaves have no footstalks, and form a kind of sheath round the stem. The leaves of all the species are much cut, and the plants are all more or less hairy. The name of *Pulsatilla* is said to be from *Pulse*, to beat, from the plants growing naturally in exposed situations, where they are much beaten about by the wind.

1.—PULSATILLA VERNALIS *Mill.* THE SPRING PASQUE FLOWER.

SYNONYMES.—*Anemone vernalis* *Lin.*; *Anemone sulphurea* *Alli-* trifid, smoothish. Flower erect. Involucre very hairy. Sepals six, straight, elliptical oblong. (*G. Don.*)
oni.

ENGRAVINGS.—*Swt. Brit. Flow. Gard. t. 205*; and our *fig. 4* in Plate 2.

SPECIFIC CHARACTER.—Leaves pinnate, segments cuneate-lanceolate,

VARIETIES.—*P. v. 2 luteus* *G. Don.* Flowers yellow.

P. v. 3 autumnalis *G. Don.* Flowering in autumn. Leaves resembling parsley.

DESCRIPTION, &c.—This very singular little plant, when not in flower, exhibits only a dense tuft of leaves quite close to the ground, covered all over with hairs, particularly when young. The flowers first appear in the shape of a very hairy bud, the outer covering of which is an involucre cut into long awl-shaped segments, and densely covered with thick spreading hairs. The bud soon expands into a very handsome flower, the six broad sepals composing which are of a brilliant white inside, and tinted with pale pink and pale blue on the outside. The stamens are yellow, and the pollen white. The large size of the flowers in comparison with the close tuft of small leaves from which they spring, produces a very striking effect. There is a variety with purple flowers. The species is a native of Switzerland, where it is a native of the highest mountains near the limits of the perpetual snow, and it was introduced in 1752. The flowers appear in April. This plant is very suitable for rockwork, and when grown in the open border, it should be in a sandy soil, and in a dry open situation, as damp is very injurious to it. As it ripens abundance of seeds, it may be increased either by them, or by dividing the root; taking care to sow the seeds in pots as soon as they are ripe, and to keep the young plants when they come up safe from slugs and woodlice, which are very apt to destroy them.







1. *Pulsatilla alpina* — 2. *Pulsatilla patens* — 3. *Pulsatilla pratensis* — 4. *Pulsatilla vernalis*
5. *Pulsatilla vulgaris*

2.—PULSATILLA PATENS *Mill.* THE SPREADING PASQUE FLOWER.

SYNONYME.—*Anemone patens Lin.*

ENGRAVINGS.—*Bot. Mag.* t. 1994; and our *fig.* 2 in Plate 2; both of the cream-coloured variety.

VARIETY.—*P. p. 2 ochroleuca G. Don.* Flowers cream-coloured.

SPECIFIC CHARACTER.—The flower rising before the full expansion of the leaves. Involucre large. Radical leaves palmately cut. Flower erect, spreading, hairy; sepals lanceolate.

DESCRIPTION, &c.—A very handsome species, with large, widely spreading flowers, which rise from the ground before the leaves, and expand before the radical leaves are fully unfolded. The involucre is very large and cup-shaped. The other leaves rise from the root round the stem, and they are palmate, with the footstalk attached to the centre. The flowers are large, and either purple or cream-coloured; the former being considered the species, and the latter the variety. The plant is a native of Siberia. It grows about a foot high, and the flowers, like those of all this genus, appear in early spring. The name of Pasque-flower, indeed, intimates that these flowers appear about Easter. Like all the other species, it prefers a dry soil and an open situation. When the seeds are sown it is customary to rub them together between the hands to divest them of their feathery tails, which get entangled with each other, so as to render it difficult to separate the seeds. Some gardeners mix the seeds with a little fine sand before sowing for the same purpose.

3.—PULSATILLA VULGARIS *Mill.* THE COMMON PASQUE FLOWER.

SYNONYMES.—*Anemone Pulsatilla Lin.*; *A. pratensis Withering*; *A. collina Sol.*

ENGRAVINGS.—*Eog. Bot.* t. 51; 2d edit. t. 777, and our *fig.* 5 in Plate 2.

VARIETIES.—*P. v. 2 rubra*; *P. rubra Dale*; *A. p. 3 rubra Lam.* Plant dwarf, flowers erect, spreading; sepals blunt.

P. v. 3 lilacina; *A. p. 7 lilacina Dec.*; *A. intermedia Schul.*

A. longipetala Schl. Flowers lilac, nodding.

P. v. 4 Dahurica; *A. p. 3 Dahurica Dec.* Plant dwarf, very hairy; flower erect, sepals oblong and pointed.

SPECIFIC CHARACTER.—Flower solitary, nearly erect; segments six, pointed, hairy. Leaves bi-pinnate, leaflets deeply cut, with linear lobes. Involucre deeply cut into numerous linear segments.

DESCRIPTION, &c.—It is this flower that has obtained for the genus the general name of Pasque-flower, from its flowering at Easter, which was formerly called Pasque in England, as it still is Pâques in France, from the Paschal lamb having been eaten by the Jews at that season.

The Pasque flower is common all over Europe in dry, sandy, or chalky soils; but it is never found unless the soil be quite dry, and the situation open. It will not live in a close or smoky atmosphere. The flower has rather a singular effect, from the long silky hairs that cover its deep purple sepals on the outside; particularly in Italy, where it is very abundant, and where the heat of the climate gives intensity to its colour. The whole plant is acrid, and will raise blisters; and the juice of the flowers is said to dye paper green.

4.—PULSATILLA ALPINA *Spreng.* ALPINE PULSATILLA.

SYNONYMES.—*A. alpina Lin.*; *A. baldensis Lam.*; *A. burseriana Hort.*; *A. myrrhifolia Vill.*; *A. apifolia Wild.*; *A. sulphurea Cam.*

ENGRAVINGS.—*Bot. Mag.* t. 2007; and our *fig.* 1, in Plate 2.

VARIETIES.—These are very numerous; but they differ chiefly in

the size and colour of the flowers, which are white, yellow, or purple. The most distinct are *P. a. flavescens*, and *P. a. micrantha*.

SPECIFIC CHARACTER.—Leaves bi-ternate; segments deeply cut. Involucre large, of the same form as the leaves. Flower quite erect; sepals elliptic, spreading.

DESCRIPTION, &c.—Perhaps no species varies more than this does. Sometimes the flowers are as large as those of the largest Anemones grown by florists, and at others they are as small as those of the wood Anemone. The colour is always white or yellowish, though the backs of the sepals are sometimes purple; and the leaves,

which appear before the flowers, always resemble those of parsley. The involucre is very large, and of the same form as the leaves. The height of the plant also differs, from a few inches to two or three feet. When grown in gardens it does not require any particular care, but it attains the largest size, and has the finest flowers in a sandy loam. The flowers are very often seen double, as is the case with that of the specimen represented in Plate 2.

5.—PULSATILLA PRATENSIS *Spreng.* THE MEADOW PASQUE FLOWER.

SYNONYMES.—*P. nigricans* *Storck*; *Anemone pratensis* *Lin.*; *A. pulsatilla* β *Lam.*; *A. sylvestris* *Vill.*; *A. absoleta*.

VARIETY.—*P. p. 2 albana*; *A. albana*, flowers white. *G. Don.*

ENGRAVINGS.—*Bot. Mag.* t. 186; and our *fig. 3*, in Plate 2.

SPECIFIC CHARACTER.—Leaves pinnate, segments deeply cut, lobes linear. Involucre large, resembling the leaves. Flower campanulate, pendulous; segments six, reflexed at the tip.

DESCRIPTION, &c.—This species is very distinct, from its drooping, bell-shaped flower, which bears very little resemblance to that of an Anemone. The leaves resemble those of parsley, and the involucre is very large, and joined together so far up, as to give it the appearance of a deep cup. It is a native of Denmark, the north of Germany, and Russia, and it is found occasionally in France, always growing in meadows, but in dry, poor, clayey soils. The whole plant is extremely acrid. There are three kinds; one with very dark purple flowers, another with the flowers cream-coloured, and a third with the flowers of a pure white. When grown in gardens it should be in a poor soil, and in an open situation.

OTHER SPECIES OF PULSATILLA.

P. HALLERI *Spreng.*; *Lodd. Bot. Cab.* t. 940.

A native of Switzerland; introduced in 1816. Flowers pale purple covered with white silky hairs on the outside.

P. CERNUA *Thunb.*; *Ladies' Mag. of Gard.* t. 7.

A native of Japan; introduced in 1806. Flowers crimson, covered with golden-coloured hairs on the outside.

P. NUTTALIANA *Dec.*; *ANEMONE LUDOVICIANA* *Nutt.*; *A. PATENS* *Hook.*; *CLEMATIS HIRSUTISSIMA* *Pursh.*

A very distinct species, with ternate leaves, and erect flowers, which are sometimes purple, and sometimes cream-coloured.

GENUS VII.

ANEMONE *C. Bauh.* THE ANEMONE, OR WIND-FLOWER.

Lin. Syst. POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Involucre of three leaves more or less distant from the flower. Petals wanting in the single flowers. Calyx of | from five to fifteen coloured, petal-like sepals. Caryopsides without feathery tails. Leaves deeply lobed. Roots tuberos.

DESCRIPTION, &c.—The true anemones differ from the Pasque flowers, principally in the carpels; which, in the present genus, are without the feathery tails that formed so marked a feature in the preceding one. The flowers of the species of *Pulsatilla* are also generally hairy on the outside, while the true anemones are smooth. The name of anemone signifies wind-flower, the species generally growing wild in places exposed to the wind.

1.—ANEMONE PALMATA *Lin.* THE PALMATE ANEMONE.

SYNONYMS.—*A. latifolia Ger.*; *A. lutea Hort.*; Cyclamen-leaved anemone.

ENGRAVINGS.—*Bot. Rep.* t. 172; *Bot. Reg.* t. 200; *Bot. Cab.* t. 1660; and our *fig.* 4 in Plate 3.

SPECIFIC CHARACTER.—Leaves cordate, suborbicular, bluntly 3—5-lobed, slightly toothed in the margin, hairy. Involucre sessile, spreading, trifold. Sepals ten or twelve, oblong.

DESCRIPTION, &c.—A very distinct species, with golden yellow flowers, and roundish leaves, which strongly resemble those of the common cyclamen. The involucre is near the flower in the bud; but, as the flower-stem grows, the distance continues to increase till the flower expands, when it has become very considerable. Sometimes two flower-stalks spring from the same involucre, a circumstance rarely met with except in this genus; and, when this is the case, the later and smaller flower has generally a second involucre near the flower. The leaves are roundish, and closely resemble those of a cyclamen; but the involucre resembles that of the other species of anemone. The species is a native of Portugal and the coast of Barbary, and it was introduced before 1597; but it is rarely met with in British gardens. It succeeds best on rock-work, or in any place which is dry and exposed to the sun and air. Thus situated, it flowers freely, and produces a brilliant effect in April, when large yellow flowers are not abundant. It is sometimes kept in pots, and I saw a large stock of it thus grown at Pope's Nursery, at Handsworth, near Birmingham, a few years ago; but it is by no means so generally cultivated as it deserves to be. The roots are tuberous, and they are generally planted in autumn, turning a flower-pot over them, if they are in the open ground, during very severe frosts; or they may be planted in February.

2.—ANEMONE APENNINA *Smith.* THE BLUE MOUNTAIN ANEMONE.

ENGRAVINGS.—*Eng. Bot.* t. 1062; 2d edit. t. 780; and our *fig.* 3, in Plate 3.

SPECIFIC CHARACTER.—Leaves triternate, segments lanceolate, cut,

and toothed. Involucre of three-stalked, deeply-cut, ternate leaves. Flower solitary. Petals numerous, lanceolate. Pericarps pointed, awnless. (*Smith.*)

DESCRIPTION, &c.—This very beautiful species is a native of Italy, where it is found in great abundance in the woods. It is sometimes found wild in England; but it is very doubtful whether it is really a native of this country. The colour of the flowers is a bright and beautiful blue, and the sepals, which vary in number from twelve to twenty, are bent slightly back, so as to give a great depth and richness to the colour by the addition of shade. It has been sometimes asserted that no genus has plants with flowers of a bright yellow and a bright blue; but this and the preceding species prove the assertion to be incorrect. The blue mountain anemone will grow and flower freely in any common garden soil. The roots are tuberous, and should be planted in October, or February.

3.—ANEMONE NEMOROSA *Lin.* THE COMMON WOOD ANEMONE.

ENGRAVINGS.—*Eng. Bot.* t. 355; 2d edit. t. 778; and our *fig.* 8, in Plate 3.

VARIETIES.—*A. n.* 2, fl. pl. *Hort.* The flowers are double, and very handsome.

A. n. 4, *cærulea Don.* Flowers pale blue.

A. n. 3, *quinquefolia Lin.* Leaves decidedly five-lobed.

SPECIFIC CHARACTER.—Involucre of three ternate, or quinate, stalked, lobed and cut leaves. Flowers solitary. Petals six, elliptical, veined. (*Smith.*)

DESCRIPTION, &c.—There are few British plants more beautiful than this little denizen of our woods, which grows under the shade of the trees, and among the long grass on banks under hedges. It is one of the first flowers of spring, as even in March, in bright sunny weather, it may be seen opening its snow-white flowers as

widely as possible, as though it wished fully to enjoy the warmth and light; but in gloomy weather the flowers close. In gardens it is a very beautiful ornament to the borders; and it requires no care save that of never suffering it to become quite dry, as its roots are fusiform and furnished with very few fibres.

4.—ANEMONE RANUNCULOIDES *Lin.* THE YELLOW WOOD ANEMONE.

SYNONYMS.—*A. lutea Lam.*; Crow-foot Anemone.

ENGRAVINGS.—Lodd. Bot. Cab. t. 556; Eng. Bot. t. 1484; 2d edit. t. 779; and our *fig. 5* in Plate 3.

VARIETY.—*A. r. 2, purpurea.* Flowers purple.

SPECIFIC CHARACTER.—Involucre of three or five shortly-stalked, cut and toothed leaves. Flowers solitary, or in pairs. Petals five or six, elliptical. (*Smith.*)

DESCRIPTION, &c.—The flower of this beautiful little plant is very like that of the Lesser Celandine (*Ficaria ranunculoides*); but it is easily distinguished from that pretty little flower by its involucre, and its stamens and pistil having only one covering, which modern botanists call a calyx, though it is as brilliantly coloured as any corolla. The species is sometimes found wild in Hertfordshire and Kent; but it is doubtful whether it is really a native of England. It is, however, common in many parts of the Continent, and on the Pyrenees is found a variety of it with purple flowers. It has a long, fusiform root, with few fibres; and, when planted in gardens, it should be in deep, free soil.

5.—ANEMONE SYLVESTRIS *Lin.* THE SNOW-DROP ANEMONE.

ENGRAVINGS.—Bot. Mag. t. 54; Lodd. Bot. Cab. t. 1739.

SPECIFIC CHARACTER.—Leaves ternate or quinate, hairy beneath;

segments deeply-toothed at top; those of the involucre stalked. Sepals six, elliptical. Fruit very hairy. (*G. Don.*)

DESCRIPTION, &c.—A very elegant plant with white flowers, which droop in the bud, and have very much the appearance of a snow-drop; but become large and showy when they expand. There are frequently two flower-stalks from one involucre, as in *A. palmata*. It is a native of Germany, whence it was introduced before 1596; but it is now very seldom seen in gardens. It is very hardy, and it will grow in any soil or situation; and it is very easily propagated, as it has creeping roots, which it extends on every side, throwing up abundance of suckers, which of course only require to be divided from the parent plant. It also ripens abundance of seeds, the outside of which is quite woolly.

6.—ANEMONE ALBA *Juss.* THE WHITE ANEMONE.

SYNONYME.—*A. ochotensis Fisch.*

ENGRAVINGS.—Bot. Mag. t. 2167; Bot. Cab. t. 322.

SPECIFIC CHARACTER.—Leaves ternate or quinate; segments deeply-

toothed at top; those of the involucre stalked. Pedicel solitary. Sepals five, obovate, concave. Fruit very hairy. (*G. Don.*)

DESCRIPTION, &c.—In botanical character this species is very nearly allied to the preceding one, but in appearance they are very different; *A. alba* being a dwarf plant with a tuft of leaves, which are purple on the under side close to the ground, and a single flower-stalk rising from them like that of a daisy. The flowers are also very different, those of *A. alba* being produced in August and very small, with rounded, concave sepals; while that of *A. sylvestris* is large and flat. *A. alba* is a native of the Crimea, and it would probably be quite hardy in British gardens, were it planted in the open border; but from its small size and habit of growth, it is generally grown in pots or on rock-work. The roots are creeping and fibrous; and the seeds are so woolly, as to have their covering used in their native country as a substitute for cotton. It was introduced in 1820.



1 *Anemone coronaria*. 2 *Anemone stellata*. 3 *Anemone hepatica*. 4 *Anemone palmata*.
 5 *Anemone ranunculoides*. 6 *Anemone vitifolia*. 7 *Anemone viscaria*. 8 *Anemone nemorosa*.

7.—ANEMONE VITIFOLIA Buch. THE VINE-LEAVED ANEMONE.

ENGRAVINGS.—Bot. Reg. t. 1385; Bot. Mag. t. 3376; Botanist, t. 9; and our fig. 6 in Plate 3.

SPECIFIC CHARACTER.—Leaves large, cordate, five-lobed, clothed

with white wool beneath. Stem also covered with white wool. Involucrum stalked, woolly beneath, and smooth above.

DESCRIPTION, &c.—A very handsome species, a native of Nepaul, whence it was introduced by the late Countess Amherst in 1829, and first sown at Montreal, Seven Oaks, Kent. It is now common in every part of Great Britain. The plants grow about two feet high; the flowers are large, and of milky whiteness; they have also something of the waxy look of a white Camellia. It was found in Nepaul by Dr. Buchanan Hamilton, in moist woods on the mountains, always near a rill or torrent, and in a shady situation; but in England it grows freely in the open border, or in a bed fully exposed to the sun. It is generally propagated by seeds, which it ripens in abundance, but which do not flower till the second year after they are sown.

8.—ANEMONE NARCISSIFLORA Lin. THE NARCISSUS-FLOWERED ANEMONE.

SYNONYMS.—*A. umbellata* Lam.; *A. fasciculata* Tourn.; *A. dubia* Bell.; *Ranunculus montanus* Clus.

ENGRAVINGS.—Bot. Mag. t. 1120; and our fig. 7 in Plate 3.

SPECIFIC CHARACTER.—Radical leaves somewhat hairy; palmately 3—5-parted; lobes deeply-toothed. Involucro large; lobes 3—5-cleft. Flowers in umbels.

DESCRIPTION, &c.—This species is very distinct, from its flowers being produced in umbels; and it varies so much when raised from seed, that five or six varieties of it are recorded in books. They are, however, very seldom seen in this country. The species is a native of the Pyrenees; but it is also found wild in Switzerland, on Mount Caucasus and the mountains of Siberia, and in Canada, and on the western coast of North America. A plant very similar, if not the same, has also been found on the mountains of Nepaul. The flowers are white or cream-coloured, and sometimes purple on the outside. The roots are fibrous, and the carpels are quite destitute of wool. This species grows best in calcareous soil, or in peat and sand. It is very ornamental, and highly deserving of cultivation. It flowers in April and May. It was introduced in 1773 by the Earl of Bute. One of the varieties is said to be sweet-scented.

9.—ANEMONE STELLATA Lam. THE STAR, OR BROAD-LEAVED ANEMONE.

SYNONYMS.—*A. hortensis* Lin.; *A. versicolor* Sal.; *A. purpurea* Hort.; *A. pavonina* Dec.; *A. fulgeos* Gay; Peacock Anemone, Purple Anemone.

ENGRAVINGS.—Bot. Mag. t. 123; Swt. Brit. Flow. Gard. t. 112;

and our fig. 2 in Plate 3.

SPECIFIC CHARACTER.—Leaves three-parted, lobes wedge-shaped, deeply-toothed. Involucres sessile, oblong, three-forked. Sepals ten or twelve, lanceolate.

DESCRIPTION, &c.—The tubers of this species, and of six or eight varieties of it, may be purchased in the seed-shops generally under the name of *Anemone hortensis*. The varieties are generally purple or crimson, or white, or some of the intermediate shades; but one, sometimes called *fulgens*, is of a bright scarlet. When these flowers become double, they closely resemble those of *A. coronaria*, but they may be always distinguished by their pointed sepals. The tubers are black, and generally they look as though a number of very small potatoes had grown together. On the upper side there are several eyes or buds; and when the tubers are planted this side must be kept uppermost, as from it the shoots will proceed; while the fibrous roots, through which the plant derives its nourishment, grow from below. The tubers are very brittle, and care should be taken not to break them in planting, as it weakens the plants; but if an accident does happen, the broken pieces should be

saved and planted, as they will form fresh tubers in time. It is generally not thought worth while to make a regular bed for this species and its varieties, as they are very inferior both in size and beauty to the varieties of *A. coronaria*; and they may be planted in the borders in any tolerably good garden mould, taking care that they are not under the drip of trees. They flower very well in London, without appearing at all injured by the smoke. The species is a native of the south of Europe; and it was introduced before 1596.

10.—ANEMONE CORONARIA *Lin.* THE NARROW-LEAVED, OR POPPY ANEMONE.

SYNONYMES.—*A. hortensis* *Wein.*; *A. œnanthe* *Rem.*; Garland-flowering Anemone; Garden Anemone.

ENGRAVINGS.—*Bot. Mag.* t. 814; and our *fig.* 1 in Plate 3; and *figs.* 1, 2, and 3, in Plate 4.

SPECIFIC CHARACTER.—Leaves ternate, deeply cut, with numerous linear segments. Involucre sessile, deeply cut. Sepals six, oval rounded.

DESCRIPTION, &c.—This species and its varieties constitute what are generally termed the florists' anemones; and in the double varieties the sepals, which are called by the florists the guard-leaves, remain the same, while the stamens and carpels are changed into petals of quite a different shape and appearance. The tubers, which are sold in the seed-shops, and resemble those of the last species, should be planted either in October or February: in the first case they will flower in April, and in the latter in June. According to the usual method of growing these flowers, a bed should be dug, eighteen inches or two feet deep, and at the bottom of this bed should be laid a stratum, six or eight inches deep, of old cow-dung; if two years old, so much the better. The bed should then be filled in with fresh loam from a field, if it can be procured, and if not, with good sandy loam. If expense be an object, the cow-dung may be mixed with earth at the bottom of the pit, but it is better without; and there should always be at least a foot deep of soil above it. The bed should be raised about four inches above the level of the surrounding garden, and drills should be drawn from one end of the bed to the other about two inches deep. White sand should then be sprinkled along the drills, and the tubers should be planted three or four inches apart, according to their size, the largest kinds being, of course, planted farthest apart. The drills should then be covered level, and the beds raked quite smooth and even. As anemones are tolerably hardy, they will very seldom require any protection, but in cases of very hard frost a mat or two may be laid on the autumn-planted beds. When the plants begin to appear above ground, if the season be dry, they may be occasionally watered with rain-water; and then watering may be continued regularly as the plants approach flowering.

Another mode of cultivating the anemone, and which is said to produce flowers of extraordinary size and beauty, is to form a bed about eighteen inches deep, and to place a layer of stones, brickbats, and other drainage at the bottom, about six inches deep. The bed is then filled up with fresh loam, and the tubers planted in drills with sand, and covered as before directed, and over the whole is placed a layer of cow-dung three or four inches thick. The beds which are planted in February are watered with pond or rain-water regularly once a day, if the weather should be dry and not frosty, during the month of March, and twice a day afterwards till they flower; but those that are planted in autumn are seldom watered till the leaves appear above ground. The watering carries the manure in small quantities into the ground, and the young plants thus treated are said both to grow and to flower with extraordinary vigour. It must be observed, however, that there must be at least two inches of soil between the cow-dung and the tubers; as, if this were not the case, the tubers would be rotted.

After the anemones have done flowering, they should be kept quite dry by covering the bed with hoops and







Cultivated, double varieties of Anemone coronaria.



mats till the foliage becomes brown and withered, which is generally in about a month after the flowers have faded. The tubers should then be taken up, and laid on a shelf in an airy place to dry; the stem and leaves being cut off when they are taken up. When quite dry, the tubers are put into paper bags, and kept till the planting time the following season. The tubers may be planted every year for fifteen or twenty years in succession; but they flower best from their fifth to their twelfth year. They are sometimes raised from seed in this country; but the flowers are very far inferior to those produced by tubers imported from Holland. When, however, it is wished to raise seedlings, the seed should be sown as soon as ripe, or in August; rubbing it previously to sowing to divest it of its downy covering, or mixing it with a little sand. The seed being of the kind called caryopsides, that is, invested in its carpel, is a long time before it comes up. When, however, it does so in spring, the young plants are suffered to grow till the usual time for taking up the tubers, which will have formed, and should be dried and put in paper bags like the old ones. If the young plants form any flower-buds the first year, they should be taken off without being suffered to expand, as they would weaken the roots; but the second season they may be permitted to flower.

A. coronaria is a native of Greece, of Italy near Rome, of Asia Minor, and of the south of France, always growing in moist places. It was introduced into England before 1796, and has been a favourite garden flower ever since.

OTHER SPECIES OF ANEMONE.

A. CAROLINIANA *Wall.*; *A. TENELLA* *Pursh.*

A small and delicate plant, with small flowers, which are purplish on the outside. Introduced in 1824.

A. BIFLORA *Dec.*

Flowers yellow, white, or purplish, always produced in pairs; a native of the Levant.

A. CÆRULEA *Dec.*; *A. URALENSIS*; *A. BALDENSIS* *Lin.*; *A. FRAGIFERA* *Mun.*

Flowers blue or white, and generally produced in pairs; root fusiform. A native of Siberia; but also found in Switzerland and other mountainous parts of Europe, and in North America, on the Rocky Mountains. Introduced in 1798.

A. PARVIFLORA *Mich.*; *A. CUNEIFOLIA* *Juss.*; *A. TENELLA* *Banks*; *A. BOREALIS* *Rich.*

Flowers small, white; carpels woolly, forming a large globose head when ripe, which is more ornamental than the flower. Introduced in 1824. This species is a native of North America, between the Rocky Mountains and the Arctic Sea; and it is interesting as being the most northern plant found by Dr. Richardson in his journey with Captain Franklin in search of the North-west passage.

A. LANCIFOLIA *Pursh.*

A native of Pennsylvania and Virginia, always growing in boggy soil. The flowers are white, and always have only five sepals. The leaves are ternate, and the segments lanceolate. The carpels are oval, and the styles short and hooked. Introduced in 1823.

A. TRIFOLIA *Lin.*

A native of France, strongly resembling the preceding species, except that there are frequently six sepals, and the stamens are often more than a hundred in number.

A. VIRGINIANA *Lin.*; A. HIRSUTA *Mench.*

Flowers pale green or purplish; carpels woolly, collected into an oblong head. A native of Virginia. Introduced in 1722.

A. HUDSONIANA *Rich.*; A. MULTIFIDA *Hook.*

A native of North America, near Hudson's Bay. The leaves are so much cut as to look like fringe, and the flowers vary in colour from white to purple and bright crimson. Introduced in 1826.

A. PENNSYLVANICA *Lin.*; A. DICHOTOMA *Lin.*

Flowers large, white; anthers golden yellow. Introduced in 1766. A native of North America and also of Siberia.

GENUS VIII.

RANUNCULUS *C. Bauh.* THE RANUNCULUS, OR CROWFOOT.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of five deciduous sepals, which are not loosened at the base. Petals five, rarely eight or ten, furnished with a nectariferous scale on the inside at the base. Stamens numerous. Carpels numerous, ovate, somewhat compressed, ending in a point or horn, which is scarcely ever longer than the seed; smooth, striated, or tubercled, disposed into globose or cylindrical heads. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus are generally found in moist places; and hence they are called *Ranunculus* from *Rana*, a frog. They take their English name of Crowfoot from the shape of the leaves, which are deeply cut, so as to resemble the foot of a bird. Many of the species are English weeds; and those that are, may be considered to be among the most beautiful of the British wild flowers. All the species are poisonous from their acidity, but some are more so than others. Nearly all the species have either yellow flowers or white flowers, and all have a distinct green calyx of five sepals, united at the base. The flowers, when single, consist of five petals, numerous stamens, and numerous carpels, each of which has a little beaked stigma, without any style. The carpels are placed on the receptacle, which is drawn up into a cone-like form, to receive them; and, when the petals fall, they appear in a globose head, as may be seen in the common buttercup (*Ranunculus acris*) and other species. In the double flowers, the stamens and carpels are entirely or partially changed into petals. The leaves are generally deeply cut; and the petiole, or footstalk, always partially sheaths the stem. The seeds of all the kinds keep well, but they are a long time after they are put in the ground before they germinate, and all the species like a strong loamy soil.

1.—RANUNCULUS ASIATICUS *Lin.* THE ASIATIC OR GARDEN RANUNCULUS.

ENGRAVINGS.—Our *figs.* 1, 2, 3, in Plate 6.

SPECIFIC CHARACTER.—Leaves ternate, or biternate; segments toothed or deeply trifid. Stem erect, simple, or branched at the base.

Calyx spreading, afterwards reflexed. Spikes of carpels cylindrical. (*G. Don.*)

DESCRIPTION, &c.—The great beauty and variety of these flowers have rendered them favourite garden flowers for nearly three centuries, and perhaps longer; for they appear to have been common in Britain before 1596, though they are natives of the Levant. There are now a great number of named varieties and sub-varieties



Garden varieties of Ranunculus Asoticus



in gardens; which are all distinguished from all the other species of the genus by the compact, ball-like, appearance of the double flowers; and by the petals in all being ebevate or nearly oval and very blunt in shape, and longer than the calyx. The carpels are also smooth, and very much compressed, with a deeply hooked stigma; and the head they form is cylindrical, instead of being globose, as in the common buttercup. The leaves are deeply cut into three large segments, each of which is generally divided into three others, which are more or less cut again into narrow lobes. When well grown, each flower should have a strong straight stem from six inches to a foot high. The flowers should be bell-shaped, and at least two inches in diameter, with the petals laid regularly over each other. The petals should be of rich brilliant colours, each being clearly marked; and each petal should have an entire well-rounded edge. There are innumerable varieties, for no plant varies more when raised from seed; but they may be all traced to one of three kinds, which some botanists consider as varieties, and others as distinct species. These are *R. a. 1 vulgaris*, commonly called the Persian Ranunculus. In this variety the leaves are cut into three large lobes, and then into numerous narrow segments, which are also disposed in threes, and which are narrow and sharply pointed. The flowers are very variable in colour, and they are frequently only semi-double. The second variety, *R. a. 2 sanguineus*, has very double flowers, which are always of some very dark colour, and generally crimson or scarlet, or very dark purple or orange. The leaves are in three large lobes, which are cut into smaller segments, but the segments are not disposed in threes, and they are always obtuse at the points. This kind is called the Turban Ranunculus, and it is a native of Turkey and Syria. The third kind, *R. a. 3 tenuilobus*, which is called the Venetian or Cretan Ranunculus, is a native of Cyprus, and has always white or yellow flowers. The leaves are much cut into a number of linear lobes, none of which are much longer than the others. This Ranunculus is a tuberos-rooted plant, the tubers, which are called the claws, being what is called fascicled, and resembling a number of small carrots, growing together, and having a common centre. These tubers are purchased in the seed-shops, being imported from Holland; and the best time for planting them is the beginning of February. They may, however, also be planted in October; but it is rather remarkable, that the roots planted in autumn flower only a few days sooner than those planted in February. No Ranunculus will flower well in summer; as, though they are natives of a warm climate, they flower there in winter, or in the rainy season of the year; they therefore require coolness and moisture, though they cannot endure frost. The tubers may either be planted in the open border if the soil be leamy and rich, or in boxes; but if it be wished that they should flower particularly well, a bed may be prepared for them in the following manner:—A pit should be dug of any required length, about four feet wide, and eighteen inches deep; and at the bottom should be placed a layer of two years old rotten cowdung six or eight inches thick. The bed should then be filled in with fresh strong loamy soil, procured, if possible, from an old pasture; and it should be raised four inches above the surface of the garden, to allow for the soil sinking. The surface of the bed should then be raked even, care being taken not to press the earth too close, as the plants will not thrive unless the particles of earth be left sufficiently loose to allow the air to penetrate through them. When all is ready, drills should be made in the bed about two inches deep, and five inches apart; and a little white sand having been laid along the drills, the roots should be placed in them, with their claws downwards, about four inches asunder. The bed should then be raked over so that the roots may be covered about an inch and a half deep. The roots will be some days before they vegetate, and as at this period they are much swelled by the moisture they have imbibed from the ground, they are extremely susceptible of injury from frost, and the bed should be covered with some

loose straw or mats; but the covering should be removed as soon as the leaves begin to appear, as if it be continued too long, the tuber will become mouldy and the plants will damp off. When the plants begin to grow, gardeners generally tread the earth between the rows, and press it round the root, which may have partially risen out of the ground, as this is frequently the case. If the weather should be dry in April and May, the plants should be regularly watered during those months; as if they are suffered to become too dry after they have come up, the foliage will turn yellow, and the flowers will appear stunted: and if the weather should be very hot in May, they may be shaded from the sun during the heat of the day. This shading may be advantageously continued when the plants are in flower, particularly for the darker kinds, which are most injured by being exposed to the rays of the sun. The flowers appear in May and June, and by the end of the latter month they will have disappeared, the foliage will have turned yellow, and then brown; and when this is the case, the stems should be cut off and the roots taken up and laid on one side in an airy room to dry gradually.

When it is wished to raise new varieties from seed, some plants with semi-double flowers should be set aside for that purpose, as the flowers that are quite double have, of course, neither stamens nor pistils to produce seed. No plants should be suffered to form seed-buds but those the seed of which is wanted, as those roots which have ripened seed never produce such fine flowers afterwards as they did before. The seeds should be sown in August, in pots or boxes, and kept under shelter during winter.

2.—*RANUNCULUS ACONTIFOLIUS* *Lin.* THE PALMATE-LEAVED *RANUNCULUS*.

SYNONYME.—*R. platanifolius* *Lin.*; White Bachelor's Buttons; Fair Maid of France.

VARIETIES.—These are very numerous, but the most interesting is that with small very double flowers, called the Fair Maid of France, or White Bachelor's Buttons.

ENGRAVINGS.—*Bot. Mag.* t. 204; and our *fig. 5*, in Plate 5; both of the double-flowered variety, called the Fair Maid of France.

SPECIFIC CHARACTER.—Leaves palmate, three or five parted. Stem branched, many-flowered. Calyx smooth.

DESCRIPTION, &c.—This plant varies very much in different situations. The species is rarely seen in English gardens; but the variety called the Fair Maid of France, is one of the most common of our border flowers. It is quite hardy, and it will grow in any soil and situation, but it flourishes most under trees, where the ground is rather moist than otherwise, though it will not bear the London smoke. From its tall branching stem, the abundance of its flowers, and its large deeply cut leaves, it is very ornamental and well deserving of cultivation, wherever the air is sufficiently pure to suit it. It is a native of middle Europe, particularly Germany, the north of Italy, and Switzerland; and it was introduced before 1596. When grown in too dry a soil, this plant is frequently attacked by an insect which destroys the leaves.

3.—*RANUNCULUS ACRIS* *Lin.* THE ACRID CROWFOOT, OR COMMON BUTTERCUP.

SYNONYMES.—King Cup; Yellow Bachelor's Buttons; Upright Meadow Crowfoot.

VARIETIES.—Of these there are several, but the only one deserving of cultivation is the double-flowered kind, called the Yellow Bachelor's Buttons.

ENGRAVINGS.—*Eg. Bot.* t. 652; 2nd edit. t. 789; *Bot. Mag.* t.

215; and our *fig. 4*, in Plate 5, of the double-flowered variety, called the Yellow Bachelor's Buttons.

SPECIFIC CHARACTER.—Lower leaves three-parted, segments trifid, jagged; segments of the upper leaves linear, entire. Stem cylindrical, erect, branched, many-flowered, covered with adpressed hairs. Carpels forming a round head.

DESCRIPTION, &c.—If the buttercup were not a common weed, it would be thought a beautiful flower, from the golden hue of its glossy petals, and its very handsome leaves; and as the double-flowered variety is only found in gardens, and thus has no prejudices to contend with, it receives the admiration which would be bestowed on its progenitor, if it were equally rare. It is quite hardy, and will grow in any soil and situation where it is

sufficiently moist. Both the species and variety are natives of this country, and both are poisonous from their acridity. Though the species is called the buttercup, from the vulgar notion that the cows eating it makes the butter yellow in spring; the fact is, that no cow will touch it, and that its long stalks may be seen standing in great abundance in pastures, all the grass of which has been eaten off quite close by cows.

4.—*RANUNCULUS AMPLEXICAULIS* *Lin.* THE STEM-CLASPING *RANUNCULUS*.

SYNONYMS.—Pyreæan *Ranunculus*. Plantain-leaved Crowfoot. | SPECIFIC CHARACTER.—Leaves ovate-acuminate, stem-clasping. Stem
ENGRAVINGS.—*Bot. Mag.* t. 266; and our *fig* 3, in Plate 5. | many-flowered. Root fasciated.

DESCRIPTION, &c.—This very pretty species is known by its undivided glaucous leaves, which clasp the stem at their base; and its white flowers, which are sometimes slightly tinged with pink or purple. The plant grows erect, only branching in the flower-stem near the top, and thus taking up but little room in gardens. It is quite hardy, and will grow in any soil and situation which is not too dry. It is a native of the Alps and the Pyrenees, whence it was introduced in 1633; it flowers in April and May, and it is well deserving of cultivation, though it is very seldom seen in gardens.

5.—*RANUNCULUS GRAMINEUS* *Lin.* THE GRASS-LEAVED *RANUNCULUS*.

ENGRAVINGS.—*Bot. Mag.* t. 164; and our *fig.* 2, in Plate 5. | Stem erect, quite smooth, branching. Scales of the petals tubular.
SPECIFIC CHARACTER.—Leaves lanceolate or linear, quite entire. | Root fasciated.

DESCRIPTION, &c.—This species is known by its grass-like leaves and large flowers. It is a native of France, Spain, and Portugal, and also of England and Wales. Unlike most of the other species, it thrives most in a dry soil. It is very seldom seen in gardens, but it well deserves to be cultivated.

6.—*RANUNCULUS PARNASSIFOLIUS* *Lin.* THE PARNASSIA-LEAVED CROWFOOT.

SYNONYMS.—*R. montanus* *Tourne.*; *R. cordatus* *Guid.* | ovate-roundish; cauline ones sessile, ovate-lanceolate. Peduncles
ENGRAVINGS.—*Bot. Mag.* t. 386; and our *fig.* 6, in Plate 5. | hairy. (*G. Don.*)
SPECIFIC CHARACTER.—Radical leaves stalked, rather heart-shaped,

DESCRIPTION, &c.—A very handsome dwarf plant with large white flowers, and leathery roundish leaves, very much like those of a Cyclamen. There are certainly five or six flowers on every plant; and the petioles of the leaves are very much dilated at the base. The stems are pink, and the calyx of the flowers, and sometimes even the corolla, are tinted with the same colour. There is a variety with smaller flowers and acute leaves. This species is found wild on the Alps and the Pyrenees, in fissures of rocks near to the boundary of perpetual snow. It was introduced in 1769.

7.—*RANUNCULUS MONSPELIACUS* *Lin.* MONTPELIER CROWFOOT.

SYNONYMS.—*R. Illyricus* *Besl.*; *R. saxatilis* *Balb.*; *R. Philadelphica* *Hort.* | SPECIFIC CHARACTER.—Leaves woolly; radical ones three-lobed;
ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 94; and our *fig.* 1, in | lobes wedge-shaped and trifidly deutate; upper ones three-parted,
Plate 5. | entire lobes linear. Stem erect, few flowered; calyx reflexed. Car-
pels forming an ovate spike.

DESCRIPTION, &c.—A very showy plant with large yellow flowers, and clustered tubercled roots, differing however from those of the Asiatic *Ranunculus* by having fibres interspersed. It is a native of Montpellier, whence it was introduced about 1823; and it is quite hardy in British gardens. It should be grown in light rich soil, and it is increased by dividing the root.

OTHER SPECIES OF RANUNCULUS.

R. AQUATILIS *Lin.* THE WATER CROWFOOT.

A beautiful British aquatic, with white shining flowers, and broad floating leaves, but finely cut submerged ones. This plant has the remarkable property of being wholesome food for cattle; which is the more remarkable, as the injurious qualities of other poisonous plants are increased by growing in or near water. This species is seldom if ever cultivated in gardens.

R. CARDIOPHYLLUS *Hook., Bot. Mag. t. 2999.*

An American species, with flowers like those of the common crowfoot, and tuft of thickened roots, somewhat resembling those of the Asiatic *Ranunculus*; but with the tubers much longer and more slender. The root-leaves are heart-shaped and entire, except at the edges; while the upper ones are deeply cut. The species takes its specific name from the heart-shaped root-leaves, the word *cardiophyllus* signifying literally heart-leaved. It is a native of the north of Canada, where it is found in the limestone districts. It was introduced in 1829.

R. CRETICUS *Lin., Bot. Reg. 1432.*

A very coarse-growing species, with large golden yellow flowers, and broad hairy leaves. A native of Barbary, introduced in 1658.

R. GLACIALIS *Lin.*

Nearly allied to *R. aconitifolius*, a native of the mountainous parts of Europe, near the limits of perpetual snow. Introduced in 1775.

R. GARGANICUS *Ten.*; R. MILLEFOLIATUS *var. GRANDIFLORUS, Swt. Brit. Flow. Gard. 2nd ser. t. 248.*

A very handsome species, with large orange-yellow flowers, and very deeply cut leaves, with very slender segments. A native of Naples, whence it was introduced in 1830. It is quite hardy, and it is one of the few species of the genus that are deserving of cultivation.

R. MILLEFOLIATUS *Vahl., Bot. Mag. t. 3009.*

The leaves and habit of the plant resemble those of *R. garganicus*, but the flowers are much smaller. The plant is ornamental, from its beautifully-cut glaucous leaves. The roots are grumose, that is, thickened near the collar, so as to form a bundle or fascicle of long, narrow tubers. The species is a native of the south of England, and the north of Africa; and it was introduced in 1824.

R. MONTANUS *Willd.*; R. NIVALIS *Scop., Bot. Mag. t. 3022.*

A pretty little plant with a creeping root, or underground stem something like a rhizoma, with long fibrous roots depending from it. The species is a native of the Alps; and it was introduced in 1827. It is quite hardy in British gardens.

There are many other species, but most of them are mere weeds; and there is so great a resemblance between the flowers of even the exotic kinds, and those of the British crowfoots, which are so common in every field, and beside every lane, as to render them not worth the trouble of cultivating as garden flowers.



1. *Ranunculus Monspeliacus*.
 2. *Ranunculus gramineus*
 3. *Ranunculus amplexicaulis*.

4. *Ranunculus acris flore pleno*.
 5. *Ranunculus Aconitifolius*.
 6. *Ranunculus Parmosifolius*.

GENUS IX.

TROLLIUS *Lin.* THE GLOBE-FLOWER.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of five, ten, or fifteen coloured petals like sepals. Petals from five to twenty in number, small, linear, | flattened, unilabiate. Stamens and ovaries numerous. Capsules numerous, sessile, columnar, many-seeded. (*G. Don.*)

DESCRIPTION, &c.—Both the English and Latin names of this genus, are derived from the globular shape of the flower of the common British species *T. europæus*. The other species differ in the shape of their flowers; but they all agree in having the sepals more ornamental than the petals, which have rather the appearance of being abortive stamens, than of forming a corolla. They have all numerous stamens, and numerous carpels which are many-seeded. The leaves, like those of most of the plants belonging to the order *Ranunculaceæ*, are deeply cut, and with dilated petioles which partly sheathe the stem, which is hollow, and yields, when wounded, a slightly acrid juice. The roots differ from those of the genus *Ranunculus*, in being always fibrous and never grumose. All the species are hardy, and would grow in the open air in British gardens, but only three or four are in cultivation. The word Trollius is derived from the old German word *Trol* or *Trolhen*, signifying round. None of the species yet known appear to be at all improved by cultivation.

1.—TROLLIUS EUROPÆUS *Lin.* THE EUROPEAN OR COMMON GLOBE-FLOWER.

SYNONYME.—Lucken gowans.

ENGRAVINGS.—Eng. Bot. t. 28; 2nd edit. t. 797; and our *fig. 5*, Plate 7.

SPECIFIC CHARACTER.—Sepals fifteen, converging so as to form a globe, and so as to conceal the petals, which are equal in length to the stamens.

DESCRIPTION, &c.—This flower, notwithstanding its somewhat formal appearance, has long been a favourite in gardens. The flower-stem is erect and branched, each branch terminating in a single flower. The flowers are at first small, but they gradually become larger though without opening, the sepals, which are numerous, preserving their globe-like form till they fall off, which they do, long before the seed is ripe. The petals, which are entirely hidden by the converging sepals, are about the same length as the stamens; and indeed they look more like abortive filaments a little flattened, than petals. The stamens are very numerous, as are the carpels. The leaves appear palmate, they are so deeply cleft into five distinct lobes. This plant never improves by cultivation; and those species, which have been propagated from others kept in gardens for a great many years, produce flowers exactly similar to those which are found wild in the meadows. In gardens, the globe-flower will grow in any soil or situation, but it prefers one that is somewhat moist and shady. It is readily propagated either by seeds or by division of the root. There is a dwarf variety with the stem not branched.

2.—TROLLIUS ASIATICUS *Lin.* THE ASIATIC GLOBE-FLOWER.SYNONYME.—Helleborus aconitifolius *Ruth.*

ENGRAVING.—Bot. Mag. t. 235.

SPECIFIC CHARACTER.—Sepals from ten to fifteen, somewhat spreading. Petals ten, longer than the stamens.

DESCRIPTION, &c.—This species has large flowers, the sepals of which are of a rich dark orange, and somewhat more open than those of the common globe-flower; and the petals are longer than the stamens. The stem is seldom branched, and the flowers are produced singly; they appear in May and June. This species is a

native of Siberia, and it was introduced before 1759; but it is seldom seen in gardens, though it is very handsome from the rich orange colour of its flowers. The leaves are also larger, and of a darker green than those of the common kind. It will grow in any soil and situation; and it is increased by seed, or dividing the root.

3.—TROLLIUS AMERICANUS *Muhl.* THE AMERICAN GLOBE-FLOWER.

SYNONYMS.—*T. laxus* *Sal.*; *Gaiassena verna* *Raf.*

ENGRAVINGS.—*Bot. Mag.* t. 1988; *Lodd. Bot. Cab.* t. 56; and our *fig.* 4, in Plate 7.

SPECIFIC CHARACTER.—Sepals from five to fifteen, widely spreading. Petals from five to twenty, retuse, very much shorter than the stamens.

DESCRIPTION, &c.—This species has very little right to the name of globe-flower, as its sepals are so widely spreading as to show not only the petals, which are short, and rather broad, and which surround the stamens like an edging of vandyke trimming, but even the carpels, which are a number of green cylindrical, or ovate bodies, in the centre of the flower. The sepals are of a pale lemon-colour, and in a variety they are of a pure white, but the petals are always of a rich yellow. The stems are not branched, but several rise from one root, each bearing a flower. The leaves are of a yellowish green, tinged with pink. This species is a native of Pennsylvania and New York, where it is found chiefly in wet places, on mountains. It flowers in May and June, and it is propagated by dividing its roots, as it has not yet ripened seed in this country. The variety with white flowers was discovered by Drummond, on the Rocky Mountains.

4.—TROLLIUS CAUCASICUS *Stev.* THE CAUCASIAN GLOBE-FLOWER.

SPECIFIC CHARACTER.—Sepals ten, spreading. Petals ten, shorter than the stamens.

DESCRIPTION, &c.—This species has sepals of a bright yellow, and partially spreading, so as to show the petals which are shorter than the stamens. The species is a native of Mount Caucasus, and it was introduced in 1817.

5.—TROLLIUS PATULUS *Sal.* THE SPREADING TROLLIUS.

SYNONYME.—*Helleborus ranunculinus* *Smith.*

SPECIFIC CHARACTER.—Sepals five, widely spreading. Petals one to five, equal in length to the stamens.

DESCRIPTION, &c.—This species has no pretension to the name of globe-flower, as its sepals are nearly flat. The flowers are of a golden yellow, and the petals are equal in length to the stamens. Neither the sepals nor petals ever exceed the number five. The species is about a foot high, but there is a variety which barely rises above the ground: both the species and the variety are natives of Siberia, and were introduced in 1800.

6.—TROLLIUS LEDEBOURII *Spreng.* LEDEBOUR'S TROLLIUS.

SPECIFIC CHARACTER.—Sepals five, spreading. Petals ten or twelve, longer than the stamens. (*G. Don.*)

DESCRIPTION, &c.—A very handsome species, with tall, spreading stems, and large showy flowers, with five spreading sepals, and ten or twelve slender petals, which are much longer than the stamens round which they are placed. This species is a native of Siberia, whence it was introduced in 1829.

OTHER SPECIES OF TROLLIUS.

There are several other species which have not yet been introduced; one of which, *T. pumilus*, a native of Nepal, has very large, orange-coloured flowers, which grow on a stem only just rising above the ground.

GENUS X.

ERANTHIS *Sal.* THE WINTER ACONITE.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Involucre situated under the flower, and
 cleft into many segments. Flower sessile. Calyx of from five to
 eight coloured, petal-like sepals. Petals from six to eight, very short
 and tubular, with an unequally two-lipped mouth. Stamens very
 numerous. Ovaries five or six. Capsules on pedicels. Seeds globose,
 in a single row.

DESCRIPTION, &c.—This genus contains only two species, but one of which is known in British gardens. The name of *Eranthis* signifies “flower of the earth;” because the plants are so dwarf as to seem to repose on the earth when in flower. The principal species was formerly included in the genus *Helleborus*.

1.—ERANTHIS HYEMALIS *Sal.* THE WINTER ACONITE.

SYNONYME.—*Helleborus hyemalis* *Lin.*; *H. monanthus* *Manch.*; *Aconitum unifolium* *Bauh.*; Winter Wolf's-bane *Parkinson.* | ENGRAVING.—*Bot. Mag.* t. 3, and our *fig.* 8 in Plate 7.
 SPECIFIC CHARACTER.—Sepals from six to eight, oblong. (*G. Don.*)

DESCRIPTION, &c.—If any one will gather a winter aconite, the flowers of which are just new (Feb. 1) beginning to expand in the gardens, it will, on examination, be found to have a broad, green involucre, consisting of three deeply-cut leaves growing together. On this leafy bed the flower reposes, its outer covering, or calyx, being composed of six oblong, bright yellow sepals, which are delicately marked with parallel lines. At the base of the sepals, and almost hidden in the cup of the flower, lie six or seven little tubular petals, or nectaries, as they were called by Linnæus, unequal at the mouth, and resembling cornets of paper, but of the same colour as the sepals. There are thirty or forty stamens, with two-celled, adnate anthers; that is, with the filament or stalk firmly fixed to the back of the anther. In the centre of the stamens are five or six oblong carpels, each growing on a short foot-stalk, and each becoming narrower in the upper part, and ending in a gently-curved stigma. When the carpels are ripe, each will be found to contain numerous round seeds, disposed in a single row. The leaves are deeply cut, and the plant has a creeping, underground, tuberosus stem, or rhizoma, which sends up shoots from every bud. Thus, when it is wished to propagate the winter aconite, the suckers must be taken with a portion of the tuberosus underground stem attached to each, as without that they will not grow. From the underground stem sending up shoots from every bud, several winter aconites generally appear above ground at a short distance from each other; and the flower appears yellow as soon as it breaks through the ground, from the calyx or outer covering of the flower-bud being coloured. The same peculiarity of the creeping underground stem renders it difficult to clear a garden of this plant when it is wished to remove it, as the root must be traced through all its length, and every particle of it taken up, or fresh shoots will continue to spring up. The plant, however, is frequently killed entirely by frost or damp, as it is a native of mountainous places in Lombardy, the north of Italy, and Austria. It, therefore, requires an open, dry situation, exposed to the sun; and though it flowers early in February, or even January, it will not bear much cold. In a warm situation its flowers are much larger and of a brighter colour than in a cold one; and it looks remarkably well in pots or boxes as a window plant. The underground stem should be taken up, when it is to be divided or transplanted, in summer; that is from June, as soon as the leaves have disappeared, to September, but not later, as towards the end of that month

the tuberous stem will begin to put out its fibrous roots. When planted, three or more tubers should be put into the ground to make a cluster, as otherwise the flowers will be too far apart to look well. Alternate patches of winter aconites and snowdrops have a very pretty effect as a border in early spring. The winter aconite was introduced before 1596.

2.—*ERANTHIS SIBIRICUS* Dec. THE SIBERIAN WINTER ACONITE.

SPECIFIC CHARACTER.—Sepals five, oval. (*G. Don.*)

DESCRIPTION, &c.—Though this little plant closely resembles the preceding species in its general appearance, it differs materially in its habits, as it is a native of Siberia, where it is found in moist places. It is thus much more hardy than the common kind; and it is much better adapted for London gardens, which are generally damp and close. This species does not flower till March or April. It was introduced in 1826; but it is very rarely met with.

GENUS XI.

HELLEBORUS Adan. THE HELLEBORE.

Lin. Syst. POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx permanent, of five roundish, obtuse, large sepals, which are generally green. Petals from eight to ten, very short, tubular, narrowed in the lower part, nectariferous. Stamens thirty to sixty. Ovaries three to ten. Stigmas terminal, orbicular. Capsules coriaceous. Seeds oval, disposed in two rows, on a linear, double-notched receptacle. (*G. Don.*)

DESCRIPTION, &c.—The species of this genus are perennial plants, with a very disagreeable smell, and of a leathery texture. They are furnished with a creeping underground stem, less fleshy than that of the winter aconite, but in other respects of the same nature; and they have an ornamental calyx, as is the case with that plant. The species vary considerably in their habits, but all are poisonous when taken to excess, though in small quantities they are found useful. The name of *Helleborus* alludes to their poisonous qualities, as it signifies “deadly food.” The fibrous roots only are used in medicine.

1.—*HELLEBORUS NIGER* Lin. THE BLACK HELLEBORE, OR CHRISTMAS ROSE.

ENGRAVINGS.—Bot. Mag. t. 8; Swt. Brit. Flow. Gard. 2d Ser. t. 186; and our *fig.* 1 in Plate 7.

SPECIFIC CHARACTER.—Radical leaves pedate, quite smooth; scape leafless, bearing one or two flowers and bracteas. (*G. Don.*)

DESCRIPTION, &c.—Every one knows that first harbinger of spring, the Christmas rose, though but few people are aware how very well it looks as a window plant. In the open air, the delicate texture of its flowers is often injured by the frost, or melting snow, which so often covers the ground at the dreary season when it appears; but when kept in a sheltered place, such as in a room or in a greenhouse, it becomes a very ornamental plant. The calyx of the Christmas rose consists of five large white sepals, which are delicately tinged with pink. The petals are small and tubular, like those of the winter aconite; but they are even less ornamental than in that plant, as they are of a dingy green. They are, however, but little seen, as they are nearly hidden by the numerous stamens which surround the eight or ten carpels that grow erect and close together in the centre of the flower. The involucre consists of two large bracts, which shade the flower in the bud, so as to resemble a green





1. *Helleborus niger* — 2. *Helleborus lividus* — 3. *Helleborus odorus* — 4. *Trollius Americanus*
5. *Trollius Europaeus* — 6. *Isopyrum grandiflorum* — 7. *Copias trifolia* — 8. *Ceranthus hyemalis*.



calyx. The leaves are very deeply cut, and the segments are disposed in a palmate manner, so as to look like separate leaflets. The species takes its name from the black bark of its underground stem. It is a native of the Apennines, whence it was introduced before 1596. It will grow in any soil or situation; but it prefers a dry soil, and a situation open to the sun. It is propagated by dividing the underground stem in summer, after the leaves have decayed. There are three kinds of Christmas rose: the species, which has broad leaves, and is the most common; a variety with narrow leaves, which is sometimes called *Helleborus niger angustifolius*; and the third, which is figured in Sweet's British Flower Garden, and called there *H. n. vernalis*, and which does not flower till February or March.

2.—HELLEBORUS VIRIDIS *Lin.* THE GREEN HELLEBORE

ENGRAVINGS.—Eng. Bot. t. 200; 2d ed. t. 800.

SPECIFIC CHARACTER.—Radical leaves very smooth, cauline ones

almost sessile, palmate; peduncles generally bifid; sepals roundish, ovate, green. (*G. Don.*)

DESCRIPTION, &c.—This plant differs considerably from the Christmas rose, not only in the colour of its flowers, which are green, but in its leafy stems, in the slender lobes of its leaves, which are sharply serrated, and in its carpels, of which there are only three, adhering together—while in the Christmas rose the flower-stem is devoid of leaves, except the involucre bracts, and there are eight or ten carpels which are quite distinct. The green hellebore is rather ornamental, notwithstanding the colour of its flowers. This species is a native of England, and of various parts of France, Italy, and Germany, where it is generally found in woods and thickets, growing in a chalky soil. It is often cultivated in gardens, and it looks exceedingly well in shrubberies, as it grows from a foot and a half to two feet high; but it has a disagreeable smell like that of elder-flowers. It is propagated by seeds, or by division of the root.

3.—HELLEBORUS ODORUS *Walds. et Kit.* THE SWEET-SCENTED HELLEBORE.

ENGRAVINGS.—Bot. Reg. t. 1643; and our *fig. 3* in Plate 7.

SPECIFIC CHARACTER.—Radical leaves palmate, pubescent on the

under surface; segments oblong, undivided, quite entire at the base, but serrated at the apex. Stem bifid. Sepals ovate-oblong, acutish, green.

DESCRIPTION, &c.—This species bears considerable resemblance to *H. viridis*, but the flowers are larger and handsomer; the leaves are broad and glossy, and the plant has an agreeable fragrance. It is a native of Hungary, whence it was introduced about 1830. It is quite hardy, and appears to grow freely in any soil; but it is said to thrive best in peat.

4.—HELLEBORUS PURPURASCENS *Walds. et Kit.* THE PURPLISH HELLEBORE, OR BEAR'S-FOOT.

ENGRAVING.—Swi. Brit. Flow. Gard., 2d Ser. t. 142.

SPECIFIC CHARACTER.—Radical leaves pubescent on the under surface, palmate, with the segments cuneated at the base, and from

three to five-lobed at the apex; stem two-flowered; floral leaves almost sessile; sepals roundish, coloured. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Hungary, and it is said there to have handsome purple flowers: those of the specimen figured in Sweet are, however, of so dingy a hue as to be not at all ornamental. The plant was introduced in 1817; but it is very rarely to be met with. There is a variety, *H. p. Bocconi*, which is sometimes called a distinct species; but the principal difference consists in the stem being longer than the leaves.

5.—HELLEBORUS ATRO-RUBENS *Walds. et Kit.* THE DARK PURPLE HELLEBORE.

SPECIFIC CHARACTER.—Radical leaves very smooth, pedate, paler | somewhat angular, bifidly branched; sepals roundish, coloured. (*G*
and shining underneath; cauline leaves almost sessile, palmate. Stem | *Don.*)

DESCRIPTION, &c.—This species is said to have rich dark purple flowers, becoming almost black at the margins of the sepals. It is a native of Hungary, where it grows in woods, and whence it was introduced in 1820. It is probably only a variety of the preceding species.

6.—HELLEBORUS DUMETORUM *Walds. et Kit.* THE THICKET HELLEBORE.

ENGRAVING.—Swt. Brit. Flow. Gard., t. 109.

DESCRIPTION, &c.—A dwarf plant with green flowers, which have no pretensions to beauty, and which differ from the other species in having their sepals far apart. It flowers in March. The species is a native of Hungary, whence it was introduced in 1817; and it is propagated by dividing the root.

7.—HELLEBORUS FŒTIDUS *Lin.* THE FETID HELLEBORE.

ENGRAVINGS.—Eng. Bot. t. 613.

SPECIFIC CHARACTER.—Stem many-flowered, leafy; leaves pedate, very smooth; segments oblong-linear. (*G. Don.*)

DESCRIPTION, &c.—An evergreen plant with green flowers, which never fully expand, but remain in a globular form, with a strong purple margin to the sepals. The petioles, or leaf-stalks, are dilated so as to resemble leaves, and the real leaves appear like little fans stuck on the tip. It is a native of England, and grows abundantly in chalky soils, in thickets and waste places.

8.—HELLEBORUS LIVIDUS *Ait.* THE LIVID HELLEBORE.

SYNONYMES.—*H. argutifolius Viv.*; *H. trifolius Mill.*
ENGRAVINGS.—Bot. Mag. t. 72; and our *fig. 2* in Plate 7.

SPECIFIC CHARACTER.—Stem many-flowered, leafy; leaves ternate,
very smooth, glaucous on the under surface; segments ovate, lan-
ceolate. (*G. Don.*)

DESCRIPTION, &c.—This is an evergreen plant with pinkish flowers, which appear in February, and which are more ornamental than those of any other species, except the Christmas rose. The leaves are in three leaflets, which are serrated on the margin, and those of the stem have sometimes a dilated leaf-like petiole, as in *H. fœtidus*. The species is a native of Corsica, whence it was introduced in 1710; and it requires a little protection during severe winters. It is also difficult to propagate, as it has not the creeping underground stem, common to the genus, and it rarely ripens seeds. There is a variety which has the margins of the leaflets entire.

OTHER SPECIES OF HELLEBORUS.

The most remarkable is *H. orientalis*, the Hellebore of the ancients, which has not yet been introduced.

GENUS XII.

COPTIS *Sal.* THE COPTIS, OR AMERICAN HELLEBORE.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of five or six petal-like, deciduous sepals. Petals small, cucullate. Stamens from twenty to twenty-five. Capsules from six to ten, on long stalks, somewhat membranous four—six-seeded, pointed with the style, stellately disposed. (*G. Don.*)

DESCRIPTION, &c.—There are only two species in this genus, which has been separated from *Helleborus* on account of the capsules being membranaceous, and on foot-stalks, and the calyx falling off soon after its expansion; while in all the species of *Hellebore* the capsules are leathery and without foot-stalks, and the sepals remain on till the seeds are nearly ripe. The name of *Coptis* signifies cut, in allusion to the numerous divisions of the leaves.

1.—COPTIS TRIFOLIA *Sal.* THE THREE-LEAVED COPTIS.SYNONYMES.—*Helleborus trifoliatius Lin.*; *Ancumone Greenlandica Oed.*ENGRAVINGS.—Lodd. Bot. Cab. t. 173; and our *fig. 7* in Plate 7.

DESCRIPTION, &c.—A pretty little plant with white flowers, and yellow roots. It is called *Tissavoyaune-jaune* by the French in Canada, of which country it is a native, as well as of other parts of North America, and Iceland, Norway, Siberia, and Kamtschatka. The leaves and stalks are used to dye yellow. It was introduced in 1782; and it flowers from April to July. It should be grown in peat, and it is increased by dividing the roots. After the sepals drop, the capsules fall back so as to form a kind of star.

2.—COPTIS ASPLENIFOLIA *Sal.* THE FERN-LEAVED COPTIS.SYNONYME.—*Thalictrum japonicum Thunb.*SPECIFIC CHARACTER.—Leaves biternate; leaflets rather pinnatifid, very acutely serrated; scape two-flowered. (*G. Don.*)

DESCRIPTION, &c.—The leaves have very much the appearance of that elegant fern called spleenwort. The flowers are white, and longer than those of the preceding species. It is found wild in California, and also in Japan. It was introduced in 1827.

GENUS XIII.

ISOPYRUM *Lin.* THE ISOPYRUM.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of five petal-like, deciduous sepals. Petals five, equal, tubular, two-lipped, with the outer lip bifid. Stamens from fifteen to twenty. Ovaries from two to twenty. Style longitudoinally stigmatose on the inside. Capsules sessile, one-celled, oblong, compressed, membranous, many-seeded. Seeds minute, dotted. (*G. Don.*)

DESCRIPTION, &c.—The name of *Isopyrum* signifies, equal to wheat; but why it has been applied to the present genus it is hard to say. The species are pretty little herbaceous plants, with white flowers and much-divided leaves.

1.—ISOPYRUM GRANDIFLORUM *Fisch.* THE LARGE-FLOWERED ISOPYRUM.

ENGRAVING.—Our *fig.* 6 in Plate 7.

SPECIFIC CHARACTER.—Capsules five; leaves biternate, leaflets

wedge-shaped; three-toothed at the apex, or divided into three linear-oblong lobes. Petals emarginate; sub-tubular at the base.

DESCRIPTION, &c.—This pretty little plant grows in tufts on several of the mountains in Nepaul, where it flowers in July. The stem is extremely short, and it divides just above the ground into several short branches; the stem and branches being both hidden by a mass of the dry petioles of former years, which have the appearance of a cluster of dry brown bracts. The leaves are in threes, each leaflet being again divided into three smaller ones. The flowers have five white sepals, and five small petals, which are notched at the tip, and somewhat tubular at the base. The stamens are numerous, and there are five oblong ovaries, which are five or six-seeded. Professor Royle tells us that the flowers are sometimes four times as large as those represented in Plate 7. The species is quite hardy in British gardens, and it will thrive in any light garden soil. It is increased by dividing the roots. It was introduced in 1804; and though it is seldom met with, it is well deserving of cultivation.

2.—ISOPYRUM MICROPHYLLUM *Royle.* THE SMALL-LEAVED ISOPYRUM.

SPECIFIC CHARACTER.—Capsules five. Leaves ternate. Leaflets very finely cut into numerous segments, which are somewhat wedge-

shaped at the base, and trifid at the apex. Petals emarginate. Sepals oblong-ovate.

DESCRIPTION, &c.—“The root of this species,” says Dr. Royle, “is perennial, long, cylindrical, and stem-like, insinuating itself between the crevices of the rocks: at the apex it divides, like the former species, into several little tufts of leaves, from the centre of which rises the very simple stem, and single-flowered scape. The petioles are long, dilated, membranous, or as if winged at the base; and the leaves are most delicately divided, being supradecomposed, with ternate subdivisions.” (*Royle, Illust. Bot. of the Himalayas.*) The species is very pretty, and very well adapted for rock-work. It will grow in any light soil, but it prefers one that is poor and stony.

3.—ISOPYRUM THALICTROIDES *Lin.* THE THALICTRUM-LIKE ISOPYRUM.

SYNONYMS.—*I. aquilegioides Jacq.*; *I. thalictrifolium Sal.*; *Helleborus thalictroides Lam.*

SPECIFIC CHARACTER.—Capsules from one to three, ovate, some-

what compressed, awned with the elongated styles. Sepals blunt. Root creeping, fasciated, grumose. Leaf-stalks dilated at the base into membranous auricles.

DESCRIPTION, &c.—The flowers of this species are small and white, and the leaves much longer than those of the other kinds. It is a native of the Pyrenees, the Apennines, and other mountains in central Europe. It was introduced in 1759, and will grow in any common garden soil, but it is not worth cultivating.

GENUS XIV.

AQUILEGIA *Tourn.* THE COLUMBINE.

Lin. Syst. POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of five-coloured, petal-like, deciduous sepals. Petals five, gaping above, two-lipped, outer lip large, flat; inner lip very small, each petal drawn out into a hollow spur, which is

callous at the apex, and protruding between the sepals. Capsules five, erect, many-seeded, pointed with the styles. (*G. Don.*)

DESCRIPTION, &c.—The Columbine is so common a flower, that few people notice the peculiarities of its construction. The sepals and petals appear of equal importance, and certainly of equal beauty; but yet they

are perfectly distinct from each other, and they are so different in form as to be easily distinguishable. The sepals are shaped like an oval leaf, tapering to a point, and are attached by a kind of stalk to the disk of the flower; while the petals, which are horn-shaped, pass between them, being slightly attached to the disk by part of the mouth of the horn, and having the spur raised far above it; so that the spurs of the five petals form a kind of crown round the flower-stalk. The name of *Aquilegia* is derived from *Aquila*, an eagle, and alludes to the bird-like appearance of a petal when detached, with two of the sepals adhering to it, which resemble wings. The English word Columbine is derived from the Latin word *Columba*, a dove, and alludes to the same appearance. There are numerous stamens, and those of the inner row are abortive, being without anthers, and growing together so as to form a membranous cover to the five carpels or incipient seed-vessels in the centre of the flower. The sepals and petals fall off, and the seed-vessels become brown and leathery, opening at the top to discharge the numerous seeds. These seed-vessels have only one valve, and are of the kind called follicles. The leaves, which spring from the root, are bi-ternate, with bluntish segments, which are somewhat toothed, but those on the stem are divided into linear lobes. The stem is tall and erect, and it bears numerous flowers.

1.—AQUILEGIA VULGARIS *Lin.* THE COMMON COLUMBINE.

ENGRAVINGS.—Eng. Bot. t. 297; 2d edit. t. 770.

VARIETIES.—These are numerous, as regards the colour and doubleness of the flowers. The following are the most distinct. A. v. 2 *alpina* *Huds.* Stem usually one-flowered. Spurs less curved than in the species. Found at Matlock. A. v. 3 *corniculata* *Dec.* Flower double; petals spurred; spurs drawn downwards. A. v. 4

inversa *Dec.* Flower double; spurs inverted. A. v. 5 *stellata* *Dec.* Flower double; petals flat and spurless, coloured. A. v. 6 *degener* *Dec.* Flower double; sepals and petals flat and spurless, green.

SPECIFIC CHARACTER.—Spurs incurved; capsules villous; stem leafy, many-flowered. Style not longer than the stamens.

DESCRIPTION, &c.—This species is a native of Britain, and it is generally found growing in sandy loam, and flowering from May to July. It grows from one foot to two feet high, according to the depth of the soil, and the flowers are of a deep livid purple, or very dark blue, varying, however, occasionally to pinkish or almost white, particularly in the double flowers. Some of the varieties are streaked, and some spotted, or blotched; but these are always pink and white. In the species and all the varieties, both sepals and petals are of the same colour. The leaves are bi-ternate, and of a bluish green. The Columbine is not only found wild in Britain, but in most parts of Europe; and in some parts of Asia, particularly in Japan. It is always found in meadows or thickets, and never on dry hills. It is of the easiest culture, only requiring not to be kept too dry; and it is propagated either by seeds or by division of the root. It does not increase rapidly, and seldom requires taking up to reduce in size; the young plants which appear in a border where columbines grow, are generally seedlings and not suckers; and they may be prevented from appearing by cutting off the flowers as soon as they begin to fade, and thus preventing the ripening of the seeds. Each flower has five or more carpels, or follicles, as they are called when ripe, each of which contains numerous seeds. When seedlings are to be raised, the seeds should be sown as soon as ripe.

2.—AQUILEGIA ATRO-PURPUREA *Willd.* THE BROWNISH-PURPLE COLUMBINE.

SYNONYMS.—*A. Davurica* *Dec.*; *A. Dahurica* *Link.*; *A. viridiflora* var. *Hart.*

VARIETIES.—A. a. 1 *brevistyla* *Willd.* Style not so long as the stamens; A. a. 2 *Dahurica* *Dec.* Styles protruding beyond the rest

of the flower, leaves smooth; A. a. 3 *Fisheriana* *Dec.* Styles projecting, leaves dewy.

ENGRAVINGS.—Bot. Reg. t. 922; and our *fig. 8* in Plate 3.

SPECIFIC CHARACTER.—Spurs erect, straight, equal to the limb. Styles sometimes exserted. Sepals longer and paler than the petals.

DESCRIPTION, &c.—A beautiful little plant, which grows freely in any light soil, and flowers from April till June. It differs from the common Columbine in the spurs being erect, and quite straight; and in the colour,

which is a rich brownish purple, with a dark morone tinge very different from the livid hue of the common wild species. It is also a smaller plant, scarcely ever exceeding a foot in height. It is a native of Siberia, whence it was introduced by seeds about 1824. It is quite hardy, and may be propagated either by seeds sown as soon as ripe, or by division of the roots in autumn.

3.—AQUILEGIA ALPINA *Lin.* THE ALPINE COLUMBINE.

VARIETY.—A. a. 2 grandiflora, *Dec.* Flowers very large.
ENGRAVINGS.—Lodd. Bot. Cab. t. 657; Swt. Brit. Flow. Gard. t. 218.

SPECIFIC CHARACTER.—Spurs erect, nearly straight; lower limb

emarginate, upper limb very long. Sepals roundish, with a tip at the apex, and a long, very narrow footstalk. Leaves biternate, leaflets lobed, and much divided.

DESCRIPTION, &c.—This showy Columbine has very large flowers, which are of a deep Mazarine blue, with the exception of the lower lip of the petals, and the tip of the large roundish sepals, both of which are whitish. The leaves are biternate; and the leaflets, which are small, are very much cut. The carpels have very short styles. This species is a native of Switzerland, whence it was introduced in 1731; but though it has been so long in the country, it is very seldom seen, probably because it is rather difficult to cultivate. It likes an open situation, and a loamy soil.

4.—AQUILEGIA GARNIERIANA *Swt.* THE MISSES GARNIER'S COLUMBINE.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d Ser. t. 103; and our *fig.* 6 in Plate 8.

SPECIFIC CHARACTER.—Sepals unequal in size, broadly ovate, hairy on the outside. Petals five, lengthened into a long spur at the base, which

is involute, and terminates in a glossy knob, two-lipped, inner lip almost obsolete, and terminating in a hollow callosity; outer lip erect, and spatulate. Stamens numerous, unequal in length; filaments smooth, connected in sets at the base.

DESCRIPTION, &c.—This very beautiful Columbine is a hybrid, between *A. sibirica* and *A. vulgaris*, which was raised by the Misses Garnier of Wickham in Hampshire; where these ladies have one of the most perfect gardens I have ever seen, as regards its flowers. Many fine gardens have their effect destroyed by withered roses and other flowers being suffered to remain on after their beauty is quite gone; but the garden of the Misses Garnier was perfect in this respect. Not a single withered flower was to be found; and as every plant was so skilfully managed as to be covered with flowers in its proper season, the whole reminded me of the trees loaded with gems in the Arabian tales, or the enchanted gardens of Armida.

In *Aquilegia Garnieriana* the sepals are oval, with a short footstalk, and they are of a rich purple, tinged with green at the tip. The petals are horn-shaped, with a purple tube, and a pale yellow mouth. The plant is quite hardy, and will grow in any common garden soil. It is propagated by division of the root.

5.—AQUILEGIA SIBIRICA *Lam.* THE SIBERIAN COLUMBINE.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d Ser. t. 90; and our *fig.* 5 in Plate 8.

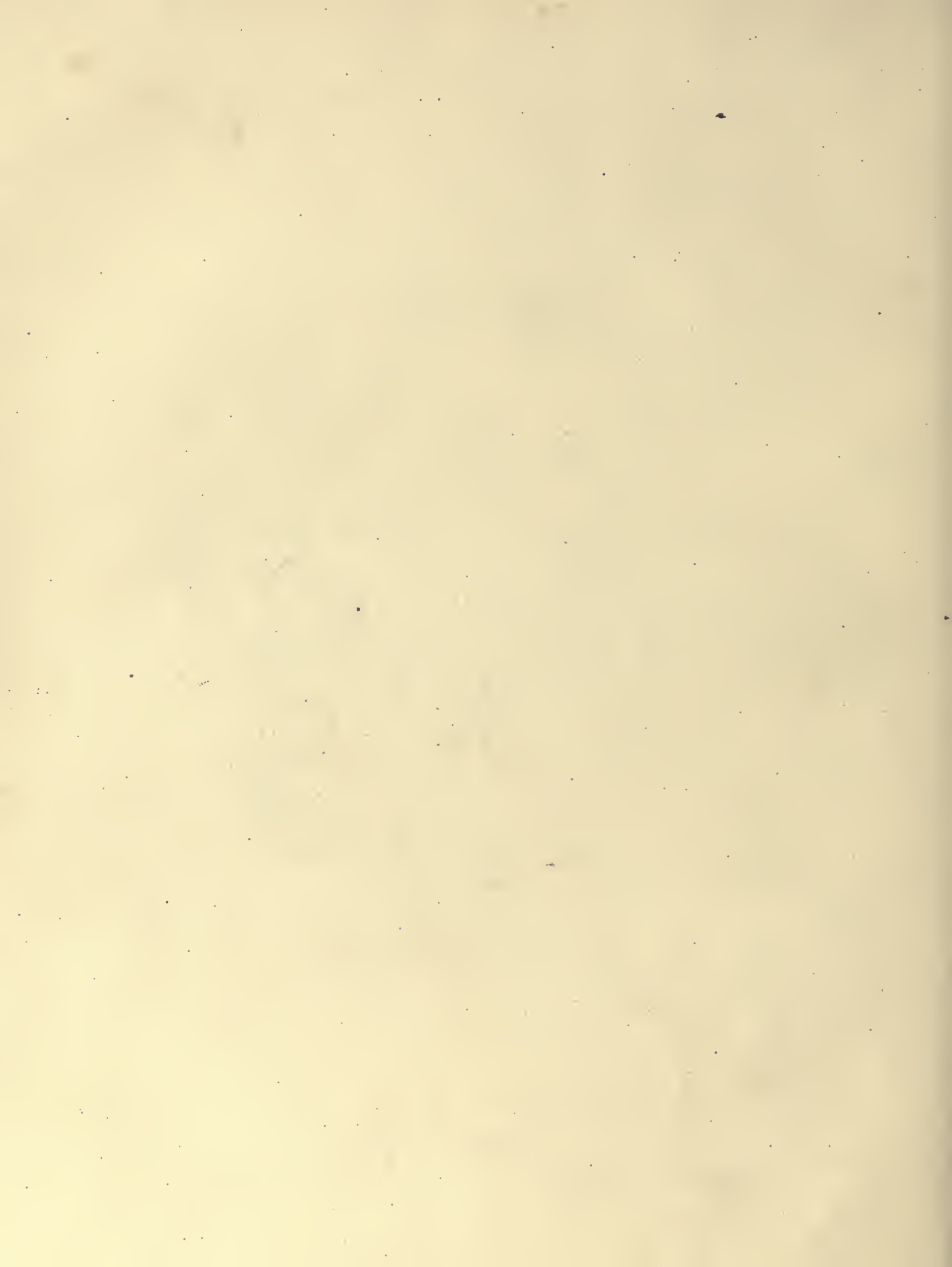
SPECIFIC CHARACTER.—Spurs of the petals involute at the apex, much longer than the lip. Sepals elliptic-oblong, obtuse. Capsules

very smooth. Stem many-flowered. Root leaves biternate, stem-leaves ternate; leaflets sub-trilobed, obtusely toothed. Petioles slightly hairy.

DESCRIPTION, &c.—This species has flowers of an intensely bright blue, and both the sepals and the petals are tipped with white. The sepals are narrow and oblong; and the petals have a very long spur, curiously curled round at the tip. The anthers are of a bright golden yellow, and the leaves broader and less glaucous than in most of the other species. The species is quite hardy; but it flowers best in loamy soil mixed with sand, and enriched with vegetable mould. It may be propagated by division of the roots, or by seed, which it produces freely.



1. *Aquilegia Skinneri*. — 2. *Aquilegia glandulosa*. — 3. *Aquilegia glauca*.
 4. *Aquilegia fragrans*. — 5. *Aquilegia Sibirica*. — 6. *Aquilegia Germanica*.
 7. *Aquilegia Canadensis*. — 8. *Aquilegia atropurpurea*.



6.—AQUILEGIA GLANDULOSA, *Fisch.* THE GLANDULOUS OR RUSSIAN COLUMBINE.

VARIETIES.—*A. g.* 1 discolor, *Dec.* Flowers two-coloured.—*A. g.* 2 concolor, *Dec.* Flowers one-coloured.

ENGRAVINGS.—*Swt. Brit. Flew. Gard.* 2d ser. t. 55; *Botanist*, t. 219; and our *fig.* 2 in Plate 8.

SPECIFIC CHARACTER.—Spurs of the petals much shorter than the limb. Sepals very broad, stalked. Carpels and stem covered with glandulous hairs.

DESCRIPTION, &c.—The flowers of this Columbine far exceed in size those of any of the other species, as they are frequently found to measure four inches across. The sepals are very large, nearly oval, and furnished with a long footstalk; they are of a very dark blue, without the mixture of any other colour. The petals have a very short spur, and a very large upper lip, which is white, the tubular part being of a deep blue. The leaves are biternate, the leaflets having numerous lobes. This plant is apt to be much injured by wet; it should therefore be planted in a dry border of light soil. It is best propagated by seeds, which should be sown as soon as they are ripe. The young plants may be left in the seed-bed till the second spring, when about February or March they should be removed to a bed prepared for them of sandy loam, enriched with leaf-mould, in which they should be planted a foot apart. Thus treated, they will flower superbly in May or June, generally in the latter month; and will form one of the most splendid border-flowers that can be imagined. There is a variety with the flowers white.

7.—AQUILEGIA GLAUCA, *Lindl.* THE GLAUCOUS COLUMBINE.

ENGRAVINGS.—*Bot. Reg.* 1840, t. 46; and our *fig.* 3 in Plate 8.

SPECIFIC CHARACTER.—Spurs short, erect, straight; limb large, truncate; sepals ovate-lanceolate, smaller than the limb of the petals.

Stamens and styles not exerted. Ovaries shaggy, with glandular hairs; styles long, involute. Leaves small, very glaucous.

DESCRIPTION, &c.—This species has large and very fragrant flowers, which are cream-coloured, with a slight tinge of pink on the spurs. The stems are red, and the leaves sea-green. The species is a native of the Himalayas, and it was introduced by seeds in 1839. Its stem grows about two feet high, and its flowers appear in May and June. It will grow in any good garden-soil, as it is quite hardy; and it is propagated by seeds, or by division of the root in autumn, or in spring if not later than the middle of March. As this Columbine is not mentioned by *Drs. Royle and Wallich*, *Dr. Lindley* observes that it may possibly "be considered by these excellent botanists as a variety of their *A. pubiflora*;" but *Dr. Lindley* himself thinks it quite distinct from that species, as it has "larger and sweet-scented straw-coloured flowers," nearly smooth stems, very glaucous leaves, and shaggy seed-vessels.

8.—AQUILEGIA FRAGRANS, *Benth.* THE FRAGRANT COLUMBINE.

ENGRAVINGS.—*Botanist*, t. 181; and our *fig.* 4 in Plate 8.

SPECIFIC CHARACTER.—Stem leafy. Segments of the lower leaves

trifid. Flowers numerous, somewhat downy. Sepals ovate-lanceolate, acute. Spur of the petals incurved, much shorter than the limb.

DESCRIPTION, &c.—This very beautiful Indian Columbine is very nearly allied to *A. glauca*, but it differs from that species in having the spurs of the petals much shorter, and strongly curved inwards; while those of *A. glauca* stand erect, and are quite straight. The leaves of *A. fragrans* are also not at all glaucous. The flower is very large, and delightfully fragrant. The species was introduced in 1840, and as it is a native of the north of India, it appears likely to prove quite hardy in our gardens. It is propagated in the usual way, by seeds or division of the root.

9.—AQUILEGIA HYBRIDA, *Sims.* THE HYBRID COLUMBINE.

SYNONYMES.—*A. vulgaris*, *var. speciosa*, *Ait.*; *A. bicolor*, *Ehrh.*; *A. sibirica*, *Don.*

ENGRAVING.—*Bot. Mag.* 1221.

SPECIFIC CHARACTER.—Spurs of the petals incurved, much longer than the limb. Leaves slightly pubescent.

DESCRIPTION, &c.—This beautiful hybrid is said to have been raised between *A. vulgaris* and *A. canadensis*. The flowers are exceedingly handsome, the sepals being of the dark, livid colour of the common Columbine, and the petals with a clear white limb, deepening into dark blue in the spur. The leaves have not the purplish hue of those of *A. canadensis*, and they are much more pubescent, feeling very soft on both sides. This kind of Columbine was first seen in British gardens in 1809, but whether it be a true hybrid or a species, appears very doubtful. It is generally propagated by division of the root, but it is said also to come true from seed.

10.—AQUILEGIA CANADENSIS, *Linn.* THE CANADIAN COLUMBINE.

SYNONYMES.—*A. pumila*, *Corn.*; *A. præcox*, *Moris.*; The early red Columbine of Virginia, *Park.*

ENGRAVINGS.—*Bot. Mag.* t. 246; and our *fig. 7* in Plate 8.

SPECIFIC CHARACTER.—Spurs of the petals erect, straight, much longer than the limb, stamens considerably exerted, follicles smooth.

DESCRIPTION, &c.—This very curious Columbine was introduced from Virginia about 1640, by Mr. John Tradescant, son of the gardener of Charles I. The flowers are scarlet and orange, and there are two bracts on each pedicel, which grow so near the flower as to have almost the appearance of a distinct green calyx, and is said in its native country never to be above nine inches high, but in this country it generally attains the same size as the common Columbine. It is quite hardy in British gardens, and it may be easily propagated by dividing its roots in autumn or spring; or it may be raised from seeds, which it ripens in great abundance; but in the latter case, the seeds should be sown as soon as ripe, as otherwise they will be a long time before they come up.

11.—AQUILEGIA SKINNERII, *Hook.* MR. SKINNER'S COLUMBINE.

SYNONYMES.—*Aquilegia mexicana*, *Dec.*; The Mexican Columbine.

ENGRAVINGS.—*Bot. Mag.* t. 3919; and our *fig. 1* in Plate 8.

SPECIFIC CHARACTER.—The whole plant is glabrous. Spurs straight,

spreading, and five times longer than the limb. Sepals lanceolate, twice as long as the limb of the petals; stamens very long, exerted; styles three, rarely five.

DESCRIPTION, &c.—The flowers of this species are easily distinguished by the great length of their spurs, which are frequently nearly two inches long; and by their stamens, which are very numerous, and much protruded. There are generally only three styles. The flowers are drooping, but when the seeds begin to swell, the flower-stalks which bear them become quite erect, as in the other species. The follicles of *A. Skinnerii* have broad, membranous, crisped wings. This magnificent Columbine was sent to Woburn Abbey in 1840, by G. H. Skinner, Esq., from Guatemala; so that its native place is much farther South than that of any other species yet introduced. Sir W. J. Hooker informs us that *A. Skinnerii* "proves to be perfectly hardy, having survived the severe winters of 1840-41 in the open ground at Woburn, and flowering in great beauty during the summer of 1841."

OTHER SPECIES OF AQUILEGIA.

These are numerous, but the most beautiful is said to be the *A. cærulea* of Dr. Torrey, described as *A. macrantha* by Drs. Hooker and Arnott, in Beechey's Voyage; which does not appear to have been yet introduced. *A. formosa* is also a very handsome species, nearly allied to *A. canadensis*.

GENUS XV.
DELPHINIUM, *Tourn.* THE LARKSPUR.

Lin. Syst. POLYANDRIA TRIGYNIA.

GENERIC CHARACTER.—Calyx deciduous, petal-like, irregular, with the upper sepal drawn out below into a spur. Petals four, two upper ones drawn out at the base into appendages within the spur. (*G. Don.*)

DESCRIPTION, &c.—The flower of the Larkspur exhibits some of these strange anomalies in its construction which are so often found in plants belonging to the order Ranunculaceæ. The calyx and the corolla are confounded together; or rather, the calyx is the most ornamental part, while the petals are so small and so obscurely placed as to appear of little consequence. The plants are generally tall and showy-looking, with the flowers disposed in a long terminal raceme. The leaves are generally deeply cut, particularly the lower ones. The species are annual and perennial plants, natives of temperate climates, and all quite hardy in British gardens. The flowers are always blue, red, or purple, or of some shade or combination of these colours mixed with white, but they are never yellow. The name of Delphinium, which is derived from the Greek word for Dolphin, and the English name of Larkspur, both allude to the shape of the flower, which is very singular, from its projecting spur. The genus being a very large one, it is divided into sections, the first two of which contain only annual plants, and have the tail or appendage of only one petal in the spur; while the other sections, which contain no annuals, have the appendages of two petals in the spur. In one of these, *Delphinastrum*, the species are all perennials, and the flowers have their petals more or less bearded; this section is divided into the Siberian Larkspurs, and the Bee Larkspurs. The other section, *Staphisagria*, consists of biennials, which have the petals not bearded, and the carpels ventricose. There are only three species in this division. The leaves of the Larkspur are poisonous, and it is said that no insects will touch them.

SECTION DELPHINASTRUM.

§ I. SIBERIAN LARKSPURS—LIMB OF THE LOWER PETALS ENTIRE.

I.—DELPHINIUM GRANDIFLORUM, *Dec.* THE LARGE-FLOWERED LARKSPUR.

SYNONYME.—*D. virgatum*, *Jacq.*

ENGRAVINGS.—*Bot. Mag.* t. 1686, of the species; and of the variety, *Bot. Reg.* t. 472; *Lodd. Bot. Cab.* t. 71; and our *fig.* 1 in Plate 10.

VARIETIES.—*D. g. 2 chinense*, *Fisch.*; *D. chinensis*, *Lodd.*; *D. sinense*, fl.-pl. *Pact. Mag. of Bot.* 7, p. 171. This is the variety represented in our figure. It is taller and stiffer than the species, and when raised from seed it generally flowers the first year.—*D. g.*

3 album, *G. Don.* Flowers white.—*D. g. 4 flore-pleno*, *G. Don.* Flowers double.—*D. g. 5 Fischerii*, *Reich.* Flowers pinkish.

SPECIFIC CHARACTER.—Leaves palmately many-parted into distant linear lobes; pedicels longer than the bracteas; petals shorter than the calyx, two lower ones somewhat orbicular, with obliquely inflexed entire borders; racemes spreading, few-flowered, diverging.

DESCRIPTION, &c.—This is a very showy kind of Larkspur, and it has the advantage of flowering from June to September. It is a native of Siberia, and it was introduced in 1816. The flowers are very large; and the sepals are of an intense blue spotted with dull red, the outer spur being greenish. The petals are much darker; two of them are very small, upright, and fleshy; and the two others are nearly round, with an oblique claw, having a small hook at the base, near which is a slightly-bearded yellow spot. The blue of the flower is of an

intense metallic hue, and, as the petals are so disposed as to hide the stamens, nothing is seen to contrast with the blue but the golden yellow spot on each petal. The double-flowered varieties are particularly handsome. The Chinese variety differs chiefly in having a very stiff, erect stem; and when raised from seed, it frequently flowers the first year. All the kinds are hardy, and are propagated by seeds or division of the root.

2.—DELPHINIUM CHEILANTHUM, *Fisch.* THE LIP-FLOWERED LARKSPUR.

SYNONYMS.—*D. davuricum*, *Stev.*; *D. hirsutum*, *Gruel.*; Doro-ninsk Larkspur; Hairy-leaved Larkspur

ENGRAVINGS.—*Bot. Reg.* t. 473, of the species; and *Swt. Brit. Flow. Gard.* 2d ser. t. 309, of the variety.

VARIETY.—*D. C. 2 multiplex*, *D. Don.* Flowers double.

SPECIFIC CHARACTER.—Stem erect, branched. Leaves 3—5-parted, with oblong, acuminate, subtrifid, and somewhat toothed lobes. Petals shorter than the calyx, two lower ones with obliquely-reflexed, ovate, entire limbs. Capsules reticulately pinnate, pubescent. (*G. Don.*)

DESCRIPTION, &c.—This species is easily distinguished by its dwarf habit of growth, and by its having leaves which are of a dark blackish green. The flowers are very handsome, from the contrast between the light blue of the sepals, and the dark purplish hue of the petals. The plant takes its specific name from the lower petals, which are much larger than the others, and form a kind of projecting, or drooping lip. The limb of these petals is not decidedly entire as that of *D. grandiflora*, but it is slightly notched, and the stamens are partly visible. The variety is very showy, from the large size and intense colour of its very double flowers. The species is a native of Siberia, whence it was introduced in 1819. Both the species and variety require a mixture of peat in the soil in which they are grown. They are generally propagated by division of the root; or if by seeds, they should be sown as soon as ripe. These plants generally flower from June to September.

§ II. BEE LARKSPURS—LIMB OF THE LOWER PETALS TWO-CLEFT.

3.—DELPHINIUM PUNICEUM, *Pall.* THE CRIMSON DELPHINIUM.

ENGRAVING.—*Floral Cabinet*, vol. i. p. 13.

SPECIFIC CHARACTER.—Leaves many-parted, or cleft to the base, so as to be divided into three long linear lobes; petioles dilated, and

stem-sheathing at the base. Flowers small, pubescent on the outside; spur short, truncated. Raceme elongated.

DESCRIPTION, &c.—This species, which is a native of Tartary, is said to have been introduced in 1785; but it was soon lost, and was not re-introduced till 1835. It is a native of the dry plains of Tartary, where it was found by the Russian traveller Pallas, by whom it was first described. It is quite hardy, but it should be grown in sandy soil, in a perfectly dry situation, as it is easily killed by damp. It is generally propagated by seeds, which it ripens freely; if increased by dividing the root, the operation should be performed in spring, when the young shoots are two or three inches above the ground. The specific name *puniceum*, which signifies crimson, is very ill applied to this species, as the flowers are of a rich dark purple. The flowers are generally produced in July and August.

4.—DELPHINIUM MENZIESII, *Dec.* MR. MENZIES' LARKSPUR.

SYNONYME.—*D. tuberosum*, *Menz.*

ENGRAVINGS.—*Bot. Reg.* t. 1192; and our *fig.* 4 in Plate 9.

SPECIFIC CHARACTER.—Leaves five-parted, with trifid, linear, entire lobes; petioles slightly dilated at the base. Bracts trifid. Roots grumose.

DESCRIPTION, &c.—This species is a native of the north-west coast of North America, where it was first found by the late Mr. Menzies, and whence seeds were sent home by Mr. Douglas in 1826. It is a dwarf



1. *Delphinium Barlowii* — 2. *Delphinium montanum*. — 3. *Delphinium sapphireum*
 4. *Delphinium Mongesii* — 5. *Delphinium azureum*

plant, with large dark purple flowers, and a tuberous root. The stem is very little branched, and the leaves are deeply cut into five divisions, each of which is again divided into three long, narrow lobes. The species flowers in June and July; it is quite hardy, and will grow readily in any common garden-soil. It is propagated by division of the root.

5.—DELPHINIUM BARLOWII, *Hort.* MR. BARLOW'S LARKSPUR.

SYNONYMS.—*D. elegans*, 2 *multiplex*; *D. phœniceum*, *Hort.*

ENGRAVINGS.—*Bot. Reg.* t. 1944; *Pact. Mag. of Bot. and Gard.* vol. v. p. 265; and our *fig.* 1 in Plate 9.

DESCRIPTION, &c.—This plant appears to be a hybrid, raised by a florist of the name of Barlow, near Manchester, between *D. grandiflorum* and *D. elatum*; though some botanists suppose it to be a variety of *D. elegans*. Whatever may be the origin of this Larkspur, it is certainly the most beautiful of the genus; as it is impossible to conceive a richer or more intense blue than is exhibited by its flowers, particularly when illuminated by the rays of the sun. The flowers are large, and very double; and they are produced in the greatest abundance on an erect branched raceme, so as to form a splendid pyramid of flowers. The stem is very strong, and much branched; and it is said to grow seven or eight feet high. Mr. Loudon and myself saw some plants above six feet high in the garden of the Misses Garnier, at Wickham, Hants; and frequently in other places about five feet high; always flowering luxuriantly, and with large, very handsome leaves. It will grow in any soil and situation; but it flourishes most in deep, rich mould, backed, but not shaded, by trees. If planted in a poor, dry soil, it is much smaller; and if in an exposed situation, it is liable to be broken by high winds. It will continue to flower all the summer and autumn.

6.—DELPHINIUM VIMINEUM, *D. Don.* THE TWIGGY LARKSPUR.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 374; *Bot. Mag.* t. 3593; and our *fig.* 4 in Plate 10.

SPECIFIC CHARACTER.—Pubescent. Petioles simple; leaves flat, three-

parted; segments wedge-shaped, and slightly three-lobed, each lobe tipped with a micro. Raceme few-flowered, slender, simple; spur straight, equal in length to the sepals.

DESCRIPTION, &c.—This species is not very ornamental, from the slenderness of the raceme and the fewness of the flowers; though they are pretty in themselves, from the reddish hue of the petals, and their yellow fringe, which contrasts agreeably with the bright blue of the sepals. The plant is tall and straggling; the slender stems rising to the height of three or four feet, without a branch. The species is a native of North America, whence it was introduced in 1836; and it is quite hardy in British gardens.

7.—DELPHINIUM ELEGANS, *Dec.* THE ELEGANT LARKSPUR.

SPECIFIC CHARACTER.—Petioles hardly dilated at the base; leaves smooth, five-parted, with 3—5-cleft lobes, and linear-lanceolate, acute lobules; racemes loose, few-flowered; petals shorter than the calyx;

spur curved, shorter than the sepals. (*G. Don.*)

VARIETIES.—*D. e.* 2 *multiplex*, *Moris. Fl. Consp.*—*D. grandiflorum*, fl.-pl. *Hort.* Flower double.

DESCRIPTION, &c.—The flowers are small, and dark blue. The species is a native of North America, introduced in 1741. The variety, which is commonly called the Double Larkspur, is confounded by Mr. George Don with *D. Barlowii*; but when grown together they appear quite distinct. *D. Barlowii* is a very tall, strong-growing plant, continuing in flower all the summer; while *Delphinium elegans* and its variety are both small plants, never growing above a foot or eighteen inches high, with very slender stems, and small delicate leaves, and flower only in June or July.

8.—DELPHINIUM TRICORNE, *Michx.* THE THREE-HORNED LARKSPUR.

ENGRAVING.—Lodd. Bot. Cab. t. 306.

VARIETY.—D. t. 2 multiflorum, *Dec.* Plant very pubescent. Flowers from fifteen to twenty in dense racemes.

SPECIFIC CHARACTER.—Petioles smooth, very little dilated at the base. Leaves 5-parted, with 3—5-cleft lobes, and linear lobules. Petals shorter than the calyx. Capsules three, reflexed, arched, and spreading from the basis. (*G. Don.*)

DESCRIPTION, &c.—This is perhaps the smallest of all the Larkspurs, seldom growing above six or eight inches high, and flowering profusely in May and the beginning of June. The flowers are purple, and the sepals, which are pointed, project at right angles, so as to look like three horns. It is a native of the shady sides of hills in Carolina and Virginia, and was introduced in 1818. It is tolerably hardy; but it is generally cultivated in pots in England; as when it is grown in the open ground, it dies quite down in winter, and as no remains of it are to be seen, it may easily be lost.

9.—DELPHINIUM ELATUM, *Ait.* THE COMMON BEE LARKSPUR.

SYNONYMS.—D. exaltatum, *G. Don*; D. tridactylum, *Michx.*; Tall Larkspur.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves

flat, cleft into 3—5—7 parts beyond the middle; with wedge-shaped lobes that are trifid or jagged, and acuminated at the apex. Racemes straight. Spur straight, length of the calyx. (*G. Don.*)

DESCRIPTION, &c.—This well-known plant grows from three to six feet high, generally attaining the latter height in gardens. The sepals are pale blue, or white, with the dark, bearded petals folded up in the centre of the flower, and looking just as though a bee were nestling into it to collect the honey. The species is a native of North America, whence it was introduced in 1758. In British gardens it prefers a good soil and sheltered situation; and it flowers in July and August.

10.—DELPHINIUM AZUREUM, *Michx.* THE AZURE LARKSPUR.

ENGRAVINGS.—Bot. Reg. 1999; and our *fig.* 5 in Plate 9 of the variety.

VARIETY.—D. a. 2 carnea. Flowers pale pink.

SPECIFIC CHARACTER.—Petioles dilated at the base; leaves 3—five-parted, much cut, lobes linear. Raceme erect. All the petals bearded at the apex; the lower ones very hairy.

DESCRIPTION, &c.—No plant can be worse named than this; as the variety is pinkish instead of blue, and is yet exactly like the species in every other respect—having even the same specks of green on each sepal. The species is a native of Texas, whence it was sent home by Mr. Drummond; and the variety was sent home by Douglas from California, both in 1836. The species is said in books to have been introduced in 1805; but if this was the case, it was soon lost. In gardens it should be grown in sandy soil. It flowers in May.

11.—DELPHINIUM INTERMEDIUM, *Ait.* THE VARIABLE BEE LARKSPUR.

ENGRAVINGS.—Bot. Reg. t. 1963, of the species; and Bot. Reg. t. 1969, 1984, and t. 38, and 52 for 1838, and our *fig.* 3 in Plate 9, of the varieties.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves 5—7-cleft, upper ones three-lobed; all the lobes deeply serrated. Raceme glaucous. Pedicels, bracts, calyx, and ovaries, glabrous.

VARIETIES.—These are very numerous; but the kinds commonly grown in British gardens are the following, which are considered as species by some botanists:—

D. i. 2 pallidum, *Lindl.* Bot. Reg. t. 1969. Flowers pale. Leaves cordate, as in the species.

D. i. 3 sapphirinum, *Lindl.* Bot. Reg. for 1838, t. 52; and our *fig.* 3 in Plate 9. This variety is remarkable for the varying hue of its sepals, which are dark blue shot with violet. The leaves are cordate at the base.

D. i. 4 palmatifidum, *Lindl.* Bot. Reg. for 1838, t. 38; D. palmatifidum, *Dec.* The sepals are light blue, tinged with pink; and the petals, which are nearly black, are divided into two narrow lobes, and are very hairy. The leaves are truncate at the base.

D. i. 5 cœrulescens, *Lindl.* The sepals are of a very pale blue; and the leaves are truncate at the base.

DESCRIPTION, &c.—This Larkspur and all its varieties are decidedly of the kind called Bee Larkspurs, as the contrast between the light colour of the sepals, and the almost black petals, which are curiously folded up and

very hairy, forms exactly the representation of a bee or large fly nestling into the flower, as though in search of honey. The plants are all tall and showy-looking, with large leaves, and bearing a profusion of flowers. They are divided by De Candolle into two species, viz. *D. intermedium*, in which, and its varieties, the leaves are cordate; and *D. palmatifidum*, in which, and its varieties, the leaves are truncate. These distinctions are, however, very variable, as the leaves are never decidedly either cordate or truncate; and they differ very much in different plants.

The species was introduced in 1710, and the varieties at different periods since 1819. They are all natives of Europe, and *D. i. palmatifidum* is said to be found also in Siberia. Among the varieties I have not regularly enumerated are two, one a native of Hungary, *D. i. alpinum*, and another, *D. i. laxum*, mentioned by Miller, which appear to have been introduced long since, though they are probably now lost. The species and all the varieties are quite hardy in British gardens, but they grow best in a rich soil and sheltered situation, as when exposed, they are often broken by high winds. They are very ornamental, and well deserving of a place in every garden of sufficient size to prevent them from appearing crowded. They are generally propagated by division of the root, seldom coming true from seed. They generally flower from June to August, their principal beauty being in July.

12.—DELPHINIUM URCEOLATUM, Willd. THE HOLLOW-LEAVED LARKSPUR.

ENGRAVING.—Bot. Mag. t. 1791.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves concave, cleft beyond the middle into three, with wedge-shaped lobes,

which are cut and acuminated at the apex. Racemes straight. Spur straight, rather longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This species bears a considerable resemblance to some of the varieties of *D. intermedium*, in the flower, though the spur is longer and more wrinkled; but it is easily distinguished from them by the great thickness of the flower-stem, and the shape of the leaves, which are less deeply cleft than usual, and have a peculiarly hollow or cup-like appearance between the termination of the lobes and the petiole. It is said to be a native of North America, but it has been found apparently wild in Europe. It was introduced in 1801; and it flowers in June.

13.—DELPHINIUM CUNEATUM, Stev. THE WOLGA LARKSPUR.

SYNONYMS.—*D. azureum*, *Hort. Par.*; *D. elatum* β , *Lam.*; *D. hybridum*, *Lin.*; *D. h. β pubiflorum*, *Dec.*; Wedge-leaved Larkspur.

ENGRAVING.—Bot. Reg. t. 327.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves wedge-shaped, in five or seven lobes; lobes sharply cut. Raceme loose-flowered. Bracts and calyx glabrous. Capsules subpubescent.

DESCRIPTION, &c.—This species resembles the last in the shape of the flowers; but it differs in the colour of the sepals, which are blue shot with purple; and in the petals, which are yellow. The plant grows three or four feet high, with numerous flowers, and large yellowish green leaves. It is a native of the banks of the Wolga, and is quite hardy in British gardens, where it flowers in June.

14.—DELPHINIUM MESOLEUCUM, Link. THE WHITE-PETALED LARKSPUR.

ENGRAVING.—Moris. Flora Conspicua, t. 25; Maund's Bot. Gard. No. 403.

SPECIFIC CHARACTER.—Leaves somewhat dilated at the base, with wedge-shaped segments, which are deeply serrated at the top. Upper part of the stem as well as the petioles pubescent. (*G. Don.*)

DESCRIPTION, &c.—This Larkspur is distinguished by the petals being white, or a very pale yellow. It grows about three feet high, and was introduced in 1822. It flowers in August.

15.—DELPHINIUM DECORUM, *Fisch. et Mey.* THE PRETTY LARKSPUR.

ENGRAVING.—Bot. Reg. for 1840, t. 64.

SPECIFIC CHARACTER.—Slightly pubescent. Leaves three-parted;

lobes sometimes bi-cleft. Flowers large, divaricate, sepals spreading; spur hooked at the tip. Capsules three, spreading.

DESCRIPTION, &c.—The flowers are remarkably large, and widely opened, the sepals spreading far apart. The petals are of the same purple as the sepals, with the exception of the upper two, which are blue. The lower petals are covered with golden yellow hairs. The roots are somewhat tuberous. This species is a native of New California, whence it was introduced through Russia in 1839.

16.—DELPHINIUM LAXIFLORUM, *Dec.* THE LOOSE-FLOWERED LARKSPUR.

ENGRAVING.—Bot. Reg. for 1838, t. 30.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves three, five, or seven-lobed, cut almost to the base; lobes oblong, pinna-

tidly cut at the tip, lobules narrow entire. Racemes loose-flowered. Bracts and ovaries pubescent.

DESCRIPTION, &c.—This is a very distinct species, from the long petioles of the flowers, which are rather small, with yellowish petals and slender bracts; and also from the singular shape of the leaves, which are cut almost to the base, into three oblong lobes, which are entire in their lower part, but jagged at the tip. The plant is quite hardy, and grows four or five feet high in good soil; it flowers in June. It may be propagated either by seeds or division of the root; and if by the former mode, the seeds may be sown in May in the open ground, and they will flower in the autumn of the same year, though not so well as they will do the year following. This species is said by De Candolle to be a native of Siberia; but this Dr. Lindley appears to doubt. It was introduced about 1837.

17.—DELPHINIUM MONTANUM, *Dec.* THE MOUNTAIN LARKSPUR.SYNONYMES.—*D. hirsutum*, *Roth.*; *D. elatum*, *All.*ENGRAVINGS.—Bot. Reg, t. 1936; and our *fig. 2* in Plate 9.VARIETY.—*D. m. 2 bracteosum*, *Dec.* Bracts large.

SPECIFIC CHARACTER.—Petioles not dilated at the base. Leaves pubescent, five-lobed; lobes wedge-shaped at the base, trifidly cut; raceme simple, close-flowered; bractees, calyx, and capsule pubescent; spur inflexed.

DESCRIPTION, &c.—This species grows five or six feet high, with an erect, closely-flowered raceme, sometimes without a branch, and as much as two feet long. It is a native of the Alps, the Pyrenees, and other mountains of central Europe; and it was introduced about 1830. It is very hardy, and will grow in any soil or situation not too damp. It flowers in August, and ripens seeds abundantly, by which it is generally propagated.

18.—DELPHINIUM SPECIOSUM, *Bieb.* THE SHOWY LARKSPUR.

ENGRAVING.—Bot. Mag. t. 1503.

SPECIFIC CHARACTER.—Petiole not dilated at the base. Leaves

pubescent, 5-lobed; lobes deeply serrated. Bracts lanceolate, covered with clammy hairs. Spur slightly curved; capsules glabrous.

DESCRIPTION, &c.—The flowers are large, with the sepals a bright blue, and the petals nearly black. The species is a native of Mount Caucasus, and it was introduced in 1829. It is a tall, handsome plant, flowering from June to September; and it is increased by division of the root, or by seeds.



1 *Delphinium grandiflorum* var. *chinense* 2 *Delphinium pictum* 3 *Delphinium triste*
4 *Delphinium consolida*.

19.—DELPHINIUM TRISTE, *Dec.* THE DARK-FLOWERED LARKSPUR.SYNONYME.—*D. obscurum*, *Stev.*ENGRAVINGS.—*Flor. Cab.* vol. ii., p. 33 ; and our *fig. 3* in Plate 10.

SPECIFIC CHARACTER.—Petioles scarcely dilated at the base. Leaves

3—5-parted ; lobes deeply cut. Raceme slightly branched. Spur slightly curved, obtuse. Nearly the whole plant, except the leaves, downy.

DESCRIPTION, &c.—The colour of the flowers of this species is so remarkable as to render it quite unlike a Larkspur. They are of a dark brown, tinged with puce and densely covered with hairs. The species is said to be a native of Siberia, and it was introduced in 1822. It must be propagated by seeds, as it does not bear dividing the root. The flowers have a disagreeable smell.

SECTION STAPHISAGRIA.

20.—DELPHINIUM STAPHISAGRIA, *Lin.* THE STAVESACRE LARKSPUR.

SYNONYME.—Lousewort Larkspur.

SPECIFIC CHARACTER.—Spur very short ; bractæ inserted at

the base of the pedicels ; petioles hairy ; pedicels twice as long as the flowers. (*G. Don.*)

DESCRIPTION, &c.—This species is truly a biennial, dying as soon as it has ripened its seeds. The flowers are blue, with whitish petals. It is common in the South of Europe and Teneriffe, generally growing among rubbish. Most of the seeds sown in gardens are brought from Italy, as they do not ripen well in this country ; the plant being rather tender here. The seeds are large and rough, with a disagreeable smell and taste. They were formerly used medicinally. The plant grows two or three feet high, and flowers in May and June. It was cultivated in Britain before 1596.

21.—DELPHINIUM PICTUM, *Willd.* THE PAINTED-LEAVED LARKSPUR.SYNONYMS.—*D. Staphisagria*, *Wood.* ; *D. maritimum*, *Cav.*ENGRAVINGS.—*Swt. Brit. Flow. Gard. t.* 128 ; and our *fig. 2* in Plate 10.

SPECIFIC CHARACTER.—Spur somewhat shorter than the calyx.

Bractæ inserted at the base of the pedicel. Petioles pubescent.

Pedicels a little longer than the flowers.

DESCRIPTION, &c.—This plant closely resembles the last species, except in the leaves, the veins of which are white. It is a biennial, and can only be propagated by seeds, the plants raised from which do not flower till the second year, and die as soon as they have ripened their seeds. It is a native of the South of Europe, and was introduced in 1816.

OTHER SPECIES OF DELPHINIUM.

These are numerous, but the following are the most remarkable :—

D. VIRESCENS, *Nutt.*

Flowers greenish. A native of North America, introduced in 1827.

D. ALBIFLORUM, *Dec.*

Flowers white. A native of Armenia, introduced in 1823.

D. FLEXUOSUM, *Dec.*

Stem flexible ; flowers blue ; a native of Caucasus, introduced in 1817.

D. OCHROLEUCUM, *Dec.*

Flowers cream-colour. A native of Caucasus, introduced in 1817.

D. CASHMERIANUM, *Royle.*

With vine-like leaves, and very large blue flowers. A native of Nepaul, introduced in 1840.

D. REQUIENII.

A biennial. A native of the South of Europe, introduced in 1819 ; closely resembling *D. pictum*, but more tender.

GENUS XVI.

ACONITUM, *Lin.* THE MONKSHOOD, OR WOLFSBANE.*Lin. Syst.* POLYANDRIA TRIGYNIA.

GENERIC CHARACTER.—Calyx of five irregular petal-like, deciduous sepals, the upper one of which is concave or helmet-shaped. Petals two, hidden within the helmet, on long stalks, forming a hollow tube at the apex, and drawn out at the end into a spur.

DESCRIPTION, &c.—Few flowers are more curiously formed than those of this genus ; their ornamental part is the calyx, which is divided into five sepals, the upper one of which forms a kind of helmet, supported by two large side petals, like the cheek plates of a visor ; while the other two petals, which are much smaller, hang down behind. Beneath the helmet, or cowl, as it equally may be fancied, are the petals, curiously folded up so as to form a kind of pouch at the upper end, while the other is drawn out into a kind of claw ; each petal being supported on a very long stalk. These curiously-formed petals were called by Linnæus nectaries, and the sac at the apex of each was supposed to be a receptacle for honey. The seed-vessels, like those of the Larkspur, are follicles ; that is, they appear formed of a leaf curved round so as to make the two side edges meet, and united by a kind of seam, called a suture. These seed-vessels are usually produced three or five together, and each contains numerous seeds, which they open at the upper part to discharge. The plants are tall and erect ; with the flowers produced in a long terminal raceme, and with the leaves generally deeply cut. The roots are partly fleshy, generally forming small radish-like tubers just below the collar. These tubers are a deadly poison in most of the species, and in all are dangerous. The leaves are, in most cases, deeply five-cleft, with the lobes cut into numerous linear lobules. The plants are generally of the easiest culture, growing freely in any tolerably good soil and sheltered situation. The flowers are blue, purple, pale yellow, and white, but never pink. The name of Aconitum is said to be taken from Acona, a city in Greece, near which some of the species are found in great abundance ; Monkshood alludes to the cowl-like upper sepal ; and Wolfsbane, to the poisonous qualities of the plants. The genus is a very large one (above a hundred and thirty species having been introduced) ; and it has been divided by modern botanists into eight sections. As, however, only a few of these plants can be procured, I have only described those which appear to be the most ornamental, taking one or two in each section.

SECTION I.—ANTHOROIDEA.

SECTIONAL CHARACTER.—Calyx permanent. Petals supine, somewhat hooked, lip obcordate, tapering into the pedicel. Stamens smoothish. Capsules five, erect. Roots napiform. (*G. Don.*)

DESCRIPTION, &c.—The roots of the plants contained in this division are said not only to be somewhat less poisonous than the rest, but actually to have been formerly used in medicine, and considered as an antidote to the poison of the other species. The species in this section have generally yellow or cream-coloured flowers, with an arched helmet, and five capsules. The roots are tuberous; and the leaves are palmately cut into linear lobes. This section is a very small one.

1.—ACONITUM ANTHORA, *Lin.* THE WHOLESOME ACONITE, OR YELLOW MONKSHOOD.

SYNONYMS.—*A. ochroleucum*, *Sal.*; *A. tuberosum*, *Patrin.*; *fig. 2* in Plate 11.
A. salutariferum, *Bauh.*

ENGRAVINGS.—*Bot. Mag.* t. 2654; *Bot. Gard.* No. 694; and our (*G. Don.*)

SPECIFIC CHARACTER.—Spur refracted; germens equally pubescent.

DESCRIPTION, &c.—The upper sepal of the flowers of this plant is exactly in the shape of a helmet, having even a little peak in front like a traveller's cap. The petals are more like petals than in some of the species, hanging down in a leaf-like manner from the tip of the long pedicel or footstalk. The species is a native of the Alps, the Pyrenees, and other European mountains, and it was introduced before 1596. De Candolle enumerates eight varieties of this species, but they appear to differ very slightly. It is quite hardy, and it is propagated by division of the root. It flowers from June to August.

SECTION II.—NAPELLOIDEA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals supine, obtuse, spherical, or arched. Lobes of leaves euneate, bipinnate. Roots or capitate, with a bifid lip. Stamens pilose. Capsules usually three, tuberos. (*G. Don.*)
young ones diverging. Peduncles nodding. Helmet convex, hemi-

DESCRIPTION, &c.—The plants included in this section all bear more or less resemblance to the common monkshood; and they have all tuberous roots, which resemble a bunch of little black turnips; and hence the name of the section, *Napus*, signifying a turnip. The roots of these plants are an extremely virulent poison. The flowers are generally blue or white; and they are large and handsome; but the helmet has not a projecting peak in front. The leaves are deeply cut; but the lobules are not so slender as in the preceding section.

2.—ACONITUM NAPELLUS, *Lin.* THE COMMON MONKSHOOD.

SYNONYMS.—*A. vulgare*, *Dec.*; *A. Tauricum*, *Schl.*; *A. Schleicheri*, *Rehb.*; *A. tenuifolium*; *A. compactum*; *A. Halleri*; *A. bicolor*.
ENGRAVINGS.—*Eng. Bot.* 2d ed. t. 769; *Bot. Gard.* t. 210; and our *fig. 7* in Plate 11.

SPECIFIC CHARACTER.—Spur capitate; helmet convex, hemispherical, gaping, smoothish; lip of the nectary revolute; peduncles erect; leaves pedately 5-parted. (*G. Don.*)

DESCRIPTION, &c.—Perhaps few plants are more common in gardens than the common monkshood, notwithstanding its poisonous qualities; its tall and vigorous habit of growth, and its showy flowers, making it a general

favourite. The species is a native of Switzerland, from which country it was introduced before 1596; but it is now frequently found wild in England and other parts of Europe. It is generally propagated by dividing the root; as, though it ripens seeds abundantly, the seedlings seldom flower till the second or third year.

3.—*ACONITUM NEUBERGENSE*, *Clus.* THE NEUBERG, OR STYRIAN MONKSHOOD.

SYNONYMES.—*A. Napellus*, *Jacq.*; *A. neomontanum*, *Wulf.*;
A. Cammarum, var. β , *Lin.*; *A. Braunii*, *Rchb.*

ENGRAVING.—Lodd. Bot. Cab. t. 1410.

SPECIFIC CHARACTER.—Spur capitate; filaments pilose; helmet closed, hemispherical; peduncles spreading; lip revolute. (*G. Don.*)

DESCRIPTION, &c.—This species is often confounded with the common kind; but it differs in several respects. The flower is much longer, and it resembles rather a lady's head-dress in the beginning of the last century, with a high eap and pinners, than a monk's hood. The flowers are on rather long pedicels, and form a loose, panicle-like raceme; and the segments of the leaves are short and blunt. The plant is a native of Styria and Hungary, whence it was introduced in 1823. It is quite hardy in British gardens, where it should be grown in light loam; and it flowers from July to October.

SECTION III.—CALLIPARIA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals supine, truncate,
 or a little hooked, with the lip scarcely emarginate. Stamens smoothish.

Capsules 3—8, erect. Helmet depressed, conical or hemispherical.
 Sac of petals large. (*G. Don.*)

DESCRIPTION, &c.—The name of Calliparia signifies beautiful cheeks, and it is applied to this section on account of the large size of the side sepals, in proportion to the helmet. This section includes all the Nepal species, which are remarkable for their entire leaves, in which respect they differ from all the other kinds of *Aconitum*.

4.—*ACONITUM HETEROPHYLLUM*, *Wall.* THE VARIOUS-LEAVED MONKSHOOD.

SYNONYMES.—*A. atees*, *Royle.*

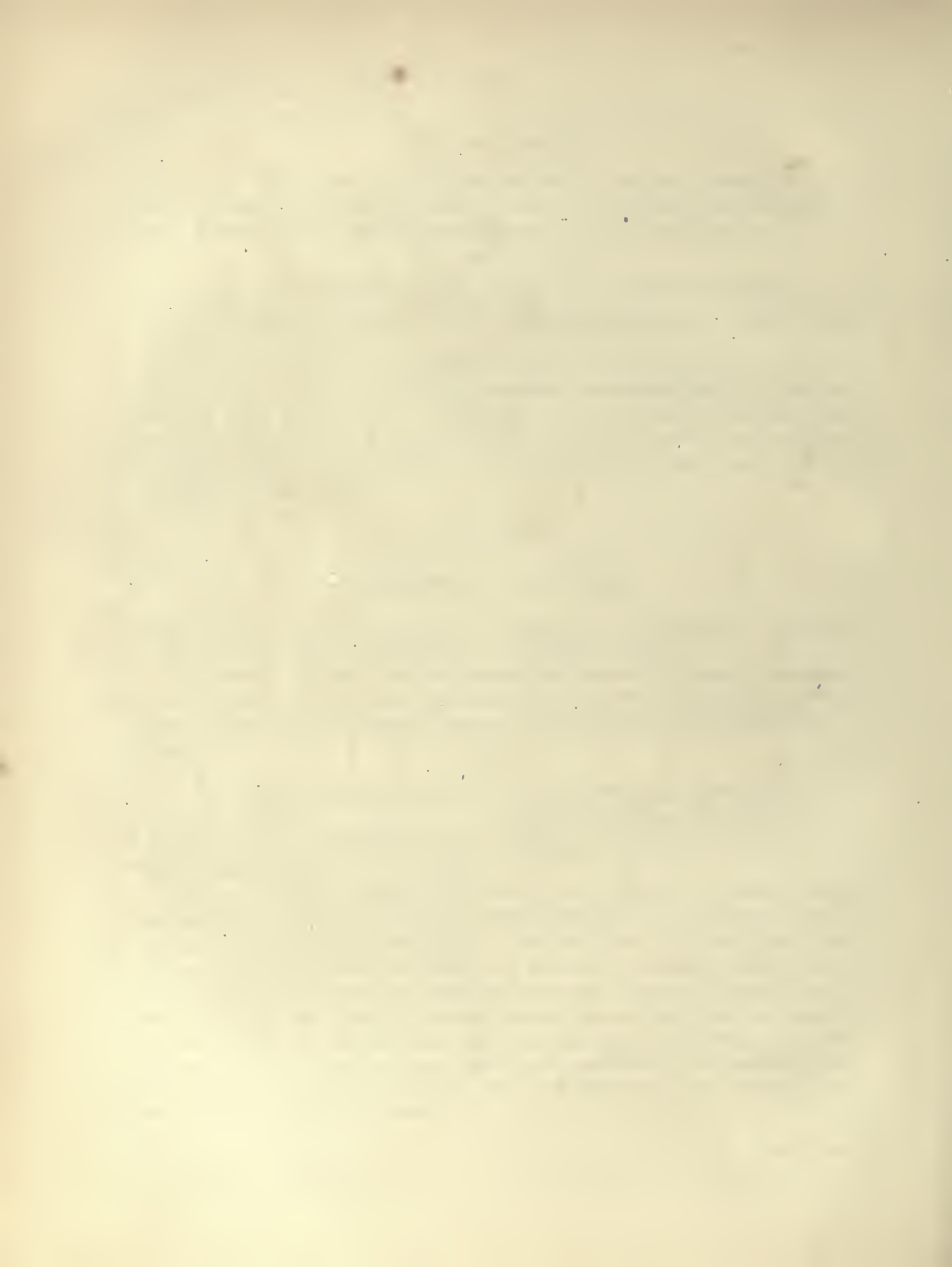
ENGRAVINGS.—Royle Illust. t. 13; and our *fig.* 1 in Plate 11.

SPECIFIC CHARACTER.—Flowers in a racemose panicle. Helmet pubescent, semicircular. Spur obtuse, limb elongated and recurved;

filaments winged; ovaries pubescent; bracts approximate, rounded or oblong, entire. Leaves cordate acuminate; crenulated or sinuately toothed at the margin.

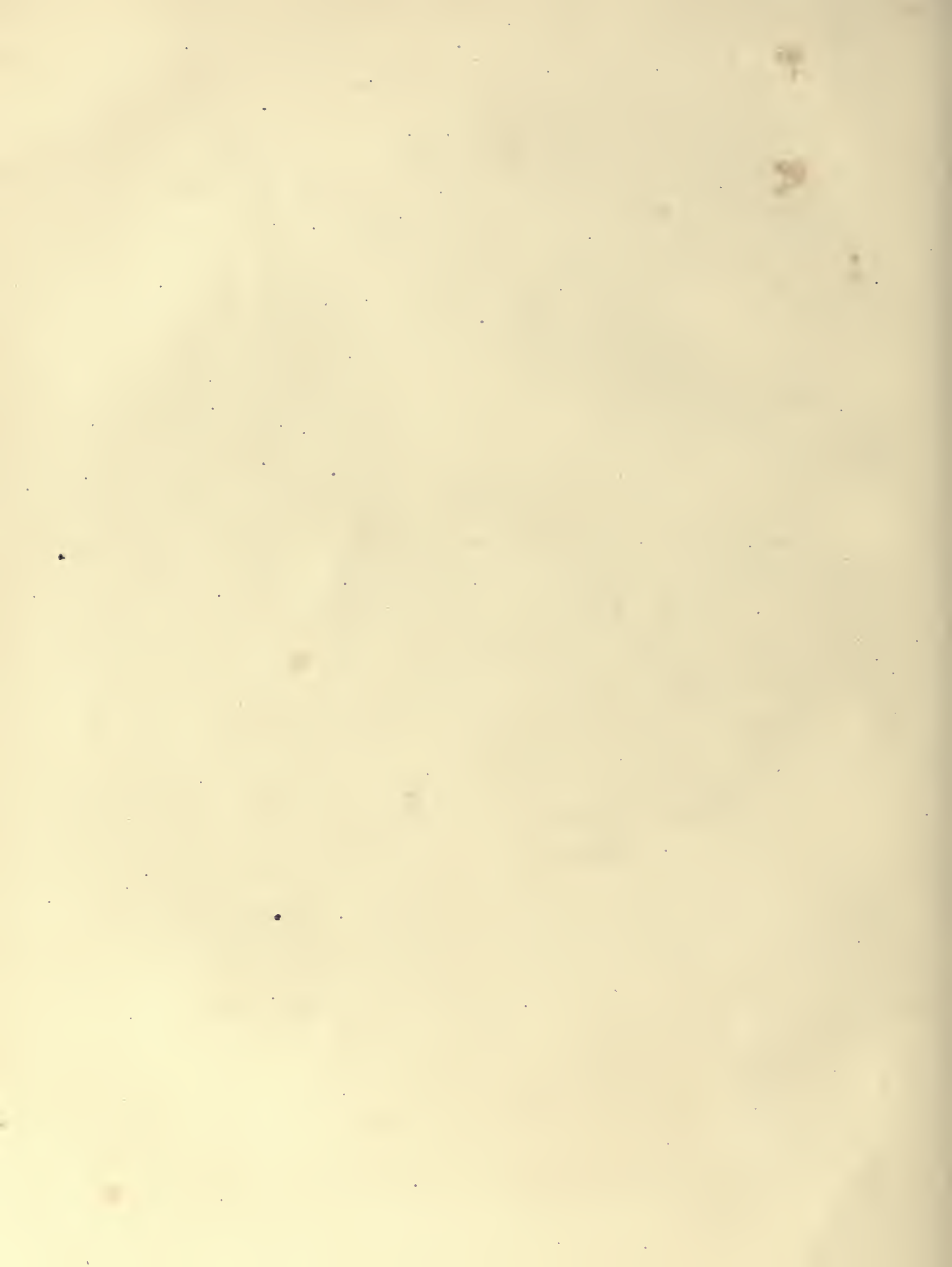
DESCRIPTION, &c.—This very singular, and, as Dr. Royle calls it, "highly ornamental species," is found on lofty mountains in India, nine or ten thousand feet above the level of the sea. It is remarkable for its leaves, the upper ones being sessile, cordate, with a notched or toothed margin, and the lower ones on long petioles, deeply and sharply toothed, and sometimes slightly lobed. The roots have two oblong oval tubers, which are used in medicine, and called *atees* by the Indians. The flowers, which are disposed in a panicled raceme, are large and roundish, and the five follicles are somewhat pubescent. The cordate leaves form the most remarkable feature in this and the two other Indian species, *A. cordatum*, Royle, and *A. ovatum*, Lindl.; though probably these names may be applied to one plant, as they appear to agree in construction, and both come from Cashmere. *A. heterophyllum* and *A. ovatum* were introduced in 1840. *A. ferox*, another nearly allied Indian species, but with palmate leaves, was introduced in 1820.







1. *Aconitum heterophyllum*. — 2. *Aconitum Anthora*. — 3. *Aconitum vicholeucum*. — 4. *Aconitum Australe*.
 5. *Aconitum paniculatum*. — 6. *Aconitum roseicolor*. — 7. *Aconitum napellus*. — 8. *Aconitum variegatum*.



SECTION IV.—EUCHYLODEA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals (nectaries) sub- | smooth. Capsules 3—5, young ones converging. Peduncles erect.
 pine or erect, inflated, somewhat hooked, gibbous. Stamens pilose or | Helmet depressed or high, conical or arched. (*G. Don.*)

DESCRIPTION, &c.—The species included in this section differ widely from all the other kinds of monkshood, in their stems being twining, or at least so flexuose as to require support. The flowers are blue or violet, and loosely disposed on the raceme; and the leaves are very much cut, into long slender segments. In some of the species the leaves are on long footstalks, and in others the roots are tuberous. The name of *Euchylodea* signifies wholesome juice, because these plants are considered not so poisonous as the others.

5.—ACONITUM TORTUOSUM, *Willd.* THE TWISTED MONKSHOOD.

SYNONYME.—*A. illinitum*, *Rehb.*

SPECIFIC CHARACTER.—Petals supine; beak blunt; helmet sub-

conical; spur thick, long, abruptly pointed; filaments rather pilose.
 (*G. Don.*)

DESCRIPTION, &c.—The root is tuberous; and the flowers, which are large and violet-coloured, are produced in loose panicles. The plant is a native of North America, whence it was introduced in 1812.

A. VOLUBILE, *Pall.*

This species differs from the last chiefly in the stem being decidedly twining and growing twelve or sixteen feet high. The flowers differ in the beak being sharp, the spur hooked at the apex, and the filaments not hairy. The lobes of the leaves are pinnate, with linear lobules. The species is a native of Siberia, whence it was introduced in 1799.

SECTION V.—CORYTHÆOLA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals (nectaries) sub- | Helmet arched or conical, variegated. Young peduncles nodding.
 pine, somewhat hooked. Stamens pilose. Capsules 3—5, converging. | Root tuberous. Lobes of leaves trapeziform, pinnate. (*G. Don.*)

DESCRIPTION, &c.—The species included in this section have generally very beautiful flowers, from the helmet being variegated: a peculiarity which is expressed by the Greek name of the section. They have all tuberous roots, and shaded purple, or striped blue and white flowers.

6.—ACONITUM STOERCKIANUM, *Rehb.* BARON VON STOERCK'S MONKSHOOD.

SYNONYMS.—*A. Tauricum*, *Ram.*; *A. intermedium*, *Dec.*

ENGRAVING.—Lodd. Bot. Cab. t. 1991.

SPECIFIC CHARACTER.—Stamens pilose. Helmet arched.

VARIETY.—*A. S. bicolor*, *Rehb.*; *A. versicolor*, Lodd. Bot. Cab. t. 794; Bot. Gard. t. 436; and our *fig. 6* in Plate II. Plant quite smooth.

DESCRIPTION, &c.—A very showy plant, which produces its large, purple shaded flowers in August. It may be kept in a pot, when it will flower profusely when only about a foot high, or it may be planted in the open ground in any good garden soil, when it will attain the height of three or four feet. It is a native of Austria, whence it was introduced in 1820. The variety is a native of Switzerland, whence it was introduced

in 1819. It grows about two feet high, with many branches forming a pyramid; and the flowers, which are blue and white, are produced in August. Both the species and variety are quite hardy, and they are increased by dividing the tubers.

SECTION VI.—TOXICOIDEA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals supine, capitate, | Helmet arched, or conical. Roots tuberous. Lobes of leaves trapezi-
or a little hooked. Stamens smooth. Capsules 3—5, erectish. | form, pinnate. Flowers blue or violet, rarely flesh-coloured. (*G. Don.*)

DESCRIPTION, &c.—These plants take their name from *toxicon*, poison; their qualities being very dangerous. The flowers are blue, violet, or flesh-coloured; and the roots are tuberous.

7.—ACONITUM PANICULATUM, *Lodd.* THE PANICLED MONKSHOOD.

SYNONYMES.—*A. cernuum*, *Koelle*; *A. Cammarum*, *Schleich.*

ENGRAVINGS.—*Lodd. Bot. Cab. t. 810*; and our *fig. 5* in Plate 11. SPECIFIC CHARACTER.—Helmet large, arched, beaked.

DESCRIPTION, &c.—A very pretty species, from the lightness of the elevated helmet, its panicles of flowers, and its flexuous stem. It is a native of Switzerland, whence it was introduced in 1800. It is quite hardy, and grows two or three feet high in any common garden soil, flowering in August. There is a variety with pinkish or flesh-coloured flowers. It is propagated by separating the tubers of the roots.

SECTION VII.—CAMMAROIDEA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals erect, clavately hooked.

Capsules usually five, erect, fringed at the suture. Stamens smooth. Helmet conical. Lobes of leaves trapeziform, pinnate.

DESCRIPTION, &c.—This section takes its name from the word *Cammarum*, which signifies a crab, lobster, or crawfish; because the upper part of the flowers resembles the recurved tail of a crawfish. The flowers are purplish and sometimes variegated. The roots are tuberous.

8.—*A. ROSTRATUM*, *Bern.* THE BEAKED MONKSHOOD.

SYNONYMES.—*A. alpinum*, *Mill.*; *A. Cammarum*, *Lam.*; *A. luridum*, *Sal.*

ENGRAVINGS.—*Lodd. Bot. Cab. t. 203.*

SPECIFIC CHARACTER.—Helmet bending forward, compressed, beak stretched out.

VARIETY.—*A. r. album*, *G. Don*; *A. album*, *Ait.*; *A. laevigatum*, *Schl.* Flowers pure white, or slightly tinged with blue or violet.

DESCRIPTION, &c.—This very distinct species is known by its elongated, compressed helmet, which ends in an abrupt point or beak in front. It is a native of Switzerland and Central Europe, and it was introduced in 1752. It flowers from June to August, and usually grows about a foot high, in pots, though it will attain a much greater height in the open ground. It should be grown in loam, and may be propagated by separating the tubers or by seeds, which, however, it does not ripen freely, and which sometimes do not come up till the second spring.

A. VARIEGATUM, *Lin.*; *Maund. Bot. Gard.* t. 629; and our *fig. 8*, in Plate 11.

A very elegant plant, with blue and white flowers. One variety has pure white flowers; another is quite a dwarf plant; and a third grows upwards of six feet high. It is a native of Central Europe, and was introduced before 1597. There are many other varieties besides those above enumerated, one of which produces bulbs in the axils of the leaves.

A. UNCINATUM, *Lin.*; *Bot. Mag.* t. 1119; A. SCANDENS, *Muhl.*

A handsome, tall-growing species, with large, deep purple flowers, and broad, lobed leaves, the lobes being only cut into three or four broad teeth at the tip. A native of North America; introduced in 1768.

A. JAPONICUM, *Thunb.*

The flowers of this species are flesh-coloured, but there is a variety with flowers of a very pale blue. The species grows six feet high, and flowers from July to September. It is a native of Japan, and was introduced in 1790.

SECTION VIII.—LYCOCTONOIDEA.

SECTIONAL CHARACTER.—Calyx deciduous. Petals oblique; spur clavate, straight, arched, hooked or spiral. Capsules three, adult ones erect, or diverging. Stamens smoothish. Helmet conical or cylindrical. Root tuberous, emitting numerous fibres. Lobes of leaves wedge-shaped, pinnate, rarely bi-pinnate. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this division should all be called Wolfsbane, which is the translation of the Sectional name, instead of Monkshood, as they have quite lost the monk's cowl which distinguished the former species. The helmet in these species is conical or cylindrical; and the colour of the flowers is yellowish or dark purple tipped with green. The roots are tuberous; and the leaves very much divided. One of the species, *A. Lycoctonum*, was formerly used to poison wolves.

9.—ACONITUM BARBATUM, *Swt.* THE BEARDED WOLFSBANE.

SYNONYMS.—*A. squarrosum*, *Lin.*; *A. boreale*, *Ser.*

ENGRAVING.—*Swt. Brit. Flow. Gard.* t. 164.

SPECIFIC CHARACTER.—Helmet conical, obtuse; spur straight; lip

obovate; wing ciliate bearded. Bracts very small. Stem pubescent. Leaves five-parted, lobes linear-acuminate.

DESCRIPTION, &c.—This very singular species has yellowish flowers, densely bearded at the lower part with long white hairs. The helmet is conical, or rather it forms a long, narrow-pointed cap, with the point. The stems grow from two to six or eight feet high, according to the depth and richness of the soil; and several stems spring from the same root. The species is a native of Siberia, and was introduced in 1807. It is increased by separating the tubers of the root.

10.—ACONITUM AUSTRALE, *Reich.* THE CARPATHIAN PURPLE WOLFSBANE.

SYNONYMS.—*A. vulparia*, var. *Carpathi*, *Ser.*; *A. septentrionale* β *Carpathicum*, *Sims.*

ENGRAVINGS.—*Bot. Mag.* t. 2196; and our *fig. 4* in Plate 11.

SPECIFIC CHARACTER.—Helmet conical, elongated. Leaves palmately five-lobed; lobes wedge-shaped, incised. Petioles dilated, and stem clasping at the base.

DESCRIPTION, &c.—The stem is flexible, angular, quite smooth. The leaves are of a dark green on the upper surface and pale below, with the footstalks dilated at the base, so as to clasp the stem. The helmet is very much

elongated, and the wings are very small. The species is a native of the Carpathian Mountains in Hungary, whence it was introduced in 1815. It is quite hardy, and grows and flowers freely in any common garden soil; it is propagated by seeds, or separation of the tubers of the root.

A. OCHROLEUCUM, *Sim's Bot. Mag.* t. 2570; and our *fig.* 3, in Plate 11.

This species differs from the preceding one in the flowers being larger, and the tip of the helmet recurved. It is a native of Caucasus, and it was introduced in 1794. The flowers are pale yellow.

A. LYCOCTONUM, *Lin.*

This is the true Wolfsbane, and the powder of the root is said to be still used for destroying rats, flies, &c. It was introduced before 1596.

All the kinds of Aconitum, of which there are many more, are quite hardy in British gardens, and they are valuable for shrubberies, as they are uninjured by the drip of trees.

GENUS XVII.

PÆONIA, *Lin.* THE PÆONY.

Lin. Syst. POLYANDRIA DI-PENTAGYNIA.

GENERIC CHARACTER.—Calyx of five unequal permanent sepals, encircling the ovaries. Carpels from two to five, with thick bilamellate petals from five to ten, roundish. Stamens numerous. Disc fleshy, stigmas. Seeds numerous, somewhat globose and shining.

DESCRIPTION, &c.—The pæonies common in our gardens are of two kinds, viz. those which are allied to the tree pæony (*Paonia Moutan*) and which are all more or less shrubby, and the common herbaceous pæonies. The herbaceous pæonies are well-known ornaments of our gardens, where they are great favourites, from their showy flowers, their great hardiness, and the easiness of their culture. The roots of these plants are composed of bundles of carrot-like tubers, which may be separated from each other when it is wished to propagate any particular species or variety; or the tubers of the common pæonies may be grafted with shoots of any choice kinds. The word Pæonia is derived from the name of the Greek physician Pæon, who is said to have been the first to use it in medicine.

1.—PÆONIA EDULIS, *Sal.* THE EATABLE-ROOTED PÆONY.

SYNONYMES.—*P. albiflora*.

ENGRAVINGS.—*Bot. Reg.* t. 42, t. 485, and t. 630; *Bot. Mag.* t. 1756, and t. 1768; *Swt. Brit. Fl. Gard.* 2nd Series, t. 351; and our *figures* 1 and 2 in Plate 12.

SPECIFIC CHARACTER.—Stem three-flowered; leaves deeply pinnatifid; the segments ovate-lanceolate, almost entire. Ovary glabrous, flowers erect.

VARIETIES.—These are very numerous, but the most beautiful are perhaps *P. e. tartarica*, figured in our plate 12 under the name of *P. albiflora*, and *P. e. Pottsii*, figured in the same plate under the name of *P. edulis*. Some of the varieties are single-flowered, and either white or crimson; and others are very double. One variety, *P. e. fragrans*, is said to be rose-scented.

DESCRIPTION, &c.—The beautiful varieties of this species were formerly all called *P. albiflora*, from the first that was discovered having been a pure white; as however several have since been discovered of a deep crimson, that name has been very properly abandoned, and that of *P. edulis* substituted in its place. *P. edulis*, which signifies the eatable Pæony, alludes to the roots having been eaten in soup in Siberia. The flowers of all





1. *Paonia edulis* — 2. *Paonia albiflora*. — 3. *Paonia tenuifolia*. ?
 4. *Paonia Hybridae*. — 5. *Paonia Russii*.



the kinds are fragrant, particularly in the evening. The species is a native of Siberia beyond the lake Baican. It was introduced in 1784 by the Russian traveller Pallas. It flowers in May and June. It may be propagated by cuttings of the root, or by seeds, which it produces in great abundance; and as the seedlings vary very much and easily hybridise with each other, a great many varieties may be produced.

2.—PÆONIA ANOMALA, *Lin.* THE ANOMALOUS OR CUT-LEAVED PÆONY.

SYNONYMS.—*P. laciata*, *Pall.*; the jagged-leaved Siberian Pæony.

ENGRAVINGS.—*Bot. Mag.* t. 1754.

SPECIFIC CHARACTER.—Carpels five, smooth, depressed, obtuse; segments of leaves smooth, pinnatifid; lobes lanceolate, acuminate. (*G. Don.*)

DESCRIPTION, &c.—This pæony, though not remarkable for its beauty, is worth cultivating for its singularity. It has generally five capsules instead of four, which spread out in a star-like manner; the root is very large, and spreading in tuberous branches, which are often a foot long, and which smell like the Florentine Iris, or, as it is commonly called, Orrice-root. The species is a native of Siberia, whence it was introduced in 1788; yet, though a native of so cold a country, it frequently perishes in the winter in this country; but probably more from damp than cold. It is most likely on account of the difficulty of preserving it through the winter, that this species is now so rarely to be met with; as its flowers are not sufficiently showy to make it worth while to take up its tuberous roots, and to preserve them during winter, like those of the Dahlia.

3.—PÆONIA TENUIFOLIA, *Lin.* THE FINE-LEAVED PÆONY.

ENGRAVINGS.—*Bot. Mag.* t. 926; *Swt. Brit. Flow. Gard.*, 2d series, t. 345; and our *fig.* 3 in Plate 12.

SPECIFIC CHARACTER.—Carpels tomentoso, spreading. Leaves bi-ternate, many-parted, smooth; segments linear, very narrow, acute.

DESCRIPTION, &c.—The species of this flower grows naturally in the Ukraine, and indeed throughout the south of Russia, generally near precipices, or on the steep banks of rapid streams; and it was introduced in 1765. The single-flowered kind has been, however, quite outshone by the extraordinary richness of a double-flowered variety, which was introduced from the south of Russia in 1824, and which is certainly one of the most splendid kinds of pæonies in our gardens. Both the species and variety are quite hardy, and will grow freely in any common garden soil, though they succeed best in a light loam. They are very ornamental, even when not in flower, from the feathery lightness of the foliage, which is particularly striking, from the great contrast it affords to the ordinary foliage of the pæony.

4.—PÆONIA HYBRIDA, *Pall.* THE HYBRID PÆONY.

ENGRAVINGS.—*Bot. Reg.* t. 1208; and our *fig.* 4 in Plate 12.

SPECIFIC CHARACTER.—Carpels recurved, pubescent. Leaves many-parted; segments linear, acuminate, glabrous. Flower drooping.

DESCRIPTION, &c.—The leaves of this species appear at first sight to bear so close a resemblance to those of *P. tenuifolia*, as to induce some botanists to suppose it only a variety of that species; while others, including Pallas, have supposed it a hybrid between *P. tenuifolia* and *P. anomala*; and hence its specific name. Dr. Lindley, however, thinks it a distinct species; and it does indeed appear very distinct from *P. tenuifolia* in many respects. In the first place, the flowers of *P. hybrida* are nodding, and those of *P. tenuifolia* erect; secondly, the flower of *P. hybrida* is placed on a long peduncle, which raises it high above the leaves; while that of *P. tenuifolia* has the leaves rising above it, and is almost hidden by them; and lastly, the leaves of *P. hybrida* are broader than those of *P. tenuifolia*, and much more gracefully drooping. Professor Pallas, who

first described it, states that he found it in the St. Petersburg Botanic Garden, growing near *P. tenuifolia* and *P. anomala*; and that consequently he thought it a hybrid between these species. It is, however, as already stated, very distinct from *P. tenuifolia*, and it is distinguished from *P. anomala*, which has smooth fruit, by the down on its carpels. It has indeed been since found wild in many parts of Russia, and it comes true from seed; so that it appears the idea of its being a hybrid is erroneous. It was introduced in 1822, and it is quite hardy in British gardens.

5.—PÆONIA OFFICINALIS, Retz. THE COMMON, OR MEDICINAL PÆONY.

SYNONYMES.—*Pæonia fœmina*; *Fuchs.*; *P. festiva*, *Tausch.*; *P. ambigua*, *Lois.*; Female Pæony.

ENGRAVING.—*Bot. Mag.* t. 1784.

SPECIFIC CHARACTER.—Carpels recurved, tomentose; segments of leaves unequally jagged, with the divisions oblong-lanceolate, smooth, glaucous, and somewhat pilose beneath. (*G. Don.*)

DESCRIPTION, &c.—This is the common pæony of the gardens, which has been in cultivation since 1548, that is, nearly three hundred years, and which is called by all the ancient writers on gardening the Female Pæony. It has always been a favourite garden flower, from its hardiness, and its thriving in almost any soil or situation, even under the shade of trees, where few other plants will live. It is very easily propagated by its tuberous roots, and also by its seeds, which it ripens in great abundance. There are numerous varieties of it, with single, double, and semi-double flowers, of various shades, from white to crimson; and it hybridises freely with the other hardy species. It is found wild in several parts of Europe; and it is evidently the species described by Dioscorides, which he tells us was used by the physician Pæon to cure Pluto when he was wounded by Hercules. Dioscorides calls this the female pæony, and the following species the male; and Linnæus makes them varieties of one species, which he calls *P. officinalis*.

6.—PÆONIA CORALLINA, Retz. THE CORAL-COLOURED PÆONY.

SYNONYMES.—*P. officinalis*, β mascula, *Lin.*; the Male Pæony.

ENGRAVINGS.—*Engl. Bot.* t. 1513; 2d ed. t. 768.

SPECIFIC CHARACTER.—Leaves biternate, smooth; segments ovate, undivided; carpels four, downy, recurved. (*Smith.*)

DESCRIPTION, &c.—This plant has been as long common in English gardens as the preceding, with which it is sometimes confounded; and it has indeed been found wild on an island in the river Severn, though probably its roots had been thrown there with the soil from some garden. The flowers are crimson, and the leaves broad, and of a dark shining green; but the most remarkable part is the kind of crest formed by the four woolly carpels after the petals have fallen, which was formerly considered so ornamental as to be a favourite plant for putting, with other similar strong-growing showy plants, into the large bean-pots which, till nearly the middle of the last century, used to be put into the large grates and fire-places during summer and autumn. The plant is frequently mentioned in old gardening books as useful for this purpose. The culture is extremely simple, as the species is propagated by separating the tubers of the root; and it will grow in any soil and situation not too moist and low. It is found wild in various parts of Europe.

7.—PÆONIA RUSSI, Biv. RUSS'S CRIMSON PÆONY.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 122; and our *fig. 5*, in *Pl. 12*.

SPECIFIC CHARACTER.—Carpels generally two, pilose, recurved. Segments of the leaves elliptic, entire, somewhat pubescent beneath.

DESCRIPTION, &c.—The flower of this species is single, and of a bright crimson; and as, though the flowers are solitary, several stems arise from the same root, it is generally grown by the cultivators of handsome shrubby-flowering plants. Its leaves are generally whitish underneath, and of a pale green on the upper side.

Though this species may be planted in shrubberies, it succeeds best in an open situation in a rich loamy soil. It is increased by parting the roots, and by seeds, which it ripens plentifully. It never, however, flowers well unless the roots are strong and large, and when this is not the case, the petals drop very soon. This objection holds good with all the pæonies; and for this reason, as well as on account of the large size of their flowers, they are quite unfit for small gardens, or for any confined space. This species is a native of Sicily, whence it was introduced in 1822.

OTHER SPECIES OF PÆONIA.

P. TRITERNATA, *Pall.* P. DAURICA, *And. Bot. Rep. t. 486; Bot. Mag. t. 1441.*

This is one of the Caucasian pæonies; with pale rose-coloured flowers. It was introduced in 1790.

P. LOBATA, *Desf.*

This species has purplish sweet-scented flowers, which are produced in May and June. It is a native of Portugal, and was introduced in 1822.

P. BROWNII, *Doug.*

This is a species with purplish red flowers, found by Douglas on the north-west coast of North America, and introduced in 1826.

P. HUMILIS, *Ritz.*

The flowers of this dwarf species are of a purplish blood colour. It is a native of Spain, and was introduced in 1633.

P. PARADOXA, *And.*

The flowers are of a violet crimson. It is a native of the Levant, but the year of its introduction is unknown.

P. MOLLIS, *And.; Lodd. Bot. Cab. t. 1863; Bot. Reg. t. 474.*

The flowers are of a dull purplish red, and the leaves are covered with a soft down. Neither the native country nor the year of introduction is known.

P. PUBENS, *Sim's Bot. Mag. t. 2264.*

Flowers large, dark purple, with yellow anthers. The whole plant is covered with down. It was introduced in 1821.

P. VILLOSA, *Swt. Brit. Flow. Gard. t. 113; P. SESSILIFLORA, Sim's Bot. Mag. t. 2648.*

A native of France, with white flowers and downy leaves. Introduced in 1820.

There are some other species, but they differ but slightly from each other.

CHAPTER II.

PERBERIDEÆ.

CHARACTER OF THE ORDER.—Sepals 3-4, but usually 6; in two series, deciduous, furnished with petal-like scales on the outside. Petals equal in number with the sepals; rarely double that number, and opposite them; usually furnished with a gland or scale at the base in the inside of each. Stamens equal in number to the petals, and opposite them; anthers adnate, two-celled, opening from the base to

the apex by a small, somewhat elastic valve. Ovary solitary, crowned by the rather orbicular stigma. Fruit one-celled, baccate, or capsular. Seeds erect, usually fixed to the bottom of lateral placenta; rarely solitary, usually 2-3, ovate or globose. Albumen fleshy; embryo straight, slender, with the radicle more or less thickened at the point, with flat cotyledons. (*G. Don.*)

DESCRIPTION, &c.—This order, though it is well known, from the beautiful shrubs belonging to the genera *Berberis* and *Mahonia*, included in it, is not supposed, generally, to contain herbaceous plants. There are, however, a few genera of perennials belonging to it which are well deserving of cultivation in gardens.

GENUS I.
LEONTICE, *Dec.* THE LION'S LEAF.

Lin. Syst. HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals 6, naked on the outside. Petals 6, bearing a scale at the base of each inside. Capsules bladdery, 2—4-seeded. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus are all perennials, with tuberous roots and stems, which die down to the ground every autumn, shooting up again in spring. The leaves are said to bear some resemblance to the print of a lion's foot; but they are in fact very much like those of the columbine. The flowers are in loose racemes or panicles, furnished with ovate, leafy, entire bracteas at the base of the pedicels, and usually with a coloured calyx. The different species, which are all pretty little plants with yellow flowers, are natives of Europe, Asia, and North America; and they are divided into two sections, one of which has the capsule inflated and not opening naturally, and the other has a berry-like capsule which opens when the seeds are ripe.

SECTION I.—LEONTOPETALUM.

SECTIONAL CHARACTER.—Capsules greatly inflated when mature, never ruptured, enclosing the seeds. Upper leaves pinnate or ternate. Petioles simple, or divided at the top, not at the base. (*G. Don.*)

1.—LEONTICE CHRYSOGONUM, *Lin.* GOLDEN-KNEED LION'S LEAF.

SYNONYMES.—*Chrysogonum Dioscorides, Rauw*; *Bongardia Rauwolfii, Mey.*

SPECIFIC CHARACTER.—Leaves pinnate; leaflets sessile, oval-oblong, 3—5-cleft at the apex; bracteas small, scarious. (*G. Don.*)

DESCRIPTION, &c.—A pretty little plant, with bright yellow flowers rising from the knees or forks of the stem. It is a native of Greece, whence it was introduced in 1740. It is very apt to be killed by damp during winter; and to avoid the danger of this, it does best grown in a pot in a mixture of sand, loam, and peat.

L. LEONTOPETALUM, *Lin.*

This is the true Lion's Leaf, the Pied-de-Lion of the French. The flowers are yellow, and striated with veins, and the leaves bear considerable resemblance to the print made by a lion's foot. It is a native of Greece, whence it was introduced before 1597.

L. VESICARIA, *Pall.*

This species is found wild in the salt marshes of Siberia, and it will not grow unless watered with a solution of salt. It was introduced in 1822.

SECTION II.—CAULOPHYLLUM.

SECTIONAL CHARACTER.—Capsules hardly inflated, sometimes baccate, ruptured when mature; the seeds are therefore exerted. Bearing only one leaf on each stem, which is situated under the raceme; petiole three-parted from the base, bearing three or five leaflets on each part. (*G. Don.*)

2.—LEONTICE ALTAICA, *Pall.* THE ALTAIAC LION'S LEAF.

ENGRAVINGS.—*Bot. Mag.* t. 3245; and our *fig.* 2 in Plate 13.

SPECIFIC CHARACTER.—Stem leaf solitary; petioles three-parted,

divided to the base, each part bearing 5 oblong, entire leaflets, which are palmately disposed. (*G. Don.*)

DESCRIPTION, &c.—A very pretty little plant, with a tuberous root like a small dark turnip. The flowers

are pretty, and they are produced in great abundance. The plant is very suitable for rockwork. It is a native of the Altaic mountains, whence it was introduced in 1822.

L. ODESSANA, *Fisch.*

“This plant differs from *L. altaica*, in the pedicels being a little longer, and the stamens being double the height of the petals, and with the segments of the leaves on rather longer stalks.” *G. Don.*—It is a native of Odessa, whence it was introduced in 1828.

L. THALICTROIDES, *Lin.*; *Lodd. Bot. Cab. t. 1473.* CAULOPHYLLUM THALICTROIDES, *Michaux.*

An American species with yellowish-green flowers and deep blue berries, called Cohosh by the Indians, by whom the plant is esteemed medicinal. It was introduced in 1784.

GENUS II.

EPIMEDIUM, *Lin.* BARRENWORT.

Lin. Syst. TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals 4—8, furnished with bracts on the outside at the base. Petals 4—6, furnished on the inside with two coloured appendages. Capsules siliculiform, 2-valved, many-seeded. Stamens 4—6. Style 1. Seeds obliquely and transversely situated, unilateral. (*G. Don.*)

DESCRIPTION, &c.—The name of *Epimedium* alludes to the habitat of *E. alpinum*, which is said to grow in Media, but is also found wild in various parts of Europe, and even in Great Britain, always in woods or coppices. It was long supposed that there was only one species in the genus. “The little dingy *Epimedium alpinum*,” says Dr. Lindley, in the *Botanical Register*, “known only in the gardens of botanists, gave no promise of its representing a line of beautiful herbaceous plants, and for a long time it was supposed to be the only one of its race. The researches, however, of modern travellers have brought to light the existence of five others.” The most remarkable of these are *E. macranthum*, *E. violaceum*, *E. pubigerum*, *E. elatum*, and *E. Musschianum*, which has large white flowers, and which is the handsomest of the genus. The species are all what are called alpine plants, that is, dwarf hardy plants suitable for rockwork. The common species is a native of Europe, but the most ornamental kinds are natives of Japan.

1.—EPIMEDIUM ALPINUM, *Lin.* THE ALPINE BARRENWORT.

ENGRAVINGS.—*Eng. Bot. t. 433*; 2d ed. t. 226.

SPECIFIC CHARACTER.—No leaf at the root. Leaf on the stem solitary, twice ternate.

DESCRIPTION, &c.—This is a dwarf plant scarcely a foot high, with a slender, creeping root, which scarcely penetrates into the ground. There are numerous succulent stems, which die down to the ground as soon as the leaves have withered, which they do very soon. The flowers appear early in spring, and though the leaves increase for a short time after the flowers disappear, they soon wither away. The plant has received its English name of Barrenwort from the peculiarity observed in all the species, of the plants producing no visible seeds. This peculiarity is mentioned by Dioscorides, who first described the plant. The flowers of this species have no striking beauty, but the leaves are rather pretty, from their neat form, and delicate almost transparent green. When the plant is cultivated, it is generally in Botanic Gardens, on rockwork, where it will grow in any common garden soil if not too wet.

2.—*EPIMEDIUM DIPHYLLUM*, Lodd. THE TWIN-LEAVED BARRENWORT.

ENGRAVINGS.—Lodd. Bot. Cab. t. 1858; and Bot. Mag. t. 3448.

SPECIFIC CHARACTER.—Petioles filiform, dichotomous sparingly covered

with spreading hairs, particularly at the joints, which are swollen. Petals flat.

DESCRIPTION, &c.—This species differs widely from all the others in the shape and colours of its flowers, which are white and quite flat. The leaves, however, and all the parts of fructification are exactly the same as in the other species. This species is said to have been introduced from North America, in 1812. Its flowers are rather pretty, but scarcely enough so to make the plant worth cultivating.

3.—*EPIMEDIUM MACRANTHUM*, Morren et Decaisne. THE LARGE-FLOWERED EPIMEDIUM.ENGRAVINGS.—Bot. Reg. t. 1906; and our *fig.* 1 in Plate 13.

SPECIFIC CHARACTER.—Leaves triternate; leaflets cordate-ovate, petioles pilose. Racemes many-flowered. Sepals linear-obtuse. Ex-

terior petals ovate-lanceolate; interior ones twice as long, and ending in a spur.

DESCRIPTION, &c.—This is a very elegant little plant, with fragrant flowers. It is a native of Japan, whence it was brought to Europe by Dr. Von Sieboldt, in 1834. It appears quite hardy; though it is generally kept in a pot for balconies, &c., as its flowers look best near the eye. It generally flowers in May.

4.—*EPIMEDIUM VIOLACEUM*, Mor. et Dec. THE VIOLET EPIMEDIUM.

ENGRAVING.—Bot. Reg. for 1840, t. 43.

SPECIFIC CHARACTER.—Leaves triternate; leaflets cordate, sagittate,

entire, acuminate, ciliated. Petioles bearded at the joints. Flowers racemose. Spurs nearly equal in length to the petals.

DESCRIPTION, &c.—This is by far the prettiest of the genus. It is a native of Japan, whence it was introduced in 1840. It is quite hardy, and very well adapted for rockwork, or any other situation usually planted with Alpines; but, like all similar plants, it is easily killed by extremes of drought or moisture. "It flowers in April and May, and it may be increased by division of the roots when in a dormant state; but, like the other species of the genus, it has never yet been found to seed." (See Bot. Reg. for 1840.)

OTHER SPECIES OF EPIMEDIUM.

E. MUSSCHIANUM, Mor. et Dec.; Paxt. Mag. of Bot. vol. v. p. 151.

This species has flowered at Chatsworth, and its flowers are large, white, and very handsome. It is a native of Japan, and was introduced in 1840.

E. HEXANDRIUM, Hook.; CAULLOPHYLLUM GRACILE, Doug.

A native of North America, with lilac and yellow flowers; introduced in 1827. It is common in shady pine forests on the banks of the Columbia; and, indeed, throughout North California. The plant is about a foot high. Like all the *Epimediums*, it can only be increased by dividing the root.

GENUS III.

DIPHYLLEIA, Michaux. THE *DIPHYLLEIA*.*Lin. Syst.* HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals 6, naked on the outside. Petals 6, | capitata. Berries nearly globose, sessile; 1-celled; 2—3-seeded. naked on the inside. Stamens 6. Styles scarcely any. Stigma | Seeds ovate-oblong. (*G. Don.*)

DESCRIPTION, &c.—There is only one species in the genus. The name of *Diphylleia* signifies Double-leaf; in allusion to each stem bearing only two leaves.





1. *Epimedium macranthum*. — 2. *Pontice Altaica*. — 3. *Jeffersonia diphylla*. — 4. *Diphyllia cymosa*.

1.—DIPHYLLEIA CYMOSA, *Michaux.* THE CYMOSE DIPHYLLEIA.ENGRAVINGS.—Bot. Mag. t. 1666 ; and our *fig. 4*, in Pl. 13.

SPECIFIC CHARACTER.—Leaves two, sub-palmate, angularly lobed, serrate ; lobes acuminate.

DESCRIPTION, &c.—The leaves are large and very handsome ; and though the flowers are small, they are pretty from their abundance, and being produced in large loose heads or cymes. The berries are of a dark blue, and very ornamental. The plant is a native of North America, whence it was introduced in 1812. It is quite hardy, and grows on the banks of rivulets in Carolina and Virginia. It flowers in May and June.

CHAPTER III.

PODOPHYLLACEÆ.

CHARACTER OF THE ORDER.—Calyx of three or four sepals. Petals 6 to 9, disposed in two or three series, each series containing the same number as there are sepals ; the outer series alternately with them. Stamens equal in number with the petals, or double that number ; filaments filiform ; anthers terminal, opening lengthways on the inside by

a double chink. Ovary solitary, crowned by a thick peltate stigma, which is nearly sessile. Carpels one-celled, baccate, indehiscent ; or capsular, opening round the apex. Seeds numerous, ovate, globose, inverted, fixed to the lateral placenta. (*G. Don.*)

DESCRIPTION, &c.—This order consists of water and marsh plants ; and though there are four genera, there are only four species ; and the only ornamental plants belonging to it are *Podophyllum peltatum* and *Jeffersonia diphylla*.

GENUS I.

PODOPHYLLUM, *Dec.* THE DUCK'S-FOOT.*Lin. Syst.* POLYANDRIA MONOGYNIA.GENERIC CHARACTER.—Calyx of three sepals. Petals 6 to 9. Stamens 12—18. Berry somewhat fleshy, 1-celled, indehiscent. (*G. Don.*)

DESCRIPTION, &c.—The name of Podophyllum is abridged from Anapodophyllum, the name originally given to it by Tournefort, and which signifies literally Duck's-foot Leaf, in allusion to the shape of the leaves, which rise high above the flower, and are very large and conspicuous. The plants included in this order inhabit shady places in North America. The roots are used in medicine ; the leaves and stems are poisonous, and the fruit is eatable.

1.—PODOPHYLLUM PELTATUM, *Trew.* THE PELTATE PODOPHYLLUM, OR COMMON MAY-APPLE.SYNONYMES.—Anapodophyllum, *Tourne.* ; *A. canadense*, *Catesb.*
ENGRAVING.—Bot. Mag. t. 1819.SPECIFIC CHARACTER.—Stem erect, two-leaved, one-flowered.
Fruit ovate. (*G. Don.*)

DESCRIPTION, &c.—A dwarf plant found in patches in the marshes in Canada. Its roots are brittle, and are used in medicine ; and a decoction of them is intensely bitter. The berry is ovate, and about the size of a sloe ; at first it is nauseous, but when quite ripe it becomes acid and eatable. The flowers are white, and the fruit is yellowish. The species was introduced in 1664, and it flowers in May. It is generally propagated by dividing the roots ; and roots are imported from America.

P. CALLICARPUM, *Raf.*

Is another species, with a white and reddish fruit, which is very ornamental. The flowers are nodding, and very fragrant. The species is a native of Louisiana, and has not yet been introduced.

GENUS II.

JEFFERSONIA, *Bar.* THE JEFFERSONIA.*Lin. Syst.* OCTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx of four sepals. Petals eight. Stamens eight, with short filaments. Capsules opening by the whole circumference of the apex. Seeds numerous, furnished at the base with a lacerated arillus. (*G. Don.*)

DESCRIPTION, &c.—There is only one species which was formerly considered to belong to *Podophyllum*, but which was separated from that genus on account of the natural opening of the capsule. The new genus was found by Dr. Barton, and named by him in honour of Jefferson, the president of the United States.

1.—JEFFERSONIA DIPHYLLA, *Pers.* THE TWO-LEAVED JEFFERSONIA.

SYNONYMES.—*J. binata*, *Bart.*; *J. Bartonis*, *Michaux*; *Podophyllum diphyllum*, *Lin.*

ENGRAVINGS.—*Bot. Mag.* t. 1513; and our *fig.* 3, in Plate 13.

SPECIFIC CHARACTER.—Leaves profoundly cleft into two lobes. Peduncles 1-flowered. Flower white; anthers yellow. Calyx deciduous, coloured. Seeds shining. (*G. Don.*)

DESCRIPTION, &c.—A very pretty little plant, which flowers when not more than three or four inches high; though, after the flowers fall, the stem and leaves grow to the height of a foot or more. It is a native of Tennessee and Virginia in North America; always growing in moist places. In gardens it succeeds best in peat soil, mixed with sand and a little loam; and it should always be kept in a shady situation. It is generally increased by dividing the root; and it is sometimes killed by severe frosts. The seed-vessel, after the petals have fallen, bears considerable resemblance to that of the poppy. The species was introduced in 1792.

CHAPTER IV.

NYMPHÆACEÆ.

CHARACTER OF THE ORDER.—Calyx of 4—5 sepals, inserted in the receptacle. Petals and stamens in one or several series; the stamens alternate with the sepals. Filaments sometimes drawn out beyond the cells of the anthers. Carpels numerous, membranous, many-seeded, enclosed within the torus; and with the stigmas radiating upon the top of the pitcher-shaped fruit.

DESCRIPTION, &c.—The only hardy species are included in the two genera *Nymphæa* and *Nuphar*; several of which are natives of Britain.

GENUS I.

NYMPHÆA, *Neck.* THE WATER LILY.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of four sepals, girding the base of the torus. Petals sixteen to twenty-eight, adnate to the torus, elevated about the ovary and covering it, so as to appear at first sight inserted in it. Stamens numerous, disposed in many series, inserted in a similar way above the petals.

DESCRIPTION, &c.—The Water Lilies are all showy aquatic plants, with fleshy stem-like main roots, fringed with numerous fibres. The leaves are very large and flat; and floating, with the stem in the middle. The flowers are very large, and generally white, but sometimes rose-coloured or blue, but never yellow; and they are generally so placed as to seem to repose on the surface of the waters. The common white Water Lily (*N. alba*) is perhaps the most beautiful species.





1. *Nymphaea advena*. — 2. *Nymphaea odorata*. — 3. *Nymphaea odorata minor*. — 4. *Nymphaea nitida*.

1.—*NYMPHÆA ALBA*, *Lin.* THE WHITE WATER LILY.SYNONYME.—*Castalia speciosa*, *Sal.*ENGRAVINGS.—*Eog. Bot.* t. 160 ; 2nd edit. t. 765.SPECIFIC CHARACTER.—Leaves cordate, quite entire ; stigmas 16-rayed ; rays ascending. (*G. Don.*)

DESCRIPTION, &c.—This splendid plant is so common, and so generally admired, as to need very little description ; but it may be interesting to say a few words on its cultivation. It succeeds best in still water on a loamy soil ; and only requires planting by plunging a stake into the mud at the bottom of the pond, and moving it backwards and forwards, and then letting the main root of the plant gently into the cavity, and pressing the mud round it. The species is propagated by dividing the main root or underground stem, taking care that a few of the fibrous roots are attached to each portion, and that these fibrous roots are neither bruised nor broken ; those which are at all injured had better be cut off. If the water lily be planted in running water, a stone should be laid on the main root to keep it in the proper place ; but the water lily never looks well in running water, as it requires the stillness of a pond or lake to give it that air of majestic repose which is so decidedly its characteristic, and which has made poets call it the queen of aquatic flowers. Even when planted in ponds, it should not be in very deep water, as when this is the case, the stalk becomes elongated and so weak, as to be scarcely able to support the flower, which consequently loses much of the beauty and grandeur of its appearance. The petals close at night and reopen in the morning ; but they do not sink beneath the water when they close, as was formerly supposed. There is a dwarf variety, which is found wild in Alsace, also near Baden, and near Moscow ; and which is distinguished from the other dwarf kinds, by the stamens looking like pointed petals.

2.—*NYMPHÆA ODORATA*, *Ait.* THE SWEET-SCENTED WATER LILY.ENGRAVINGS.—*Bot. Mag.* t. 819, and t. 1652 ; *Bot. Rep.* t. 297 ; and our *figs.* 2 and 3 in Plate 14.and veins on the under surface very prominent ; stigmas 16—20-rayed ; rays erect, inflexed at the top. (*G. Don.*)

SPECIFIC CHARACTER.—Leaves cordate, quite entire, with the nerves

DESCRIPTION, &c.—This beautiful flower has a most delightful fragrance ; but it has the disadvantage of only being open in the morning, as it closes soon after noon. It is a native of North America, whence it was introduced in 1780, and where its rhizoma, or main root, is used in medicine, as it is a powerful astringent. The variety, which is also a native of North America, whence it was introduced in 1812, has small white flowers, with very narrow petals. The variety is often called *rosea*, but not, as Pursh supposes, from the colour of the flowers, it being the under side of the leaf which is red. In the species, some of the inner stamens have petal-like filaments like *N. alba* ; but this is not the case with the variety. The culture of both the species and variety is the same as that of the common water-lily.

3.—*NYMPHÆA NITIDA*, *Sims.* THE SHINING WATER LILY.ENGRAVINGS.—*Bot. Mag.* t. 1359 ; and our *fig.* 4, in Plate 14.

SPECIFIC CHARACTER.—Leaves cordate, quite entire ; nerves not

prominent on the under surface ; petioles smooth ; petals blunt ; stigmas 12—20-rayed. (*G. Don.*)

DESCRIPTION, &c.—This species is easily distinguished from all the others by the dark purple of the outside of the sepals, and also by its rhizoma or root-stock, which is erect, instead of being creeping, with fibrous roots projecting from its sides. The leaves also have the veins sunk into them on both sides, instead of projecting on the lower side as in *N. odorata*. This species is said to be more tender than the others, and to be a native of China. It was introduced in 1809.

4.—*NYMPHÆA PYGMÆA*, *Dec.* THE DWARF WATER-LILY.

SYNONYME.—*Castalia pygmæa*, *Sal.*; *N. tetragona*, *Geor.*
ENGRAVING.—*Bot. Mag.* t. 1525.

SPECIFIC CHARACTER.—Leaves cordate, quite entire; nerves not prominent; petioles smooth; petals acute; stigmas 8-rayed. (*G. Don.*)

DESCRIPTION, &c.—This very pretty little plant has such small petals, that the golden yellow anthers seem to fill up the whole centre of the flower. The receptacle, which connects the different portions of the flower, is square; and this gives the same form to the flower itself. The leaf resembles that of *N. nitida*, the veins both on the under and the upper surface of the leaf being depressed, instead of projecting. The species is a native of the eastern part of Siberia, and it was introduced in 1805. The species is quite hardy; and it requires the same treatment as the other kinds, except that, from its small size, it is more suitable for a cistern than a pond.

N. SANGUINEA, *Horne.*

This species, which is a native of Georgia, is said to have bright crimson flowers, and to have been introduced in 1828.

GENUS II.

NUPHAR, *Sibth. and Smith.* THE YELLOW WATER LILY.*Lin. Syst.* POLYANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx of 5—6 petal-like sepals. Petals 10—13, much smaller than the sepals, with their backs melliferous. Stamens indefinite, which are, as well as the sepals and petals, inserted at the base of the torus, and therefore the berry appears as if it were superior. Stigmas 10—18, radiated. Carpels 10—18, inclosed within the torus.

DESCRIPTION, &c.—The yellow water lilies are aquatic herbs, generally with much smaller flowers than those of the genus *Nymphæa*. The rhizoma or main root is thick and horizontal; and the peduncles generally rise a little above the water, so that the flowers do not seem to repose on the surface of the water, as in the white water lily. The name of Nuphar is taken from the Arabic name of *Nymphæa alba*.

1.—NUPHAR LUTEA, *Sib. and Smith.* THE COMMON YELLOW WATER LILY.

ENGRAVINGS.—*Eng. Bot.* t. 159; 2nd ed. t. 766.

SPECIFIC CHARACTER.—Calyx of 5 sepals; stigmas entire, 16—20-rayed, profoundly umbilicated; leaves oval-cordate; lobes approximate; petioles triquetrous, with acute angles. (*G. Don.*)

DESCRIPTION, &c.—The common yellow water lily is frequent in ponds, lakes, and slow rivers throughout England, where it flowers in July. Its flowers smell like brandy, and combined with the bottle-like shape of its capsules, they have given rise to the common name of brandy-bottle, by which the plant is known in many parts of England. The culture of this plant resembles that of the common water lily.

2.—NUPHAR PUMILA, *Smith.* THE DWARF YELLOW WATER LILY.

SYNONYME.—*N. micima*, *Sib.*

ENGRAVINGS.—*Eng. Bot.* t. 2292; 2nd ed. t. 767.

SPECIFIC CHARACTER.—Leaves cordate, the lobes somewhat distant;

petioles two-edged. Calyx of 5 sepals. Stigma toothed on the margin. Fruit furrowed upwards.

DESCRIPTION, &c.—This species is a native of Scotland, where it is found floating on the Highland lakes, and flowering in July and August. The flowers are of a deep yellow, but so small as to be not worth cultivating.

3.—NUPHAR KALMIANA, *Ait.* KALM'S, OR THE CANADIAN YELLOW WATER LILY.

SYNONYMS.—*N. lutea*, var. *Kalmiana*, *Michx.*; *N. microphylla*, *Pers.*

ENGRAVING.—*Bot. Mag.* 1243.

SPECIFIC CHARACTER.—Calyx 5-sepalled; stigmas toothed, 8—10-rayed; leaves cordato, somewhat emersed; lobes somewhat approximate; petioles nearly cylindrical. (*G. Don.*)

DESCRIPTION, &c.—A species with very small flowers, resembling *N. pumila*. A native of North America, from Canada and Newfoundland to Carolina and Virginia, in ponds and ditches. Not worth cultivating.

4.—NUPHAR ADVENA, *Dec.* THE FOREIGN YELLOW WATER LILY.

SYNONYMS.—*Nymphaea advena*, *Ait.*; *N. arifolia*, *Sal.*; three-coloured water lily.

ENGRAVINGS.—*Bot. Mag.* t. 684; and our *fig.* 1, in Plate 14.

SPECIFIC CHARACTER.—Calyx of 6 sepals; petals many, small, shorter, never exceeding the stamens; pericarp furrowed; leaves erect, cordate, lobes divaricate. (*G. Don.*)

DESCRIPTION, &c.—The calyx is purple within and green without; the petals are of a bright yellow, and the anthers are red. The flowers, which stand high above the water, are rather large and showy; but they are seldom produced in this country in the open air, unless in very hot summers. The species is a native of North America, from Canada to Carolina, and it was introduced in 1772. There is a variety with the flowers entirely yellow. In our Plate 14, this species bears its old name of *Nymphaea advena*.

NUPHAR SAGITTÆFOLIA, *Dec.*

This species has yellow flowers, and arrow-shaped leaves. It is a native of Georgia, whence it was introduced in 1820.

CHAPTER V.

PAPAVERACEÆ.

CHARACTER OF THE ORDER.—Sepals 2—3; petals 4—8; stamens numerous, hypogynous. Capsules valveless and nearly globose, or elongated and silique-formed.

GENUS I.

PAPAVER, *Dec.* THE POPPY.

Lin. Syst. POLYANDRIA MONOGYNIA.

GENERIC CHARACTER.—Petals 4, stamens indefinite; style wanting, stigmas 4—20, radiating, sessile, connected, crowning the top of the ovarium. Capsule obovate. (*G. Don.*)

DESCRIPTION, &c.—The perennial species have all very showy flowers; and two of the most brilliant, viz. *P. bracteatum* and *P. orientale*, have the peculiarity of having the calyx in three sepals instead of in two, as is the case with all the other plants belonging to the genus.

1.—PAPAVER CROCEUM, *Lede.* THE SAFFRON-COLOURED POPPY.

SYNONYME.—*P. alpinum*, *Siev.*
ENGRAVING.—*Bot. Mag.* t. 3035.

SPECIFIC CHARACTER.—Leaves sub-bipinnatifid. Stem naked; calyx and germen densely pilose. Capsule oblong.

DESCRIPTION, &c.—This poppy has large and handsome yellow flowers, and it was found by Ledebour in the bed of a river near the Altai Mountains. It was introduced in 1830. It is quite hardy, and flowers in the open border in June. It is most nearly allied to *P. nudicaule*, but is much larger and handsomer than that

species. *P. croceum* is, indeed, by far the handsomest of the yellow poppies; and it is perhaps the only one worth cultivating in an ornamental flower-garden.

2.—PAPAVER RUBRO-AURANTIACUM, Dec. THE ORANGE-RED POPPY.

SYNONYME.—*P. nudicaule*, var. *rubro-aurantiacum*, *Fisch.*

ENGRAVINGS.—*Bot. Mag.* t. 2344; and our *fig.* 3 in Plate 15.

SPECIFIC CHARACTER.—Lobules of leaves each terminating in a bristle. Scape covered with adpressed hairs. Rays of the stigma 8.

DESCRIPTION, &c.—This species is nearly allied to *P. nudicaule*, which was figured in my volume of *Annuals*, from its generally flowering the first year after sowing, but which is generally considered a perennial. In the present species the stalk is not naked, but, on the contrary, it is covered with short close hairs. Both *P. nudicaule* and this species differ from other perennials, in frequently living three or four years; and also when sown in autumn in often flowering the following June or July. This species is a native of Siberia, and was introduced in 1822.

3.—PAPAVER ALPINUM, Dec. THE ALPINE POPPY.

SYNONYME.—*P. Burseri*, *Crantz.*

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 247; and our *fig.* 2 in Plate 15.

SPECIFIC CHARACTER.—Capsule hispid, obovate-oblong, sepals pilose; peduncles rising from the root. Leaves pinnate, leaflets bipinnatifid, leaflets slender, sub-acute.

DESCRIPTION, &c.—This dwarf species of poppy has the leaves so remarkably and curiously cut, as to resemble those of a ranunculus more than the leaves of any kind of poppy. The plants are thickened at the base, and send up numerous shoots, so as to produce a very pretty effect when grown in tufts. The plant is a native of Austria, whence it was introduced in 1759. It is hardy, but not long-lived; and it is sometimes killed off by damp, which seems to injure it as much or more than frost. It succeeds best on rock-work, with a flower-pot turned over it in winter.

4.—PAPAVER ORIENTALE, Lin. THE ORIENTAL POPPY.

SYNONYMES.—*P. grandiflorum*, *Mench.*; *P. spectabile*, *Sal.*

ENGRAVINGS.—*Bot. Mag.* t. 57; and our *fig.* 1 in Plate 15.

SPECIFIC CHARACTER.—Capsules smooth, somewhat globose; sepals

pilose; stem 1-flowered, scabrous, and leafy; leaves pinnate-parted, hispid; lobes oblong, serrated. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this species are large, of an intense scarlet, or blood-red, and with a dark purple mark at the base of each petal. Only one flower is produced on each stem, but there are several stems from each root. The calyx has three sepals instead of two, and there are twelve violet-coloured stigmas. The green capsules of this species are said to be eaten by the Turks, though they are acrid, with a very unpleasant taste. The species is a native of Armenia, and it was introduced in 1714.

5.—PAPAVER BRACTEATUM, Lindl. THE BRACTEATED POPPY.

SYNONYME.—*P. pulcherrimum*, *Fisch.*

ENGRAVING.—*Bot. Reg.* t. 658.

SPECIFIC CHARACTER.—Flowers furnished with bracteas, 4—5

petalled; capsules smooth, obovate; sepals pilose; stem simple, 1-flowered, scabrous, and leafy; leaves and bracteas pinnate-parted, hispid; lobes oblong, serrated. (*G. Don.*)

DESCRIPTION, &c.—This is the handsomest of all the poppies. The flowers are very large, still more so than those of the preceding species, but in other respects at first sight they are scarcely to be distinguished asunder; though, on a closer inspection, it will be found that the hairs on the calyx and stem are closely pressed in a slanting direction, while those of the previous species spread horizontally. It also flowers a little earlier. It is a native of Mount Caucasus, and was introduced in 1817.







1. *Papaver orientale*... 2. *Papaver alpinum*... 3. *Papaver rubro-aurantiacum*... 4. *Meconopsis Cambrica*... 5. *Argemone grandiflora* -
 - 6. *Sanguinaria Canadensis* - 7. *Macleaya cordata* L.

OTHER SPECIES OF PAPAVER.

There are several other species of perennial poppies, some of which are generally raised from seed, and frequently flower the first year. The most interesting of these are the following:—

P. NUDICAULE, *Dec.*

This species has yellow flowers, and is a native of Siberia, whence it was introduced in 1730. There are two varieties, one with smooth stalks, and the other with short hairy stems.

P. MICROCARPUM, *Dec.*

A species with brownish flowers and very small capsules, a native of Kamtschatka.

P. PYRENAICUM, *Dec.*; P. AURANTIACUM, *Lois.*

There are two varieties of this species, one with red flowers, and the other with yellow ones. Both are natives of the Pyrenees, but the year of their introduction is not known.

P. FLORIBUNDUM, *Dec.*

A biennial from the Levant, with red flowers; introduced in 1815.

GENUS II.

ARGEMONE, *Tour.* THE PRICKLY POPPY.*Lin. Syst.* POLYANDRIA MONOGYNIA.

GENERIC CHARACTER.—Petals 4—6. Stamina indefinite. Style almost wanting. Stigmas 4—5, radiating, concave, free. Capsule obovate, prickly, 4—5-valved. (*G. Don.*)

DESCRIPTION, &c.—All of the kinds of prickly poppy may be treated as annuals; but *A. grandiflora* is properly a perennial, as it lasts many years, and is generally propagated by dividing the root; as, though when raised from seed, it will flower the first year, it very seldom ripens seed. The prickly poppies are always easily known by their leaves, which are covered with prickles, and which in most of the species have conspicuously white midribs, whence some botanists derive the name, *Argos* signifying white. Others derive it from *Argema*, a cataract of the eye; as the yellow glutinous juice of these plants, particularly of the common kind (*Argemone mexicana*), is reckoned excellent in all diseases of the eye.

1.—ARGEMONE GRANDIFLORA, *Swt.* THE LARGE-FLOWERED PRICKLY POPPY.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 226; and our *fig. 5* in Plate 15.

nerves unarmed. Flowers panicled, polyandrous; calyx smooth; capsules bluntly-quadrangular, almost unarmed. (*G. Don.*)

SPECIFIC CHARACTER.—Leaves sinuated, smooth, spiny-toothed;

DESCRIPTION, &c.—This very showy plant has panicles of white flowers, which are often four inches across. The calyx is in three sepals, and armed with short but very strong spines, each of which looks almost like a horn. There are six petals, which overlap each other so much as to make the flower look very nearly round. The leaves are all green, and only prickly at the margin. The plant is a very showy one, and well deserving of cultivation. It is propagated by dividing the root, as it very seldom ripens seeds. It is a native of Mexico, whence it was introduced in 1827. It is quite hardy in British gardens.

GENUS III.

MECONOPSIS, *Lindl.* THE WELSH POPPY.*Lin. Syst.* POLYANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals 2, pilose. Petals 4. Stamens indefinite. Style short. Stigmas 5—6, radiated, convex, free. Capsules obovate, 1-celled; valves 5—6, opening at the top; placentas thin, narrow, hardly drawn out on the inside into narrow membranes. (*G. Don.*)

DESCRIPTION, &c.—The common Welsh poppy, which is a very elegant plant, a native of North Wales, found only in Alpine situations near water; is the only British species left in this genus; though there are two Californian species, the seeds of which were sent home by Douglas, but from which no plants have been obtained. The name of *Meconopsis* is derived from *Mekon*, a poppy; and *opsis* likeness.

1.—MECONOPSIS CAMBRICA, *Lindl.* THE COMMON WELSH POPPY.SYNONYME.—*Papaver Cambricum*, *Lin.*ENGRAVINGS.—*Eng. Bot.* t. 66; 2d edit. t. 751; and our *fig.* 4 in Plate 15.SPECIFIC CHARACTER.—Capsule smooth. Leaves mostly petiolate, pinnate; the segments jagged and divided. (*Smith.*)

DESCRIPTION, &c.—The Welsh poppy is an elegant delicate-looking plant of a somewhat succulent habit, closely resembling the common poppy, except in the colour of its flowers, the presence of a style, and the yellowness of the juice when the stem is broken; that of all the poppies being white. It is quite hardy; but it grows best in a poor (or at least light) soil, and in the shade. When it is to be grown in the common garden mould, a little sand should be added.

GENUS IV.

SANGUINARIA, *Dill.* THE PUCCOON.*Lin. Syst.* POLYANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals 2, ovate, caducous. Petals 8—12. Stamens 24. Stigma bisulcate. Capsules oblong, 2-valved, ventricose, acute at both ends; valves deciduous; placentas 2, permanent. (*G. Don.*)

DESCRIPTION, &c.—There is only one species, a dwarf plant, with white flowers. The name of *Sanguinaria*, which is from *Sanguis*, blood, alludes to the red juice which abounds in every part of it, and which is seen when the stem or root chances to be broken. Puccoon is the native American name.

1.—SANGUINARIA CANADENSIS, *Lin.* THE CANADIAN BLOODROOT, OR PUCCOON.ENGRAVINGS.—*Bot. Mag.* t. 162; and our *fig.* 6, in Plate 15.

SPECIFIC CHARACTER.—Trunk of root horizontal, subterraneous,

yielding a red juice when cut. Leaf radical, kidney-shaped, lobed like the leaf of a fig. Scape 1-flowered. (*G. Don.*)

DESCRIPTION, &c.—This pretty little plant is a native of Canada, where it is used in medicine as an emetic. It is a very pretty little plant, quite hardy, which should be planted in the front of a flower-border, where it will flower from March till May, its principal fault being that its petals fall very soon, like those of the poppies and other plants belonging to the same order. The root of this plant when broken appears to bleed profusely, from the great quantity of red juice which it emits; and hence the popular name of Bloodroot.

GENUS V.

MACLEAYA, *R. Br.* THE MACLEAYA.*Lin. Syst.* POLYANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals 2, caducous. Petals none. Stamens 24—28. Stigmas 2, spreading. Capsule elliptical, with many-seeded placentas. Seeds fixed to parietal placentas. Albumen fleshy. Embryo very minute, erect. (*G. Don.*)

DESCRIPTION, &c.—There is only one species in this genus, which was separated from *Bocconia*, and named in honour of Alexander MacLeay, Colonial Secretary in New South Wales.

I.—MACLEAYA CORDATA, *R. Br.* THE CORDATE-LEAVED MACLEAYA.SYNONYM.—*Bocconia cordata*, *Willd.*ENGRAVINGS.—*Bot. Mag.* t. 1905; and our *fig. 7* in Plate 15.

SPECIFIC CHARACTER.—Leaves roundish, cordate, obsolete lobed, glaucous on the under surface. Flowers disposed in large panicles.

DESCRIPTION, &c.—This species is said to be “a very ornamental, stately, herbaceous plant, when grown in a rich soil.” It is a native of China, whence it was introduced in 1795. It flowers in June and July, and it is propagated by dividing the roots in spring. This plant is not suitable for a small garden, as it grows from three to five feet high, and spreads proportionately.

CHAPTER VI.

FUMARIACEÆ.

CHARACTER OF THE ORDER.—Sepals 2. Petals 4, the outer two or one of them saccate at the base; inner two callous, and coloured at the apex, where they unite, inclosing the anthers and the stigma. Stamens 6, in two parcels, or rarely separate. Anthers some 1-celled, others 2-celled. Ovary superior, 1-celled; ovules horizontal; style filiform; stigma with two or more lobes. Fruit various. Seeds horizontal, shining, crested.

DESCRIPTION, &c.—The plants belonging to this order are easily known by the very singular shape of their flowers. They differ from *Papaveraceæ*, to which they are nearly allied, in their juice being watery, and their petals irregular. The word *Fumaria*, which gives its name to the order, is derived from *Fumus*, smoke, alluding to the smell of the British plants included in the genus *Fumaria*.

GENUS I.

DIELYTRA, *Borch.* THE DIELYTRA.*Lin. Syst.* DIADELPHIA HEXANDRIA.

GENERIC CHARACTER.—Petals 4, the outer two equally spurred or two bundles, or joined at the top, and free at the base. Capsules gibbous at the base. Stamens 6, altogether free, or approximating into 2-valved, many-seeded. (*G. Don.*)

DESCRIPTION, &c.—The species included in this order are all perennial plants, which were formerly included in the genus *Fumaria*, and afterwards in that of *Corydalis*. The name of *Dielytra* is from *dis*, double, and *elytron*, a sheath, alluding to the two sheath-like spurs at the base of the flower. The flowers of the species are produced in racemes, and are yellowish or pinkish, and the roots are generally tuberous. The leaves nearly all spring from the root, and they are generally on long stalks, and much cut. The species are all quite hardy, and of very easy culture, being easily increased either by dividing the root, or by seeds.

1.—DIELYTRA CUCULLARIA, *Dec.* THE HOODED DIELYTRA.

SYNONYMS.—*Fumaria cucullaria*, *Lin.*; *Corydalis cucullaria*, *Pers.*; *Cucullaria bulbosa*, *Raf.*; Dutchman's Breccles, *Amer.*; two-spurred Fumitory.

ENGRAVINGS.—*Bot. Mag.* t. 1127; and our *fig.* 6 in Plate 16.
SPECIFIC CHARACTER.—Spurs two, straight, acute; scape naked; raceme simple.

DESCRIPTION, &c.—The flowers of this species are very remarkable in their shape and colour. The two horns or spurs of the flower are white, tipped with bright yellow at the upper end. Notwithstanding the oddness of their shape, the flowers are pretty from the brilliancy of the white spurs, and the contrast it affords to the bright yellow of the upper part of the flower. The root is tuberous, and very bitter. This species is a native of North America, whence it was introduced in 1731. It grows nearly a foot high, and flowers from May to July. It grows freely in any light rich garden soil, and forms a very pretty border flower.

2.—DIELYTRA FORMOSA, *Dec.* THE BEAUTIFUL DIELYTRA.

SYNONYMS.—*Fumaria formosa*, *Andr.*; *Corydalis formosa*, *Pursh.*; *C. biaurita*, *Horn.*; bluish Fumitory.

ENGRAVINGS.—*Bot. Rep.* t. 393; *Bot. Mag.* t. 1335; and our *fig.* 5 in Plate 16.

SPECIFIC CHARACTER.—Spurs 2, short, somewhat incurved, blunt; scape naked; racemes rather compound; stigma 2-angled. (*G. Don.*)

DESCRIPTION, &c.—This very beautiful species was one of the many showy plants discovered by the late Mr. Menzies at Nootka Sound; and it was introduced by him in 1796, being first planted in the royal garden at Kew. It is very ornamental, from its beautiful pink flowers. The root is fleshy and creeping, so that a single plant soon spreads into a tuft. It is quite hardy, and it will grow well in any common garden soil.

3.—DIELYTRA EXIMIA, *Dec.* THE CHOICE DIELYTRA.

SYNONYME.—*Fumaria eximia*, *Ker.*
ENGRAVINGS.—*Bot. Reg.* t. 50.

SPECIFIC CHARACTER.—Spurs 2, somewhat incurved, blunt, short; scape naked; racemes compound; stigma four-angled. (*G. Don.*)

DESCRIPTION, &c.—This species is nearly allied to the last, but the flowers are larger and more purple. It is a native of North America, whence it was introduced by the botanical collector, Lyon, in 1812. In the Botanical Register it is called "the most ornamental plant of the genus; and in a situation that suits it, it soon forms a large close tuft, throwing up stems of nearly three feet in height, with bunches of flowers in proportion. The foliage is of considerable breadth, and of a peculiarly lively and tender green." It blooms in May and June, is perfectly hardy; and it is propagated by dividing the tuberous knots that compose the root.

OTHER SPECIES OF DIELYTRA.

D. SPECTABILIS, *Dec.*

A very showy plant, with flowers nearly an inch long, closely allied to *D. eximia*. A native of Siberia, introduced in 1816; but soon lost, and re-introduced from China in 1846.

D. BRACTEOSA, *Dec.*

This species is nearly allied to *D. cucullaria*, and the flowers are white, tipped with yellow. It is a native of North America, and was introduced in 1823.

D. TENUIFOLIA, *Dec.*

The flowers are very large, and of a pale pink, tipped with a darker and more intense colour. It is a native of Kamtschatka, and was introduced in 1824.

D. CANADENSIS, *Dec.*

A native of Canada, with white or purple flowers, and glaucous leaves; introduced in 1823.

D. LACHENALIÆFLORA, *Dec.*

A native of Siberia, nearly allied to *D. tenuiflora*, but with smaller flowers. A native of Siberia, introduced in 1824.

GENUS II.

CORYDALIS, *Dec.* THE CORYDALIS.*Lin. Syst.* DIADELPHIA HEXANDRIA.

GENERIC CHARACTER.—Petals 4, the upper one of which has a spur at the base; sometimes all joined at the base, and sometimes with the lower one free, and the rest joined; but when they begin to decay, they all become free and deciduous. Stamens diadelphous. Capsules 2-valved, compressed, oval-oblong, linear, many-seeded, smooth.

DESCRIPTION, &c.—The species comprised in this genus have only a single spur, drawn out at the base; and hence the genus is called *Corydalis*, which signifies a lark, from the long spur of the flower bearing some resemblance to that of the bird.

1.—CORYDALIS LONGIFLORA, *Pers.* THE LONG-FLOWERED CORYDALIS.

SYNONYMS.—*Fumaria longiflora*, *Willd.*; *F. Schongini*, *Pall.*; *F. caudata*, *Lam.*; *Corydalis caudata*, *Pers.* under the leaves; leaves bi-ternate; segments three-parted; lobes oval-oblong; bractees oblong, entire; racemes elongated, ten-flowered; style longer than the pedicels. (*G. Don.*)

ENGRAVINGS.—*Bot. Mag.* t. 3230; and our fig. 4, Plate 16.

SPECIFIC CHARACTER.—Stem simple, furnished with leafy scales

DESCRIPTION, &c.—This species has delicate flowers with long tails, white, tipped with pink. The leaves are glaucous, and the root is a globular tuber about the size of a hazel-nut. The leaves all spring from the root. The species is a native of the Altaic Mountains, whence it was introduced in 1832. It is quite hardy.

2.—CORYDALIS TUBEROSA, *Dec.* THE HOLLOW-ROOTED FUMITORY.

SYNONYME.—*Fumaria cava*, *Lin.* nate; segments cuneated, cleft; bractees ovate, entire; root hollow. (*G. Don.*)

ENGRAVINGS.—*Bot. Mag.* t. 232; and our fig. 3, in Pl. 16.

SPECIFIC CHARACTER.—Stem simple, not scaly; leaves 2, bi-ter-

DESCRIPTION, &c.—This species is remarkable for having a hollow root; the tuber of which it consists being, as Parkinson observes, "like a shell, every part of which when broken will grow." This hollow tuber sometimes attains a large size, but it never thickens, the cavity increasing in exact proportion to the size of the outer covering. The flowers are pink, with very large greenish bracts, which are entire, instead of being cut as in some of the species. It is a native of Germany, whence it was introduced before 1596. There are three varieties; the flowers of one being white, another pink, and the third purple. They are all quite hardy in British gardens, where they will flower from March till the beginning of May; but as they rarely produce any seed, they are propagated by dividing the root. Any garden soil will be suitable, but a shady situation is to be preferred. The pink-flowered kind is most common, the white and purple varieties being very rare

3.—CORYDALIS BULBOSA, *Dec.* THE SOLID-ROOTED FUMITORY.

SYNONYME.—*Fumaria selida*, *Smith*; *C. selida*, *Smith*; *C. Halleri*, *Willd.*

ENGRAVING.—*Eng. Bot.* t. 1471; 2nd edit. t. 983.

SPECIFIC CHARACTER.—Stem simple, erect, scaly under the lower

leaf; leaves three or four, stalked, bi-ternate; segments cuneated or oblong, and as well as the bracteas cut at the top. Root solid. (*G. Don.*)

DESCRIPTION, &c.—This species, though nearly allied to the last, differs in the tuber being solid, and in the bracteas being cut. The flowers are large and purple, and the leaves are glaucous. It rarely bears seed, but it increases so rapidly by means of its tubers, that when once introduced, it is not easily eradicated. It will grow in any common garden soil, and it flowers in April and May. It is said to be a native of Britain, but it is very doubtful whether it is so really.

4.—CORYDALIS BRACTEATA, *Dec.* THE BRACTEATED CORYDALIS.

SYNONYME.—*Fumaria bracteata*, *Steph.*

ENGRAVINGS.—*Bot. Mag.* t. 3242; and our *fig. 2*, in *Pl. 16*.

SPECIFIC CHARACTER.—Stem simple, erect, scaly near the base;

leaves two, bi-ternate; segments cleft into linear lobes; bracteas cuneated, profoundly cut at the apex, longer than the peduncles; spurs straight, long. (*G. Don.*)

DESCRIPTION, &c.—A very singular-looking plant, which would scarcely be recognised at first sight as belonging to the genus. The flowers are large, of a pale yellow, and with a large gaping mouth; and the leaves are shaped like fans. The species is a native of the Altaic Mountains, and it was introduced in 1832.

5.—CORYDALIS NOBILIS, *Dec.* THE NOBLE CORYDALIS.

SYNONYME.—*Fumaria nobilis*, *Willd.*; Great-flowered Fumitory.

ENGRAVINGS.—*Bot. Mag.* t. 1953; *Bot. Reg.* t. 395; and our *fig. 1* in *Plate 16*.

SPECIFIC CHARACTER.—Stem simple, erect, not scaly; leaves bipinnate; segments cuneated, cut at the top; bracteas acute, entire, or cut. (*G. Don.*)

DESCRIPTION, &c.—A strong-growing plant, with numerous stem leaves, and a thick succulent stem. The flowers all grow on one side, and in a cluster together. This species does not flower till May. It is a native of Siberia, introduced in 1783; and being quite hardy, it will grow in any soil and situation. The root is tuberous, and the species is propagated by dividing it. The flowers are very large, and they have very nearly the fragrance of the cowslip.

6.—CORYDALIS AUREA, *Willd.* THE GOLDEN CORYDALIS.

SYNONYME.—*Fumaria aurea*, *Ker.*

ENGRAVING.—*Bot. Reg.* t. 66.

SPECIFIC CHARACTER.—Stem diffuse, branched; leaves glaucous,

bi-pinnate; leaflets pinnatifid and cut; lobes oblong-linear; bracteas lanceolate-linear, acuminate, denticulated, and, as well as the linear ternate capsules, four times longer than the pedicels. (*G. Don.*)

DESCRIPTION, &c.—This species is a pretty little plant, with golden yellow flowers, pink stems, and glaucous leaves. It is a native of North America, whence it was introduced in 1812. It is a very pretty plant for a flower-garden, from the great profusion and golden hue of its flowers; but it is not so hardy as some of the other kinds, as it is easily destroyed either by a very severe or a very wet winter.

7.—CORYDALIS LUTEA, *Dec.* THE YELLOW CORYDALIS.

SYNONYME.—*Fumaria lutea*, *Lin.*; *Corydalis capnoides*, *Mac.*

ENGRAVING.—*Eng. Bot.* t. 588; 2nd edit. t. 984.

SPECIFIC CHARACTER.—Stem branched, diffuse; leaves bi-ternate;

segments obovate, cuneated, trifid; bracteas linear-subulate, three times shorter than the pedicel; pods nearly cylindrical, narrow, shorter than their pedicels. (*G. Don.*)

DESCRIPTION, &c.—This species is nearly allied to the last, but the flowers are of a much paler yellow, and not so abundant. It is frequently found on old walls in England, but it is a doubtful native. The root is fibrous







1. *Corydalis mobilis*. 2. *Corydalis bracteata*. 3. *Corydalis tuberosa* (cava). 4. *Corydalis longiflora*.
 5. *Delytra foemosa*. 6. *Delytra lucullaria*.

and tufted, and it insinuates itself firmly between the crevices of bricks and stones. It is thus well adapted for rockwork; but it is apt to become troublesome in borders, as it ripens abundance of seed, which it sows itself when ripe. It grows best in dry situations, as even this species may be killed by a damp winter.

OTHER SPECIES OF CORYDALIS.

C. PAUCIFLORA, Dec.

A native of Siberia, with large purple flowers; introduced in 1823.

C. MARSHALLIANA, Dec.

A native of Tauria, introduced in 1823, with striped flowers.

C. FABACEA, Dec.

The flowers are large and purple. The species is a native of Germany; introduced in 1815.

C. ANGUSTIFOLIA, Dec.

Flowers purple. A native of Iberia; introduced in 1823.

C. PÆONIÆFOLIA, Dec.

A native of Siberia, with purple flowers; introduced in 1823.

C. CAPNOIDES, Pursh.

A species with white flowers, from the South of Europe; introduced before 1596.

C. SIBERICA, Dec.

A native of Siberia, with yellow flowers; introduced in 1825.

C. URALENSIS, Dec.

A native of Siberia, with yellow flowers; introduced in 1823.

There are several other species, but they are rarely met with.

CHAPTER VII.

CRUCIFERÆ.

CHARACTER OF THE ORDER.—Sepals four. Petals four, cruciate. Stamens six, hypogynous, tetradynamous. Fruit a silique, or silicle, rarely a valveless pericarp. (*G. Don.*)

DESCRIPTION, &c.—Cruciferous plants are so called from the four petals of their flowers being in the form of a cross; cruciferous signifying cross-bearing. All the species thrive best in rich soil, abounding with animal manure; and hence the great improvement produced in the culinary plants belonging to the order by cultivation. The wild cabbage and the wild turnip are harsh and stringy plants, and quite unlike the plants produced from them by sowing the seeds for several generations in rich soil. The ornamental flowers belonging to the order are also very greatly improved by planting in garden mould rendered rich by manure.

GENUS I.

BARBAREA, *R. Br.* THE HERB OF ST. BARBARA, OR WINTER CRESS.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliquo 4-sided, two-edged; valves concave-keeled, awnless at the apex. Calyx equal at the base. Seeds disposed in one series. (*G. Don.*)

DESCRIPTION, &c.—Most of the species belonging to this genus are cultivated only as affording a kind of winter or early spring salad; but the double-flowered variety of *B. vulgaris*, which is commonly called the double-yellow rocket, is very ornamental. The name of *Barbarea* alludes to the plant being vulgarly called the Herb of St. Barbara. The other species possess no beauty in their flowers.

1.—BARBAREA VULGARIS, *R. Br.* THE COMMON HERB OF SAINT BARBARA, OR YELLOW ROCKET.SYNONYMS.—*Erysimum Barbarea*, *Lin.*; *E. lyræfolium*, *Stok.*ENGRAVINGS.—*Eng. Bot.* t. 443; and our *fig. 2* in Pl. 17.

SPECIFIC CHARACTER.—Lower leaves lyrate, terminal lobe roundish;

upper leaves obovate, toothed, pinnatifid. Silique trigonal, linear, pointed with the style. (*G. Don.*)

DESCRIPTION, &c.—The species is a bitter mucilaginous herb, common in various parts of Europe, particularly in Great Britain, always growing in moist waste places. There are two varieties—one a slender plant of little beauty, and the other the double-yellow rocket of the gardens. This variety is a very showy border plant, and it may be propagated either by cuttings or suckers, or by dividing the root. It should be grown in a rich and somewhat moist soil; or if the soil be dry it should be frequently watered.

GENUS II.

ARABIS, *Lin.* THE WALL-CRESS.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Silique linear, with flat 1-nerved valves. Seeds oval or orbicular, compressed, one row in each cell. Cotyledons flat. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus are all dwarf, with very pretty little flowers, which are produced in such profusion as to produce masses of colour. The species are thus exceedingly well adapted for planting on rockwork, and in geometric flower-gardens, where the object is for each bed to present a distinct mass of colour. The name *Arabis* is said to be derived from Arabia, the native place of some of the species; but if so, it must be Arabia Petræa, as all the plants included in the order require to be planted in dry, stony, or sandy soil. All the species are quite hardy, and they are all propagated by dividing the roots.

1.—ARABIS ROSEA, *Dec.* THE ROSE-COLOURED ARABIS.ENGRAVINGS.—*Bot. Mag.* t. 3246; and our *fig. 6* in Pl. 17.

SPECIFIC CHARACTER.—Stem-leaves oblong, somewhat stem-clasping, sub-cordate, sinuately-dentate; pubescently rough, with branched hairs.

Pedicels longer than the calyx. Silique linearly-oblongated, sub-attenuated, erect.

DESCRIPTION, &c.—This species has an erect stem, three or four inches high, which is quite downy. The leaves are oblong, deeply toothed, or scalloped, slightly clasping the stem at the base, and covered with little stars

of branched hairs. The flowers are rather large; and they are disposed in dense, rounded racemes. The seed-pods are very long and slender, and they appear disposed in tufts like little rods, about three inches in length. The calyx is large, and the sepals erect and pointed; while the petals are somewhat recurved. The species is a native of Calabria, whence it was introduced in 1832. It appears hardy, but it seldom flowers well, unless slightly protected during winter; as its flowers appear in February, and its seeds ripen in March.

2.—ARABIS ALPINA, *Lin.* THE ALPINE WALL-CRESS.

SYNONYME.—*Draba alba*, *Banks.*

ENGRAVINGS.—*Bot. Mag.* t. 226; and our *fig.* 7 in Pl. 17.

SPECIFIC CHARACTER.—Leaves many-toothed, lanceolate, acute,

villous with branched hairs, radical ones somewhat stalked, cauline ones cordate, clasping the stem; pedicels longer than the calyx, which is smoothish. (*G. Don.*)

DESCRIPTION, &c.—This is a pretty little hardy plant, with white flowers, which it produces in great abundance in April and May. It is a native of the mountainous parts of Switzerland, Austria, and Lapland; and it was certainly introduced before 1658, as its name is included in a list of plants growing in the Bot. Gard. at Oxford in that year; indeed in some catalogues it is said to have been introduced in 1596. There are two varieties, one with fewer leaves, and consequently less ornamental; while the other is a dwarf plant but just rising above the ground. Both the species and the varieties are quite hardy, and they will grow in any soil or situation; though they flower best on rockwork, or in a warm, rather dry border, exposed to the sun.

3.—ARABIS ALBIDA, *Stev.* THE WHITE WALL-CRESS.

SYNONYMS.—*A. caucasica*, *Willd.*; *A. alpina*, *Pall.*; *Cheiranthus mollis*, *Horne*; White Alyssum.

ENGRAVING.—*Bot. Mag.* t. 2046.

SPECIFIC CHARACTER.—Leaves few-toothed, hoary, or dowdy, with branched hairs; radical leaves obovate-oblong, cauline ones cordately-sagittate, clasping the stem; pedicels longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This and the preceding species are two of the most valuable dwarf perennials in British flower-gardens, as they grow so compactly and form such a brilliant mass of white as to be useful in all cases where the beds form a regular figure. *A. albida* is a native of Tauria, whence it was introduced in 1798. It is quite hardy, and requires no care in its cultivation after its first planting. It is propagated by dividing the root; and it will flower from February to June.

OTHER SPECIES OF ARABIS.

There are several British species of this genus, which are rather pretty, particularly the common rock-cress, *A. petraea*; but they are scarcely worth the trouble of cultivating. *A. collina*, a Neapolitan species, and some other kinds that are natives of Europe, have pretty flowers when viewed separately; but they are so small, and grow so far apart on a long slender stalk, as to have only a weedy effect in a garden.

GENUS III.

CARDAMINE, *Lin.* THE BITTER CRESS.

Lin. Syst. TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliqua linear, with flat nerveless valves, usually opening with elasticity. Seeds in one series, ovate, not margined. Umbilical cord slender. Cotyledons accumbent. (*G. Don.*)

DESCRIPTION, &c.—The prettiest of the numerous species of this genus are British plants, which are rarely cultivated in gardens, from their great abundance in the open country. The prettiest of these British species is

C. bellidifolia, which scarcely rises higher than a tuft of moss, and yet has daisy-like leaves, and produces abundance of lively-looking white flowers. The common Lady's Smock (*C. pratensis*) takes its English name from its flowers being produced in such abundance in the meadows as to give them the appearance of a bleaching-ground, or of being covered with clothes from a wash, laid on the grass to dry. This plant is also sometimes called cuckoo-flower, from its blossoming when the cuckoos sing. Of the species which are natives of the South of Europe, the handsomest are *C. asarifolia*, Bot. Mag. t. 1735; and *C. trifolia*, Bot. Mag. t. 452; both marsh plants, which should be grown in bog earth, in moist, shady situations. All the Cardamines are anti-scorbutic; and they are said to be very efficacious in diseases of the heart. The derivation of the name Cardamine is from *kardia*, the heart, and *damao*, to subdue. The plants are warmly stomachic, and they have the flavour of water-cress. The flowers of all the species are either white or reddish; and they are disposed in erect, terminal racemes, without bracts.

GENUS IV.

DENTARIA, Dec. TOOTHWORT, OR CORAL-ROOT.

Lin. Syst. TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliqua narrow-lanceolate, tapering; valves flat, ribless, generally separating elastically. Seed-stalks broad. Seeds ovate, not bordered, in one row. Cotyledons accumbent. (*Smith.*)

DESCRIPTION, &c.—The plants contained in this genus are generally natives either of Europe or North America. They have all fleshy under-ground stems or main roots, which have a pungent taste, and which are sometimes used instead of pepper and other condiments in the United States. These fleshy roots are irregularly toothed, and hence the name of the genus, from *dens*, a tooth. The flowers are generally crimson or purplish; but they are sometimes white.

1.—DENTARIA BULBIFERA, *Smith.* THE BULB-BEARING DENTARIA.

ENGRAVING.—Eng. Bot. t. 309; 2d ed. t. 921.

SPECIFIC CHARACTER.—Stem simple. Lower leaves pinnated; upper ones simple, with axillary bulbs. (*Smith.*)

DESCRIPTION, &c.—This very curious British plant, though it has a creeping under-ground stem, indented with marked and very conspicuous teeth, frequently propagates itself by bulbs, which it produces in the axils of its leaflets. These bulbs are oval, scaly, and dark purple; and, when ripe, they drop off, serving thus to propagate the plant, which rarely matures seeds. The flowers bear considerable resemblance to those of the common stock. They are of a reddish purple, and appear in April and May. This species, though ornamental, is rarely cultivated, as it will only thrive in a moist shady situation.

2.—DENTARIA PENTAPHYLLA, *Sims.* FIVE-LEAVED TOOTHWORT.

SYNONYMES.—*D. pentaphyllos*, *Ait.*; *D. digitata*, *Lam.*; *Cardamine pentaphylla*, *R. Br.*; *Saxifraga denticulata*, *Gesn.*; *Viola dentaria*, *Dod.*; *Alabastris nemoralis*, *Lob.*

ENGRAVINGS.—Bot. Mag. t. 2202; and our *fig. 5* in Plate 17.

SPECIFIC CHARACTER.—Leaves 3, in a whorl, or alternate, stalked, pinnate; segments 7 or 9; approximate, lanceolate, acuminate, serrated. (*G. Don.*)

DESCRIPTION, &c.—A showy dwarf plant, the flowers of which are very curiously veined. It is a native of France, and other parts of central Europe, whence it was introduced before 1659. It requires a light sandy soil, and a moist shady situation; and it is always increased by dividing the roots, as it very seldom ripens seeds.





1 *Vesicaria utriculata* — 2. *Barbarea vulgaris*. — 3. *Alyssum saxatile*. — 4. *Alyssum montanum*
 5. *Dentaria pentaphylla*. — 6. *Arabis rosea*. — 7. *Arabis alpina*. — 8. *Aubrieta deltoidea*.
 9. *Fluekensis stylosa*.

3.—DENTARIA DIPHYLLA, *Michaux.* AMERICAN PEPPERWORT.

ENGRAVING.—Bot. Mag. t. 1465.

SPECIFIC CHARACTER.—Cauline leaves 2, alternate, on short stalks,

cut into three ovate-lanceolate, grossly and unequally serrated lobed segments. (*G. Don.*)

DESCRIPTION, &c.—This plant grows chiefly in Canada, but it is found in other parts of North America. The inhabitants dry the root and use it instead of mustard or pepper. The flowers are white, tinged with pink, and the leaves are large. It is a hardy plant, and may be propagated by dividing its roots.

OTHER SPECIES OF DENTARIA.

D. POLYPHYLLA, *Dec.*

A native of Hungary, introduced in 1817. The flowers are striped.

D. ENNEAPHYLLA, *Dec.*

A native of Austria, with white flowers, introduced in 1656.

D. MAXIMA, *Dec.*

A species with large white flowers; a native of North America, introduced in 1823.

D. LACINIATA, *Dec.*

The flowers are white. The species is a native of North America, and was introduced in 1823.

Besides the above, there are several other species; several of which are natives of Siberia. There are also some other genera nearly connected with the above, which are not worth enumerating, because they are not sufficiently ornamental.

GENUS V.

AUBRIETIA, *Adams.* THE AUBRIETIA.*Lin. Syst.* TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Silicle oblong, with convex valves. Seeds not margined. Calyx bisaccate at the base. Petals entire. Smaller stamens toothed. Small evergreen pilose herbs, with ovate or oblong,

entire or angularly toothed leaves, which are covered with simple and branched hairs. Racemes opposite the leaves and terminal, lax, finely flowered. Pedicels filiform, bractless. (*G. Don.*)

DESCRIPTION, &c.—Aubrietia is named in honour of M. Aubriet, a famous French botanical draughtsman. The species are dwarf hardy plants.

1.—AUBRIETIA DELTOIDEA, *Dec.* THE SPREADING AUBRIETIA.

SYNONYMS.—*Alyssum deltoideum*, *Lin.*; *Leucejum saxatile*, *Banks*; *Farselia deltoidea*, *R. Br.*; *Vesicaria deltoidea*, *Poir.*

ENGRAVINGS.—Bot. Mag. t. 126; and our fig. 8 in Plate 17.

SPECIFIC CHARACTER.—Pedicels longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This plant, though not remarkably handsome, has the advantage, if we may call it so, of beginning to flower in March, and continuing to April or May, and if in a favourable situation, during most of the summer. Being properly a rock plant, with little care it will form a neat tuft on rockwork without encroaching on the others. It may be easily propagated by dividing its roots in autumn, or by cuttings. It is very hardy. It is a native of Naples, and was introduced in 1710.

2.—AUBRIETIA PURPUREA, *Dec.* THE PURPLE AUBRIETIA.

SYNONYMES.—*Arabis purpurea*, *Smith*; *Draba hesperidifolia*, *Lam.* ENGRAVING.—*Swt. Brit. Flow. Gard.* t. 207.

SPECIFIC CHARACTER.—Pedicels shorter than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This pretty little plant has the same advantage as the other, and is very much like it, with the exception that the flower is smaller, and it is less hardy; it stands our winters very well unprotected, growing in light sandy soil. It may be propagated by cuttings under a hand-glass, or seed; if the cuttings be kept in small pots until they have taken root, they will flower well in the open air. It is also more straggling than *A. deltoidea*. It is a native of Bithynia, whence it was introduced in 1821.

GENUS VI.

VESICARIA, *Lam.* THE VESICARIA.

Lin. Syst. TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Silicle globose, inflated, with hemispherical valves. Seeds many, generally beyond 8, usually margined. Petals entire. Stems shrubby at the base, branched, round. Leaves oblong, or linear-entire, or somewhat sinuated. Racemes terminal. Pedicels bractless, filiform. (*G. Don.*)

DESCRIPTION, &c.—This genus takes its name from *vesica*, a blister or bladder, in allusion to the inflated pods. There are several species, all with yellow flowers; but only a few of them are cultivated in gardens.

1.—VESICARIA UTRICULATA, *Lam.* THE GLOBE-PODDED VESICARIA.

SYNONYMES.—*Alyssum utriculatum*, *Lin.*; *A. Oederi* var. *Durand.*; *Myagrum utriculatum*, *Berg.*; Bladder-podded *Alyssum*. ENGRAVINGS.—*Bot. Mag.* t. 130; and our *fig.* 1 in Plate 17. SPECIFIC CHARACTER.—Calyx bisaccate at the base; leaves somewhat oblong, quite entire, smooth; lower ones ciliated, somewhat spatulate. (*G. Don.*)

DESCRIPTION, &c.—A very handsome hardy plant, the flowers and general appearance of which greatly resemble those of the wallflower; except in being always yellow, and their being succeeded by membranaceous globular pods, which, each retaining its needle-like style, have a very singular appearance. The species is a native of the Levant, whence it was introduced in 1739. It should be grown in a dry soil, and it may be propagated by cuttings, or seeds, which it ripens in great abundance.

2.—VESICARIA ARENOSA, *Rich.* THE SAND VESICARIA.

SYNONYME.—*V. urtica*, *Hook.* ENGRAVING.—*Bot. Mag.* t. 2882. SPECIFIC CHARACTER.—Lower leaves somewhat rhomboid, obsolete; sinuate-toothed, grey with stellate down; stem round, enfruticose at the base. Pods globose, pubescent. (*G. Don.*)

DESCRIPTION, &c.—A pretty little plant, with small yellow flowers; very suitable for rockwork, as it grows in spreading tufts. It is a native of North America, within the Arctic zone; and it was introduced in 1829.

OTHER SPECIES OF VESICARIA.

Only two other species have been introduced, viz.:—*V. Ludoviciana*, a native of North America, in 1825; and *V. sinuata*, a native of Spain, introduced before 1596.

GENUS VII.

ALYSSUM, *Lin.* MADWORT.*Lin. Syst.* TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Silicle roundish. Seeds two in each cell. Calyx equal at the base. Petals emarginate. Stamens all or some of them toothed.

DESCRIPTION, &c.—The perennial species belonging to this genus, differing slightly from the annual kinds in the seeds and seed-pods, have been made into a new genus called *Adyseton*, which has been adopted by some botanists, though not generally. As I exceedingly dislike changing established names, especially when they have become so popular as that of *Alyssum saxatile*, I have retained the old name, though all the plants I shall describe are included in the new genus. *Alyssum* is derived from *a*, not, and *lysa*, rage; and it is applied to these plants from their supposed power of calming madness.

1.—ALYSSUM SAXATILE, *Lin.* THE ROCK ALYSSUM.

SYNONYMS.—*Adyseton saxatile*, *Scep.*; *Aurinia saxatilis*, *Desv.*; *Alyssum Creticum*, *Tourn.*; *Thlaapi luteum*, *Boee.*; Yellow Alyssum; Corbille d'Or.

ENGRAVINGS.—*Bot. Mag.* t. 159; and our *fig. 3* in Plate 17, under the name of *Adyseton saxatile*.

SPECIFIC CHARACTER.—Stems suffruticose at the base, somewhat corymbose; leaves lanceolate, entire, clothed with hoary tomentum. Stamens furnished with a tooth on each side. Pods obovate, orbicular, 2-seeded; seeds margined.

DESCRIPTION, &c.—Few plants are better known or more valued in gardens than *Alyssum saxatile*. Its brilliant yellow flowers, which are produced in a dense mass, and its dwarf growth, render it particularly useful for either regular flower-beds or rock-work; and there are few prettier border flowers. It is quite hardy, and requires no other care than planting it in a light dry soil. It is propagated by dividing the root, or by cuttings, which strike readily in sand.

2.—ALYSSUM MONTANUM, *Lin.* THE MOUNTAIN ALYSSUM.

SYNONYMS.—*Adyseton montanum*, *G. Don*; *Clypeola montana*, *Crantz*.

ENGRAVINGS.—*Bot. Mag.* t. 419; and our *fig. 4*, in Plate 17, under the name of *Adyseton mentanum*.

SPECIFIC CHARACTER.—Stems rather herbaceous, diffuse, pubescent; leaves somewhat hoary, lower ones obovate, upper ones oblong; racemes simple; pods orbicular and somewhat emarginate, grey.

DESCRIPTION, &c.—This species is very small, and rather pretty; it is indeed very much like *A. saxatile*, except in being smaller in all its parts. It is a native of the mountains of Switzerland, whence it was introduced in 1759. It is quite hardy; and as it is of slow growth, and only requires to be grown in dry sandy soil, it is very suitable for rock-work. It is generally propagated by cuttings.

OTHER SPECIES OF ALYSSUM.

These are very numerous, and they are all hardy and with yellow flowers. They are not worth, however, enumerating, as they are very seldom seen in British gardens.

GENUS VIII.

DRABA, *Lin.* THE WHITLOW GRASS.*Lin. Syst.* TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Silicle sessile, oval or oblong, with flat or convex valves. Seeds many, net margined. Calyx equal at the base. Petals entire. Stamens all toothless. (*G. Don.*)

DESCRIPTION, &c.—Most of the species are little tufted evergreen plants, the leaves of which are generally ovate, and the flowers in terminal racemes. The flowers are white, or yellow. Generally only one species is cultivated in gardens; though the British kind, *D. aizoides*, has a very pretty effect in a tuft. *D. pyrenaica*, which looks like a miniature house-leek, and the flowers of which are either rose-coloured, or white tinged with pink, is now placed in a new genus called *Petrocallis*.

I.—DRABA BRACHYSTEMON, *Dec.* THE SHORT-STAMENED WHITLOW GRASS.

SYNONYMS.—*D. aizoides*, *Curt.*; *D. ciliaris*, *Lin.*; *Sedum alpinum*, *Bauh.*; *Leucogonum luteum*, *Col.*; Sea-green Draba.

ENGRAVINGS.—*Bot. Mag.* t. 170; and our *fig. 11*, in Plate 18.

SPECIFIC CHARACTER.—Scapes naked, smooth. Leaves elongated, linear, keeled, ciliated. Stamens hardly equal in length to the calyx. (*G. Don.*)

DESCRIPTION, &c.—This pretty little plant never looks well but in a tuft, and then it has a very good effect on rock-work. It is a native of the German Alps, whence it was introduced before 1759. It begins to flower in March, and continues in blossom about six weeks.

GENUS IX.

HUTCHINSIA, *B. Br.* THE HUTCHINSIA.*Lin. Syst.* TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Silicle elliptical, with navicular wingless valves. Cells 2-seeded, or many-seeded. Calyx equal at the base. Petals equal. (*G. Don.*)

DESCRIPTION, &c.—There are numerous species; all of which are dwarf plants, only suited for rock-work, or growing in small pots on an alpine shelf. The soil should be a mixture of loam, sand, and peat; and the plants may be increased by dividing the roots, by seeds which they ripen in great abundance, or by cuttings.

I.—HUTCHINSIA STYLOSA, *Dec.* THE LONG-STYLED HUTCHINSIA.

SYNONYMS.—*Iberis stylosa*, *Ten.*; *Thlaspi minimum*, *Ard.*

ENGRAVINGS.—*Bot. Mag.* t. 2772; and our *fig. 9*, in Plate 17.

SPECIFIC CHARACTER.—Leaves somewhat fleshy, lower ones stalked,

obovate-oblong, almost entire, cauline ones oblong; stamens, petals, and style about the length of the pod. (*G. Don.*)

DESCRIPTION, &c.—This pretty little plant does not grow above two or three inches high, but it throws up several flower-stems, each bearing clusters of flowers, from each root. A native of Naples, found on rocks. Introduced in 1821.

GENUS X.

IBERIS, *Lin.* THE CANDY TUFT.*Lin. Syst.* TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Petals 4, two outer ones longest. Silicle much compressed, truncately emarginate. Seeds ovate, pendulous. (*G. Don.*)

DESCRIPTION, &c.—The annual and perennial species of Candy Tuft bear so strong a likeness to each other as to be easily recognised at a glance. Some of the perennial species are half shrubby. The flowers are produced in large corymbose racemes, which in several of the species are elongated, and take somewhat of a spike-like character. This is the case, especially, with one of the annual species; but the flowers of the perennial species are generally corymbose. The name of Iberis is derived from Iberia, the ancient name for Spain, because some of the species are natives of that country.

1.—IBERIS TENOREANA, *Dec.* PROFESSOR TENORE'S CANDY TUFT.

SYNONYME.—*I. cepefolia*, *Tenore.*

ENGRAVINGS.—*Swt. Brit. Fl. Gard.* t. 88; *Bot. Mag.* t. 2788; and our *fig. 6* in Plate 18.

SPECIFIC CHARACTER.—Stems suffrutescent at the base; leaves somewhat fleshy, cuneated, lower ones obovate.

DESCRIPTION, &c.—This species, which is a native of Naples, introduced in 1822, is very valuable, from the great length of time it continues in flower. Its flowers also are very handsome, as the bright red calyxes of those which are unopened give a beautiful tinge of pink to those which are fully expanded; and they all become pink as they die off. It is quite hardy in any common garden soil, and it is generally propagated by cuttings.

2.—IBERIS SAXATILIS, *Lin.* THE ROCK CANDY TUFT.

SYNONYMES.—*I. Gartexiana*, *Scop.*; *I. s. β corifolia*, *Sims*; *I. corifolia*, *Sweet.*

ENGRAVINGS.—*Bot. Mag.* t. 1642; and our *fig. 7* in Plate 18.

SPECIFIC CHARACTER.—Frutescent. Leaves linear, entire, fleshy. Flowers corymbose.

DESCRIPTION, &c.—This pretty little plant is a native of the mountains of the south of Europe, where it is generally found growing on limestone rocks. It is quite hardy, but it requires a calcareous or sandy soil. It flowers in spring, and is propagated by seeds, which it ripens freely. The plant figured in Plate 18 is a variety, differing principally in the leaves, which in the species are pointed and hairy, while in the variety they are smooth and blunt.

3.—IBERIS CILIATA, *All.* THE FRINGED CANDY TUFT.

SPECIFIC CHARACTER.—Herbaceous, smoothish; leaves linear, entire, ciliated at the base; pods corymbose, emarginate; lobules blunt, equal in length with the style. (*G. Don.*)

DESCRIPTION, &c.—A very pretty little plant, most suitable for rock-work, which flowers in May or June. It is a native of Caucasus, and was introduced in 1759. It is propagated by seeds, and is quite hardy.

OTHER SPECIES OF IBERIS.

There are several other species, but with a few exceptions they differ so little in flowers and treatment as scarcely to be worth cultivating. The principal exception is *I. carnosa*, a pretty little plant, very nearly allied to *I. Tenoreana*.

GENUS XI.

MALCOMIA, *R. Br.* THE MALCOMIA.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.GENERIC CHARACTER.—Siliqua roundish. Stigma simple, much pointed. (*G. Don.*)

DESCRIPTION, &c.—This genus is best known by the little annual plant generally called Virginia Stock. The name of the genus was given to it by Dr. Robert Brown, in honour of the late Mr. Malcolm, a nurseryman at Kensington.

1.—MALCOMIA LITTOREA, *R. Br.* THE SEA-SIDE MALCOMIA.

SYNONYMES.—*Cheiranthus littoreus*, *Lin.*; *Hesperis littorea*, *Lam.*
ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 54; and our *fig. 4*, in
Plate 18.

SPECIFIC CHARACTER.—Stems many, erect; leaves lanceolate-linear,
almost entire, hoary with short down. Pedicels the length of the
calyx. Pods hoary. (*G. Don.*)

DESCRIPTION, &c.—A biennial plant which sends up several stems from the same root, and grows about a foot high. It is a native of the south of Europe, growing in the sandy shores of the Mediterranean. It is quite hardy in British gardens, and it will grow in any common soil. It is propagated by seeds. It was introduced before 1683.

OTHER SPECIES OF MALCOMIA.

M. ALYSSOIDES, *Dec.*; HESPERIS ALYSSOIDES, *Pers.*

A dwarf plant, a native of Portugal, not yet introduced.

M. PATULA, *Dec.*; H. ARENARIA, *Lag.*

This plant is a native of sandy places near Madrid. It is not above six inches high; and if introduced, it would make a pretty plant for rock-work, as it has large purple flowers, and greyish downy leaves.

GENUS XII.

HESPERIS, *Lin.* THE ROCKET.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliqua roundish, or somewhat four-sided. Stigmas two, erect, connivent. Calyx bisaccate at the base. Seeds oblong,
somewhat triquetrous. Stamens all toothless. (*G. Don.*)

DESCRIPTION, &c.—This genus takes its name from the plants included in it being most fragrant in the evening; many of them, indeed, having no fragrance during the day. The species are generally biennial; but some are perennial, and some annual: and they have all fibrous roots. They are all hardy, and of easy culture in any common garden soil. They are also all natives of Europe, or the north of Africa.







1. *Hesperis grandiflora*. — 2. *Hesperis specaosa*. — 3. *Hesperis fragrans*. — 4. *Malcmea litorrea*. — 5. *Morucandia avensis*.
 6. *Heis Tenocara*. — 7. *Heis saxatilis*. — 8. *Moresia hypogaea*. — 9. *Erysimum ibericum*. — 10. *Esthemema mombianacum*.
 11. *Draba brachystemon*.



1.—*HESPERIS MATRONALIS*, *Lin.* THE COMMON ROCKET, OR DAMES' VIOLET.

VARIETIES.—There are three forms of this species: one, *H. m. hortensis*, which is a native of various parts of Europe, but most common in Germany, and was introduced before 1597, has sweet-scented flowers, and ovate-lanceolate leaves; the second, *H. m. sylvestris*, which is a native of Britain, and which is figured in Plate 18, has scentless flowers, and cordate leaves; and the third, *H. m. Siberica*, which is a native of Siberia, introduced in 1800, has

narrow sharply-pointed leaves—the latter is also found wild in various parts of the north of Europe.

ENGRAVINGS.—Eng. Bot. t. 731; 2d. edit. t. 949.

SPECIFIC CHARACTER.—Pedicels length of calyx; petals obovate; pods erect, torose, smooth, not thickened at the edge; leaves ovate-lanceolate, smooth. (*G. Don.*)

DESCRIPTION, &c.—This plant has long been a favourite garden flower; and the German ladies are said to be so fond of it in pots, that it has acquired the name of Dames' Violet. Parkinson calls it the Queen's Gilliflower, and Gerard Damask Violet. Besides the regular varieties enumerated, many sub-varieties are grown in gardens, such as the double purple Rocket, and the double white; but the most remarkable of these is the double green, a kind now rarely seen in gardens. All the kinds of Rocket are quite hardy, but they will not flower well unless they are grown in very rich soil, though not in soil enriched by recent manure. Experienced gardeners consider the trenches in which celery has been grown the previous year, as the best soil for the garden Rocket; as celery is a vegetable which requires a great deal of manure to make it fine, and the manner in which the ground is thrown up to make the trenches, thoroughly pulverizes the soil. The plants are either raised from seed, or propagated by dividing the roots. When grown to the greatest perfection they are transplanted every year, or every second year, after they have done flowering, into fresh soil of the nature already mentioned; care being taken to form a pit to receive this soil a foot or eighteen inches deep. Where the soil from celery trenches cannot be procured, vegetable mould, mixed with part of an old hotbed, may be used; but it is essential that the soil should be rich, light, and friable. If thus treated, the double white and double purple varieties will have noble flowers, and will form a magnificent ornament to the flower-garden.

2.—*HESPERIS GRANDIFLORA*, *Sims.* THE LARGE-FLOWERED GARDEN ROCKET.

ENGRAVINGS.—Bot. Mag. t. 2683; and our *fig. 1*, in Plate 18.

SPECIFIC CHARACTER.—Pedicels longer than the calyx; petals

obovate; racemes many-flowered, crowded; radical leaves oblong-ovate, obtuse; cauline ones lanceolate, sessile. (*G. Don.*)

DESCRIPTION, &c.—This is a very showy species, growing to the height of three feet or more in rich soils and favourable situations. It requires the same treatment as *H. matronalis*, and if a double variety could be obtained, it would be a most splendid border flower. Neither the native country nor year of introduction is known, but it has been cultivated in British gardens since 1817; and as it appears quite hardy, it is probably a native of the north of Europe.

3.—*HESPERIS SPECIOSA*, *Sweet.* THE SHOWY ROCKET.

ENGRAVINGS.—Sweet's Brit. Flow. Gard. 2d ser. t. 135; and our *fig. 2*, in Plate 18.

SPECIFIC CHARACTER.—Stem suffrutescent at the base; branching; branches short, and clothed at the base with numerous, rigid, taper-pointed scales; and with the leaves, scape, and peduncles thickly

clothed with stellate tufts of hairs. Leaves sessile, lower ones spatulate, and tapering at the base; upper ones oblong-ovate, acuminate. Pedicels much shorter than the calyx. Siliques tetragonal, very hairy. Stigma capitate, indented at the apex.

DESCRIPTION, &c.—A beautiful little plant with rose-coloured flowers, which are first produced in a corymb but afterwards elongate into a raceme. It was raised in 1827 from Siberian seeds by Mr. Cameron at Bury Hill; but as it did not flower till the third year, and as it has never produced seeds in this country, it is propagated by dividing the root.

4.—*HESPERIS FRAGRANS*, *Fisch.* THE FRAGRANT ROCKET.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 61; and our *fig. 3*, in Plate 18.

SPECIFIC CHARACTER.—Pedicels villous, much shorter than the very

villous calyx; petals oblong, wavy, lower leaves stalked, lanceolate, runcinate, bluntish, upper leaves almost sessile, ovate, acuminate, coarsely toothed at the base. (*G. Don.*)

DESCRIPTION, &c.—This species is a biennial, with flowers that are only fragrant at night. The petals have each a long narrow limb, and they are set on so loosely as to hang widely apart; which, combined with their pale and dingy colour, gives them a faded appearance even when newly blown. The leaves are runcinate, and the lower ones are furnished with petioles. The pods are two-edged, with a spongy diss inside, differing in this respect as well as in the flowers from the species previously described, all of which have petals with an obovate limb, forming a compact flower; and their seed-pods roundish or somewhat four-cornered, with a membranous dissepiment. The species is a biennial, a native of Siberia, introduced in 1821, and it seldom grows above six or eight inches high.

OTHER SPECIES OF *HESPERIS*.

H. TRISTIS, *Lin.*; *Bot. Mag.* t. 730; *CHEIRANTHUS LANCEOLATUS*, *Willd.*

This species is nearly allied to *H. fragrans*, and only smells at night. The flowers are of a dirty white, or dingy purple. It is a biennial, a native of Austria, &c., and was introduced before 1629.

H. RUNCINATA, *Waldst. et Kit.*

This is a biennial, nearly allied to *H. matronalis*, but covered with short clammy hairs. It is a native of Hungary, and was introduced in 1804. There are many other species, but they are rarely seen in British gardens.

GENUS XIII.

ERYSIMUM, *Gartn.* TREACLE MUSTARD.

Lin. Syst. TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Silique 4-sided. Calyx closed. Cotyledons flat, oblong. (*G. Don.*)

DESCRIPTION, &c.—There are many species of *Erysimum*, but only two or three that can be called ornamental. Of these, by far the most beautiful is *E. Perovskianum*, which, though it may be treated as an annual, is found to last two or three years when protected during winter, and may be propagated by cuttings. The other species are mostly biennial; and in all, the flowers are yellow or orange. The name of *Erysimum* is from *eryo*, to draw, the plants having been formerly used to draw blisters in medicine.

1.—*ERYSIMUM IBERICUM*, *Dec.* THE ARMENIAN HEDGE MUSTARD.

SYNONYMES.—*Cheiranthus Armeniacus*, *Sims*; Armenian Wall-flower.

ENGRAVINGS.—*Bot. Mag.* t. 835; and our *fig. 9*, in Plate 18.

SPECIFIC CHARACTER.—Lower leaves runcinate, toothed, upper ones lanceolate, undivided; floriferous branches and pods compressed, 4-sided, erectly spreading. (*G. Don.*)

DESCRIPTION, &c.—A showy flower, resembling a yellow Brompton stock, if such a plant can be imagined. The flowers, which are sweet-scented, appear in May; and the species, which is a native of Mount Ararat, was introduced in 1803. It will grow in any common garden soil, and it is quite hardy.

2.—*ERYSIMUM LANCEOLATUM*, *R. Br.* THE LANCEOLATE-LEAVED TREACLE, OR HEDGE MUSTARD.

SYNONYMES.—*E. diffusum*, *Bot. Reg.*; *E. alpinum*, *Pers.*; *Cheiranthus crysimoides*, *Lin.*; *C. alpinus*, *Smith*; *C. decumbens*, *Schlech.*

ENGRAVINGS.—*Bot. Mag.* t. 2423; *Bot. Reg.* t. 388.

SPECIFIC CHARACTER.—Leaves lanceolate, toothed, upper ones almost linear, entire; petals orbiculate-ovate; claws of petals longer than the calyx; pods erect; stigma almost sessile.

DESCRIPTION, &c.—The variety of this species, *E. l. alpinum*, is one of the prettiest plants that can be imagined, from the great profusion and rich golden hue of the flowers. It is quite a dwarf plant, seldom growing more than six inches high, and flowering in May and June. It is a native of the greater part of the Continent, and was introduced before 1597.

OTHER SPECIES OF *ERYSIMUM*.

Among the handsomest of these may be mentioned *E. versicolor*, a native of Persia, the flowers of which are white, cream-coloured, brimstone, and golden yellow; *E. cuspidatum*, the plants of which have a greyish hue, though the flowers are of a bright golden yellow; *E. suffruticosum*, with small pale yellow corymbose flowers; and *E. Redowskii*, with large pale yellow flowers. *E. Perowskianum* (already mentioned in my work on Annuals) is decidedly a most valuable plant, from its great hardiness, and from its producing its bright orange flowers at a very early season, and continuing them all the summer.

GENUS XIV.

ÆTHIONEMA, *R. Br.* THE *ÆTHIONEMA*.

Lin. Syst. TETRADYNAMIA SILICULOSA.

GENERIC CHARACTER.—Silicles oval, usually emarginate, with inside. Seeds ovate-oblong, appearing muricated under a microscope. navicular valves, which are winged on the back. Cells 1—2-seeded. (*G. Don.*) Larger stamens connected, or each furnished with a tooth on the

DESCRIPTION, &c.—The name of this genus is derived from *aitho*, to scorch, and *nema*, a filament, in allusion to the burnt appearance of the filaments. There are three or four perennial species, but as they are all quite dwarf plants, with very small flowers, it will probably be sufficient to describe one species. They are all quite hardy, but from their diminutive size they are only suitable for rock-work.

1.—*ÆTHIONEMA MEMBRANACEUM*, *Dec.* THE WINGED *ÆTHIONEMA*.

SYNONYMES.—*Lepia membranacea*, *Desv.*; Membranous-winged *Æthionema*.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 69; and our *fig.* 10, in Plate 18.

SPECIFIC CHARACTER.—Pods 2-celled, 2-seeded, obcordate, crowded; valves winged on the back, entire; leaves linear, crowded, lower ones spreading. (*G. Don.*)

DESCRIPTION, &c.—The stem of this little plant is frutescent at the base, and dividing above into numerous spreading branches. The flowers are very small, but they are pretty, and produced in great abundance. The species is a native of Persia, whence it was introduced in 1820. In this country it is generally grown on rock-work, in light sandy soil.

GENUS XV.

MORICANDIA, *Dec.* THE MORICANDIA.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliques tetragonal, somewhat 2-edged. Seeds disposed in two rows in each cell; ovate, small, and a little margined.

DESCRIPTION, &c.—This genus is named in honour of Signor Moricand, an Italian botanist. There is only one species which is a biennial, the others being annuals.

1.—MORICANDIA ARVENSIS, *Dec.* THE FIELD MORICANDIA.

SYNONYMS.—*Brassica arvensis*, *Lin.*; *B. purpurea*, *Mill.*; *B. perfoliata*, var. β , *Lam.*; *Turritis arvensis*, *R. Br.*; *Crantzia frutescens*.

ENGRAVINGS.—*Swt. Brit. Flow. Gard. t. 278*; and our *fig. 5*, in Plate 18.

SPECIFIC CHARACTER.—Pods somewhat tetragonal; cauline leaves cordate, stem-clasping, quite entire. (*G. Don.*)

DESCRIPTION, &c.—This species, though called a biennial, will frequently last three or four years. The racemes of flowers are very loose, and the leaves, which are glaucous, and have no footstalks, sheath the stem at the base. The plant is a native of the south of Europe, and it was introduced in 1739, though it is very seldom seen in gardens, probably from its being frequently killed in severe winters. It should be planted in a warm open border, in a rich deep soil, and protected by turning a flower-pot over it in winter. It is propagated by seeds, which it ripens abundantly, and which should be sown in February or March.

GENUS XVI.

MORISIA, *Gay.* THE GROUND CRESS.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliques short, two-jointed; joints two-celled, crustaceous, globose, wrinkled, upper one bearing the persistent style, 1-seeded; lower one larger, 3-seeded.

DESCRIPTION, &c.—There is only one species, which was formerly included in the genus *Erucaria*. The present genus is named in honour of Professor Moris, who discovered the only plants of it yet known on the mountains of Sardinia.

1.—MORISIA HYPOGÆA, *D. Don.* THE UNDER-GROUND MORISIA.

ENGRAVINGS.—*Swt. Brit. Flow. Gard. 2nd ser. t. 290*; and our *fig. 8*, in Plate 18.

SPECIFIC CHARACTER.—Leaves pinnate; leaflets sessile, triangularly falcate; scape naked, 1-flowered.

DESCRIPTION, &c.—A beautiful little plant, growing in a compact tuft close to the ground, with golden yellow flowers, in the shape of a Maltese cross. The leaves, which are very numerous, resemble those of the dandelion, and are of a deep glossy green. The whole plant is admirably adapted for rock-work, a little nest being made for it between the stones of light loamy soil, sufficiently deep to give room for its root, which is long and fusiform. The species is propagated by seeds, which should be sown as soon as ripe; the specific name of the plant, indeed, indicates this peculiarity, as the flower-stalk coils up as soon as the seeds are ripe, like those of the cyclamen, and buries the capsule in the ground, where it discharges its seeds. The plant is a native of Sardinia, and it was introduced in 1834.

GENUS XVII.

MATHIOLA, *R. Br.* THE STOCK.*Lin. Syst.* TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliqua reundish. Stigmas connivent, thickened or horned at the back. Calyx bisaccate at the base. Seeds compressed, disposed in one series, numerous. (*G. Don.*)

DESCRIPTION, &c.—The Stocks are so well known as to need little description; but it perhaps is not generally known that the leaves of all the species are eatable boiled or in salad. The botanic name of Mathiola was given in honour of Dr. Mathioli, an Italian physician, who died in 1577. There are several species, but the most interesting are the annual or Ten-week Stock (*M. annua*), and the Queen or Brompton Stock (*M. incana*), which, though called a biennial, is rather a suffrutescens perennial, as it will last several years. Besides these there are several shrubby greenhouse species, well deserving of cultivation.

1.—MATHIOLA INCANA, *R. Br.* THE QUEEN OR BROMPTON STOCK.

SYNONYMES.—*Cheiranthus incanus*, *R. Br.*; *Mathiola simplicicaulis*, *Swt.*

ENGRAVINGS.—Eng. Bot. t. 1935; 2nd edit. t. 947; and our *figs.* I and 2 in Plate 19.

SPECIFIC CHARACTER.—Stem suffruticose at the base, erect, simple or branched. Leaves lanceolate, quite entire, hoary; siliques somewhat cylindrical, without glands. (*G. Don.*)

DESCRIPTION, &c.—Few flowers are more improved by cultivation than this stock; which some florists divide into two kinds—viz.: those with a single stem which are rarely above two feet high, and which are called the Brompton Stock; and those with branched stems, which are sometimes five or six feet high, and which are called Queen Stocks. Both are called biennials, but the Queen Stocks will sometimes last several years. Both kinds grow best in chalky or sandy soils; the largest I have ever seen being at Greenhithe in Kent, in chalk, and at Shenstone near Lichfield, in sand.

The best mode of propagation is by seeds, which should always be chosen from semi-double flowers; or from such single flowers as have grown near double ones. Double flowers themselves, rarely produce any seeds; as when they become double, the stamens and pistil are changed into petals; but sometimes a stamen or two remain unchanged, the pollen from which may reach the single flowers near it, and the seedlings from plants thus situated will always be finer than any others. The seeds should be sown in April or May, in sandy soil, and somewhat shady situation, as they will become weak and yellow if exposed too much to the sun. The seeds should be sown as thinly as possible, either in circles or drills (the latter being at least six inches apart), and covered with earth, but not deeply, all that is required being to exclude the light. If the weather should be hot and dry, the plants may be watered at night, or in the morning; but never in the middle of the day, unless care be taken not to wet the leaves. When the leaves are watered in the sun, they become discoloured and shrivelled, and consequently unfit to elaborate the sap; and, unless the sap be properly elaborated, it cannot afford the nourishment necessary for the growth of the young plant. When the young plants are two or three inches high, they should be thinned out, leaving the plants in the rows about six inches apart; and a month or six weeks afterwards, every other row should be removed, and every other plant in the rows that are left. The plants left will then be twelve inches apart every way, which is a good distance for them to flower. The plants removed

should be taken up with a ball of earth to each, and then planted nine inches or a foot apart every way, in light rich soil; care being taken to shade them and water them well, till they are settled in their new situation, and begin to grow. The transplanted stocks, however, are never so fine as those left to pass the winter in the seed-bed. When the cold weather sets in, the beds should be covered with half hoops and mats, or hand glasses, or flower-pots put over the plants; as though they will live through the winter without any protection, they amply repay, by their increased beauty, any care taken of them at that season. In March, if the weather be open, the coverings may be removed; and the plants may be either again transplanted, or suffered to flower in the bed.

The Brompton Stock is a native of England, and several parts of Europe; and the species was formerly known under the names of the Stock Gilliflower, and the Queen's Gilliflower—the latter word being supposed to be a corruption of July-flower, or Jolie-fleur. In the middle counties of England the wallflower is always called the gilliflower. The name of wallflower alludes to its growing wild on walls.

2.—MATHIOLA SINUATA, R. Br. THE GREAT SEA-STOCK.

SYNONYMES.—*Cheiranthus sinuatus*, *Lin.*; *C. tricuspidatus*, *Huds.*;
C. muricatus, *Lam.*; *Hesperis sinuata*, *Lam.*

ENGRAVINGS.—*Eng. Bot.* t. 462; 2nd edit. t. 948, and our *fig. 3*
in Plate 19.

SPECIFIC CHARACTER.—Stem somewhat erect, herbaceous, branched;
leaves oblong, downy, lower ones sinuated; siliques compressed,
velvety, and muricated with glands. (*G. Don.*)

DESCRIPTION, &c.—This species is known by its deeply-notched leaves, and flowers of a dingy pink, which become sweet-scented in the evening. It is found on the sandy sea-shore of Cornwall and Wales, and various parts of Europe; and the whole plant has a bitter, alkaline taste. This species is of easy culture in any deep sandy soil; it flowers in August, and grows about two feet high.

OTHER SPECIES OF MATHIOLA.

M. TARTARICA, *Dec.*

Flowers of a livid purplish yellow; a native of the south of Tartary, on rocks: introduced in 1826. This grows from one to three feet high; the leaves are grey with soft down; and the root is fusiform and fleshy.

M. CORONOPIFOLIA, *Dec.*

A native of Sicily, introduced in 1818; with dingy livid flowers, and hoary, pinnatifid leaves.

GENUS XVIII.

CHEIRANTHUS, *Lin.* THE WALL-FLOWER.

Lin. Syst. TETRADYNAMIA SILIQUOSA.

GENERIC CHARACTER.—Siliques terete, or compressed. Stigmas two-lobed, or capitate. Calyx bisaccate at the base. Seeds in one series, ovate, compressed.

DESCRIPTION, &c.—This genus, which takes its name from two Greek words, signifying hand-flower, was formerly much more extensive than it now is, as Linnæus included it in the Stocks, and several allied genera. The species now left in the genus are mostly greenhouse shrubs. All the species require rich and yet light soil, and they are all abundant flowerers.







1. *Mathiola incana*. ? The garden variety. 3. *Mathiola sinuata*
4 & 5. *Cheiranthus cheiri* (Double garden varieties).

1.—CHEIRANTHUS CHEIRI, *Lin.* THE COMMON WALL-FLOWER.SYNONYME.—*C. fruticosus*, *Lin.*ENGRAVINGS.—*Eng. Bot.* t. 1934 ; and our *figs.* 4 and 5 in Plate 19.

SPECIFIC CHARACTER.—Leaves lanceolate, quite entire, covered with

two-parted, adpressed hairs, or smooth ; siliques linear ; lobes of stigma recurved.

DESCRIPTION, &c.—Few plants are greater favourites than the common Wall-flower, and none give greater cheerfulness to a garden ; not only in spring and summer, when the plants are in flower, but in winter, when the evergreen leaves of the plants take away the bare and naked appearance of empty flower-beds. The flowers vary from pale yellow to a rich dark purple, and an equally rich deep crimson or blood-colour ; and they are double, semi-double, or single. There is a kind called the French Wall-flower, which has purple flowers ; and another called Harlequin, with rich dark purple flowers, and the leaves edged with pale yellow, which I saw in the spring of 1842 in Norman's nursery at Brighton. The Russian and German wall-flowers, like their annual stocks, are very much admired, and seed of them is sent every year to England. All the kinds are usually propagated by seed, which is ripened freely, and which may be sown either in spring or autumn for flowering the next year. When the young plants appear, they should be thinned, transplanted, and otherwise treated like young stocks, and they will flower splendidly. Some botanists divide the wall-flowers into two species, viz. those which are quite herbaceous, with an elongated raceme of deep yellow or reddish flowers, which they call *C. Cheiri*, and those which are shrubby at the base, with yellow, corymbose flowers, which they call *C. fruticosus*. Choice kinds may be propagated by cuttings, which root readily in sand.

OTHER SPECIES OF CHEIRANTHUS.

C. ALPINUS, *Lin.*

A beautiful plant, with clusters of yellow, sweet-scented flowers, generally grown in pots, or on rockwork. It flowers from April till July. It is a native of Lapland and Norway, whence it was introduced in 1820.

C. OCHROLEUCUS, *Hall.*

A native of the Alps of Switzerland, among rocks and stones ; introduced in 1819. The flowers are pale yellow, and the plant is procumbent.

CHAPTER VIII.

VIOLACEÆ.

CHARACTER OF THE ORDER.—Sepals 5, equal, or unequal. Corolla spurred, of 5 petals, regular or irregular. Stamens 5, perigynous. Filaments drawn out each into a scale beyond the anther ; two of the filaments in the irregular flowers are furnished with an appendage each, which is drawn within the spur. Capsule one-celled, three-valved, many-sided. Placentas three, parietal.

DESCRIPTION, &c.—The only hardy plants in this order are those contained in the genus *Viola*.

GENUS I.

VIOLA, *Tourn.* THE VIOLET.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx with unequal sepals, all drawn out at the base into ear-like appendages. Lower petal drawn out at the base into a hollow spur. Stamens approximate, the two anterior anthers furnished with long awl-like appendages. Capsules triangular. Valves opening with elasticity. (*G. Don.*)

DESCRIPTION, &c.—Though two species belonging to this genus (namely the Violet and the Heartsease) are well known, the numerous others included in it are seldom seen, and still more rarely cultivated in private gardens. The name of *Viola* is said to be derived from *Io*, who, when transformed into a cow, is fabled to have eaten violets as the first food she took.

1.—VIOLA PEDATA, *Lin.* THE CUT-LEAVED VIOLET.

ENGRAVINGS.—*Bot. Mag.* t. 89; *Swt. Brit. Flow. Gard.* t. 69; *And. Bot. Rep.* t. 153.

SPECIFIC CHARACTER.—Stigma large, compressed at the sides, obliquely truncate at the top, and perforated with a very short beak.

Leaves full of pellucid dots, pedately many-parted; segments linear-lanceolate, variously lobed; stipules pectinately jagged, adhering a considerable way. Petals all smooth, superior one truncate. Sepals lanceolate, acute, ciliated, emarginate behind. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Virginia, from which country it was introduced about 1759. It has deeply-cut leaves, which are divided so as to look somewhat like those of the heartsease; and the flowers are blue, with a white centre. This species must be grown in very sandy loam, and it is propagated by dividing the roots, as it seldom ripens seeds in this country. In very severe weather it requires a little shelter; and, indeed, it will always flower best if sheltered a little during winter.

V. septemloba, *V. pedatifida*, and *V. digitata*, all natives of North America, are nearly allied to this species.

2.—VIOLA FLABELLIFOLIA, *Lodd.* FAN-LEAVED VIOLET.

SYNONYMS.—*V. pedata*, var. *bicolor*, *Pursh.*; *V. atropurpurea*, *Raf.*; *V. pedata*, var. *flabellata*, *D. Don.*

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser. t. 247; *Lodd. Bot. Cab.* t. 777; and our *fig. 1* in Plate 20.

SPECIFIC CHARACTER.—Style pubescent, stigma as in *V. pedata*. Leaves pedately 5–7-parted; partitions cuneated, cut; stipules jagged, adhering a considerable way, petals smooth. (*G. Don.*)

DESCRIPTION, &c.—This species is extremely beautiful, from the rich velvety appearance of the upper petal, which is much darker than the others. The leaves are cut into narrow lobes, like the sticks of a fan; they have numerous minute dots, and are of a fleshy substance. The plant grows about six inches high, and the root has a large fleshy crown. It is a native of the southern provinces of North America, whence it was introduced about 1820. It is quite hardy, and should be grown in loam and bog earth. It is propagated by dividing or rather taking the offsets from the root.

3.—VIOLA PALMATA, *Lin.* THE PALMATE-LEAVED VIOLET.

ENGRAVINGS.—*Bot. Mag.* t. 535; and our *fig. 4* in Plate 20.

SPECIFIC CHARACTER.—Nearly smooth, or sometimes a little pubescent; stigma capitate, recurved, beaked, depressed, marginate; rhizoma

fleshy, thick; leaves hastately cordate, palmately lobed; lobes polymorphous (rarely undivided); sepals ciliated, ovate-lanceolate, entire behind; lateral petals bearded, with the claws of all keeled. (*G. Don.*)

DESCRIPTION, &c.—There are many varieties of this species, some of which have fragrant flowers, and others flowers variegated with blue and white. The flowers of the species are blue, and the leaves are large and

palmate, that is, shaped like the hand. The species is a native of Virginia, whence it was introduced before 1739, as it is named in a list of plants cultivated in that year by Philip Miller, author of the celebrated *Miller's Dictionary*, in the Chelsea Botanic Garden, of which he was then curator. The species is quite hardy in British gardens, and it is propagated by dividing the root. There is a variety in the Handsworth Nursery, near Birmingham, called *V. striata*.

4.—VIOLA CUCULLATA, *Pursh*. THE HOODED, OR HOLLOW-LEAVED VIOLET.

SYNONYMS.—*V. cordata*, *Walt.*; *V. obliqua*, *Poir.*; *V. cucullata*, var. *glaberrima*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 1795; *Swt. Brit. Flow. Gard.* 2nd ser. t. 298; and our *fig.* 3 in Plate 20.

SPECIFIC CHARACTER.—Stigma triangular, margined; rhizoma

thick, fleshy; leaves smooth, cordate, acute, serrated, cucullate at the base; peduncles longer than the petioles; limb of the lower petal narrow, beardless, with the two lateral ones bearded, all obliquely twisted; claws of all keeled. (*G. Don.*)

DESCRIPTION, &c.—This violet has the leaves folded, or with the margins turned up, so as to resemble a kind of cup. The flowers are large, and the petals are nearly equal in size. There are several allied species, such as *V. sororia*, or *affinis*, and *V. papilionacea*, which are probably only varieties of this plant. It is a native of North America, always growing in wet clayey soils. It was introduced in 1762, and is quite hardy in British gardens. It is propagated by dividing the root, or seeds, but it has been observed that the flowers which ripen seeds have no petals.

5.—VIOLA LANCEOLATA, *Lin.* THE LANCE-LEAVED VIOLET.

ENGRAVINGS.—*Lodd. Bot. Cab.* t. 211; and *Swt. Brit. Flow. Gard.* t. 174.

SPECIFIC CHARACTER.—Stoloniferous; stigma margined, beaked.

Leaves lanceolate, tapering to both ends. Stipules free. Sepals lanceolate. Two lateral petals bearded. (*G. Don.*)

DESCRIPTION, &c.—A very singular little plant, with long lance-like leaves, standing erect. The leaves taper towards both ends, and they are serrated on the margin. The flowers are white, with the lower petals beautifully pencilled with dark lines; but they have no fragrance. The species is a native of North America, where it is generally found in overflowed meadows or other humid places. It was introduced in 1759, and should be grown in British gardens in peat. *V. primulaefolia*, introduced in 1783, and *V. attenuata*, introduced in 1759, are probably only varieties of this species. The latter has the upper petals streaked with dark purple veins, instead of the lower ones.

6.—VIOLA SUAVIS, *Bieb.* THE FRAGRANT VIOLET.

ENGRAVING.—*Swt. Brit. Flow. Gard.* 2nd ser. t. 126.

SPECIFIC CHARACTER.—Stigma hooked, naked; leaves reniform, cordate, crenate, pubescent; sepals obtuse. Four upper petals narrow-

est, lower one emarginate; two lateral ones with a hairy line. Stems long, creeping, and rooting. (*G. Don.*)

DESCRIPTION, &c.—A valuable species, distinguished from the common sweet violet by its pale green leaves, and its longer and paler flowers; the lower petal being much larger and broader than the others, and more decidedly notched in the centre. The species is a native of Tartary, and it is quite hardy in British gardens, where it is propagated by seeds, or division of the root. It was introduced in 1823.

7.—*VIOLA ODORATA*, *Lin.* THE COMMON SWEET VIOLET.

ENGRAVING.—Eng. Bot. t. 894.

SPECIFIC CHARACTER.—Stigma hooked, naked; leaves roundish-cordate, crenate, smoothish; sepals ovate, obtuse; two lateral petals

with a hairy line; spur very blunt; capsules turgid, hairy; seeds turbinate, whitish; stolons long, ereeping, and rooting. (*G. Don.*)

DESCRIPTION, &c.—The delightful fragrance of this species makes it a favourite flower in every garden. It is a native of Great Britain, indeed of the whole of Europe and part of Asia, extending, it is said, to China and Japan. There is no doubt that this species is the violet of the ancients, as it is described exactly by Dioscorides, who recommends it for its medicinal virtues, as well as for its beauty and fragrance. There are numerous varieties of this species, eight of which are distinct. Of these some are white, some purple, and some blue; and some of all these kinds are double. The most interesting and the most generally cultivated are, however, the Neapolitan and Russian violets. The Neapolitan violets are of a very pale blue, and very fragrant; but their chief advantage is that they may easily be made to flower all the winter. For this purpose some excellent directions are given in Paxton's Magazine of Botany, vol. 3, for the culture of these plants, of which the following is an abridgment. "In the first place, cuttings are taken off the plants as soon as they have done flowering in May, and these cuttings are planted in light soil in the border of a south wall, or in any other warm, sheltered situation. A hand-glass is then put over them till they have taken root, and as soon as they begin to grow they are removed to another bed of light soil, where they are planted about nine inches apart. They should be watered in dry weather, and the ground stirred with a hoe. In August a bed is prepared, by digging a pit, of a size suitable to the frame which is to cover them, about eighteen inches deep. In the bottom of this is placed a layer of broken pots, brickbats, and other rubbish, about nine inches thick; and upon this a layer of compost about a foot thick, of the following ingredients:—two barrow-loads of leaf mould, one of free loam, one of well-rotted manure, and half a barrow of clear sand. These must be thoroughly mixed by frequent turnings, and if mixed twelve months before using so much the better. After the bed has been allowed a few days to settle (for the compost will be at first two or three inches above the level of the garden), the plants should be carefully taken up, trimmed of their runners, and planted four inches apart every way. A frame like that for a hotbed should be put over the bed as soon as the weather begins to get cold, taking care to let the plants be near the glass, or oiled paper or canvas, which will do as well. The frame should be put on permanently as soon as the frost sets in, and not taken off at all (unless the weather should change to wet, and the plants should want drying), till the flowers appear. Should the weather prove severe, a lining of dry litter should be placed round the outside of the frame to exclude the frost. To obtain a succession of flowers, some plants may be placed in shallow 32-sized pots, and placed in heat (not more than 65° Fahr.) so as to flower from October to November, while those in the frame will flower from November to February; and others, merely under hand-glasses, will come in from February to April." The only objection to the above plan is, that unless the plants are attended to carefully, the leaves and flower-buds are frequently destroyed by damp, particularly if they are potted in August, as is frequently done, when they are put under the frame immediately, and kept there all the winter. To avoid this danger, a correspondent of the Gardener's Magazine recommends the following plan, which is a very good one, though, like the former, it requires a reserve garden, or some place not in sight, to set aside for the bed, as it is not at all ornamental in a flower-garden.

"Any time in the month of May mark out a piece of ground one foot wider on all sides than any frame or





1. *Viola flabellifolia*. 2. *Viola Palmaensis*. 3. *Viola cucullata*. 4. *Viola palmata*. 5. *Viola pubescens*.
6. *Viola Altiaca*. 7. *Viola rothomagensis*.

frames which are likely to be unoccupied in the autumn and winter months. Dig a trench round the piece one spit deep and one wide, merely to keep the piece dry on which the frame will have to stand. Let the earth be thrown on the piece, and be neatly pointed down. Plant with young plants, about eight inches apart each way, and water them as soon as planted. If the weather is hot at the time of planting, shading for a few days while the sun is on them will be of service. A little water as occasion may require, and keeping free from weeds, are all that will be necessary till October; at which time the frame or frames may be placed over. Let it be particularly observed that the situation should be as open as possible, provided the sun will not shine into the frames during the winter months. I do not like them stuck behind a north wall, as such a place is usually damp; but in most places such a situation as I have described may be found. If not, and the sun must shine upon them, let the lights be shaded when the sun breaks out; otherwise the plants will be excited, and will suffer more from cold and damp afterwards than if they had never been protected. Whenever there is no fear of rain, and it is not frosty, let the lights be kept off; and if they are obliged to be on, let them be tilted behind at all favourable opportunities, night or day, as a dry atmosphere is of the highest importance. It will be found that violets treated in this way will not lose their foliage from damp, like those which have been potted; and, being exposed to the air, the foliage will not be drawn up so as to hide the flowers. If, when the frames are put on, the soil is lightly stirred, and decayed leaves and rubbish picked out, it rarely occurs that it will be necessary to repeat it all the winter. I do not recollect that mine have been picked over since the frame was put on; and I think that you will agree that this winter has been damp enough to prove it.

“By observing the above rules, abundance of flowers will be produced, and the plants may be potted a few at a time, choosing those for early potting whose flowers are most forward, and taking them into the greenhouse or elsewhere to open. If the plants are strong, one plant in a 48-sized pot will do, or two may be placed in a 32, as most convenient. I have sometimes planted a few about the borders of a conservatory; and, if they are allowed to open their flowers before they are taken from the frame, they look pretty and scent the house.”—*Gard. Mag. for April, 1842.*

The Russian violet has single flowers, but it is so hardy that it will blossom all the winter without any care or protection. It should be planted in July or August, or the seeds sown as soon as ripe. If runners are planted, they should be shaded for a day or two till they have established themselves. They will require no further care, but will continue to flower, in spite of frost and snow. As they have few runners and take up but little room, they are very suitable for a small garden.

8.—*VIOLA CANINA, Lin.* THE DOG-VIOLET.

SYNONYMS.—*V. sylvestris, Lam.*; *V. neglecta, Schmidt.*

ENGRAVING.—*Eng. Bot.* t. 620; 2nd ed. t. 331.

SPECIFIC CHARACTER.—Stigma papillose, somewhat reflexed; adult stems ascending, branched, glabrous; leaves oblong, heart-shaped;

stipules acuminate, serrated, or finely jagged; bractees awl-shaped, entire; sepals awl-shaped; peduncles glabrous; capsules elongated, with acuminate valves; seeds pear-shaped, brown. (*G. Don.*)

DESCRIPTION, &c.—This well-known species is a native of Great Britain. Its flowers are pretty, but without fragrance; their colour is blue, with a white centre, streaked with very dark lines. The species is not worth cultivating, but it frequently springs up spontaneously in moist places among other violets. There are several varieties, one of which has white flowers, and another is a native of Japan. The British species continues in flower all the summer, and it will grow in any moist soil and shady situation.

9.—VIOLA PUBESCENS, *Ait.* THE DOWNY VIOLET.

SYNONYMES.—*V. pennsylvanica*, *Michx.*; *V. eriocarpa*, *Schw.*
 ENGRAVINGS.—*Swt. Brit. Flow. Gard. t. 100, t. 223*; *Bot. Reg.*
t. 390; and our *fig. 5* in Plate 20.
 SPECIFIC CHARACTER.—Villous; stems simple, rather decumbent:

leaves cordate, acnminated, serrated; stipules large, ovate, serrated at the top, entire. Sepals oblong-lanceolate; spur very short, somewhat saccate; ovary smooth. (*G. Don.*)

DESCRIPTION, &c.—This species has many stems springing from the same root, and as its flowers are yellow, it forms a very pretty tuft, alternately with some of the purple violets. There are two species nearly allied to *V. pubescens*, viz. *V. eriocarpa*, and *V. pennsylvanica*, all of them being natives of North America, and all only requiring a moist and shady situation.

10.—VIOLA PALMAENSIS, *Mackay.* THE PALMESE, OR TREE VIOLET.

ENGRAVINGS.—*Floral Cabinet, vol. ii., pl. 165*; and our *fig. 2* in Plate 20.
 SPECIFIC CHARACTER.—Suffruticose, branched, pubescent. Leaves linear-lanceolate, remotely dentate. Stipules laciniated, nearly equal

to the leaves; segments obsolete near the base. Sepala linear-lanceolate, ciliated, spur incurved. Petals obovate, superior submarginate, bearded at the base. Seeds angular.

DESCRIPTION, &c.—This species is half shrubby; it is quite hardy, and will grow in any common garden soil; and it is increased by cuttings of the tenderest young shoots, which should have a little heat to make them strike. The native country of this species is not known, but it was sent to England from Liege, about the year 1838. There are some other shrubby species, but they all require protection during winter.

11.—VIOLA ALTAICA, *Ker.* THE ALTAIAN VIOLET OR PANSY.

SYNONYMES.—*V. grandiflora*, *Sievers*; *V. Pallasii*, and *V. chrysantha*, *Fisch.*; *V. uniflora*, *Hort.*
 ENGRAVINGS.—*Bot. Reg. t. 54*; *Bot. Mag. t. 1776*; and our *fig. 6* in Pl. 20.

SPECIFIC CHARACTER.—Stem short; leaves oval; stipules cuneiform, with acute teeth; sepals acute, denticulated; spur very short, scarcely so long as the appendages of the sepals. (*G. Don.*)

DESCRIPTION, &c.—This species is one of the parents of the cultivated Heartsease; all those with pale yellow petals, with an undulated margin, being derived from this species. The common Heartsease, *V. tricolor*, is an annual, but the hybrids raised between it and *V. altaica* are mostly perennials; though they seldom flower well more than one season, unless propagated by cuttings. *V. altaica* is a native of the Altaic Mountains in Siberia, whence it was introduced in 1805. It is propagated by seeds (which it produces in abundance), or cuttings.

12.—VIOLA ROTHOMAGENSIS, *Desf.* THE ROUEN VIOLET OR PANSY.

SYNONYMES.—*V. hispida*; *V. pilosa*.
 ENGRAVINGS.—*Bot. Mag. t. 1498*; and our *fig. 7*, plate 20.
 SPECIFIC CHARACTER.—Hispid or pilose; root rather fusiform; stems zigzag, branched, diffuse; leaves ovate, but the lower ones are

somewhat cordate, crenate, fringed; stipules pinnatifid, rather lyrate; spur tubular, obtuse, shorter than the sepals; nectaries shorter than the stamens; seeds oblong-ovate. (*G. Don.*)

DESCRIPTION, &c.—This violet very much resembles *V. tricolor* in its shape, though not in its colour, as that is a pale blue streaked with dark lines. It is the parent of all the pale blue cultivated pansies, and hybrids between it and the preceding species are generally very beautifully streaked with dark lines. There is a variety in Pope's Nursery at Handsworth, near Birmingham, with purple flowers. It is a native of Normandy, whence it was introduced in 1783, and it is readily propagated by seeds or cuttings.

OTHER SPECIES OF VIOLA.

These are very numerous, but only a few are seen in British gardens.

V. MONTANA, *Lin.*; *Bot. Mag.* t. 1595.

A most beautiful species, with pale blue flowers, which are of a much larger size than those of most of the other kinds of violet. The plant is also much larger, the stem frequently growing a foot and a half high, or more. It is a native of Switzerland, and other mountainous parts of Europe; and it was introduced in 1683. It is quite hardy, but it is generally propagated by dividing the roots, as only a few flowers in the upper part of the plant, which are generally without petals, produce any seeds.

V. CANADENSIS, *Lin.*; *Swt. Brit. Flow. Gard.* 2d ser. t. 62.

This is one of the most beautiful of all the violets. Several stems rise from the same root, all with broadly cordate leaves. The flowers, which are sweet-scented, are very pretty, having, when grown in pots in peat soil, white petals which are of a beautiful blue at the back. This has a very pretty effect at a little distance, as the flowers appear of a bright blue and clear white. When grown in the open border and in common soil, the backs of the petals become nearly white. The species is a native of Canada, whence it was introduced in 1783. The plants are propagated by division of the root.

V. PRÆMORSA, *Doug. Bot. Reg.* t. 1254.

A plant with very singular flowers, which have widely-spreading, narrow, bright yellow petals, very unlike these of most of the other species. It is a native of California, whence seeds of it were sent home by Douglas in 1827. It is quite hardy, and grows "readily among rockwork on the north side of large stones."

V. PERSICIFOLIA, *Roth.*

This species, which is a native of Germany, introduced in 1683, is very nearly allied to *V. montana*, from which it differs only in the leaves.

V. RUPPII, *All.*; *Lodd. Bot. Cab.* t. 686.

A native of the Alps; introduced in 1822, with pale blue, or white flowers.

V. BIFLORA, *Lin.*

A native of Europe, Asia, and the west coast of North America. The flowers are yellow but very small.

V. LACTEA, AND V. HIRTA, *Lin.*

These are two British species, with very pretty flowers.

V. NUMMULARIFOLIA, *All.*

A native of the rocks in the Alps of Piedmont and Dauphiny, introduced in 1820. The flowers are blue, with darker stripes, and the leaves are roundish. *V. alpina* is very nearly allied to this species.

V. CORNUTA, *Lin.*, *Bot. Mag.* t. 791.

A native of Switzerland and the Pyrenees, introduced in 1776. A tufted plant, with pale blue flowers. There are many other species, but those above described are most easily to be procured in British nurseries.

CHAPTER IX.

CARYOPHYLLÆ, OR SILENACEÆ.

CHARACTER OF THE ORDER.—Calyx five-toothed, five-cleft, or five-parted, or of five sepals. Petals four or five, unguiculate, rarely absent. Stamens four or five, or eight or ten, hypogynous. Capsule two or five-valved, one or five-celled; placenta central. Nodose articulated herbs; leaves simple, opposite, or verticillate, rising from the nodi. (*G. Don.*)

DESCRIPTION, &c.—This order contains numerous handsome plants, but none more universally cultivated than the Pink and Carnation, both belonging to the genus *Dianthus*. Botanically, the plants belonging to it are characterised by the long claws of the petals, the opposite, narrow, undivided leaves, which have no stipules, the jointed stems, and the swelling of the stem at the joints, which are the nodes from which the leaves spring. The order is divided into two sections, viz. *Sileneæ*, which includes all the species with a tubular calyx; and *Alsineæ*, the species in which have the sepals of the calyx distinct, but the latter division contains mostly weeds.

GENUS I.

DIANTHUS, *Lin.* THE PINK.

Lin. Syst. DECANDRIA DIGYNIA.

GENERIC CHARACTER.—Calyx tubular, five-toothed, furnished with two or six imbricated opposite scales at the base. Petals five, with long claws. Stamens ten. Styles two. Capsule one-celled. Seeds compressed. (*G. Don.*)

DESCRIPTION, &c.—The beauty and fragrance of most of the flowers belonging to this genus are so conspicuous, as almost to justify the name given to it of *Dianthus*, which signifies “divine flower.” The leaves are evergreen, and of a glaucous colour; so that even in winter a bed of pinks and carnations has a clothed and cheerful appearance. They are small and neat in shape, and have their veins in parallel lines like a monocotyledonous plant, only the midrib being conspicuous. The veins of the petals, however, are reticulated. Botanically the genus *Dianthus* is interesting from its calyx, which is tubular, being surrounded by a number of what are called calycine scales. These scales in most of the species lie close together, like tiles on the roof of a house; but in the Sweet William, and its allied species, they are lengthened into the appearance of sharply-pointed leafy bracts. There are numerous species of *Dianthus*; some of which are annual, some perennial, and some shrubby. The species are divided into several sections, some of which have the flowers in close clusters, and others have the flowers few, or many and loosely panicked.

SECTION I.—ARMERIASTRUM.

FLOWERS CAPITATE OR CORYMBOSE, SESSILE OR STALKED.

1.—DIANTHUS PSEUDO-ARMERIA, *Bieb.* THE FALSE ARMERIA PINK.

SYNONYMES.—*D. barbatus*, *Pall.*; Long-scaled Pink, False Sweet William.

ENGRAVING.—*Bot. Mag.* t. 2288.

SPECIFIC CHARACTER.—Flowers in dense aggregate bundles; scales of calyx ovate, awl-shaped, equal in length to the limb; petals

bearded; leaves awl-shaped, strict, beset with scabrous pubescence. (*G. Don.*)

VARIETY.—There is a variety with a short calyx, and widely-spreading bracts.

DESCRIPTION, &c.—This species bears some resemblance to the Sweet William, but the flowers are smaller and the calycine scales longer and more abundant. The petals are also of only one shade, and quite destitute of



1 *Dianthus arbuscula*. - 2. *Dianthus Caucasicus*. - 3. *Dianthus Virginicus*. 4. *Dianthus Alpinus*
5. *Dianthus Libanotis* 6. *Dianthus Arenarius*. 7. *Dianthus Pubescens*.

the brilliancy of colour which is so agreeable in the Sweet William. The plant is also entirely covered with a very short and close pubescence. The flowers have no fragrance, and are almost hidden by the long sharply-pointed bracts. The species is a native of Caucasus, whence it was introduced in 1820. It is quite hardy, and thrives best in poor rocky or stony soil.

2.—DIANTHUS BARBATUS, *Lin.* THE BEARDED PINK, OR SWEET WILLIAM.

ENGRAVINGS.—*Bot. Mag.* t. 205; and our *fig. 2* in Plate 22.

SPECIFIC CHARACTER.—Flowers aggregate, in bundles; calycine scales or bracts ovate, awl-shaped, equal in length to the tube; petals bearded; leaves lanceolate, nerved.

VARIETIES.—These are very numerous; the flowers in a bed of seedlings varying from dark-purple or crimson, through rose-colour

and pink, to white. Some are also semi-double, and others double; nearly all of which have existed in British gardens since 1629, as Parkinson mentions them in his *Paradise, &c.*, published in that year. What is called the mule Pink is generally said to be a hybrid between this species and the Carnation.

DESCRIPTION, &c.—This species appears to have been introduced as early as 1552, in the reign of Elizabeth, though it must have been soon lost, as it seems to have been re-introduced in 1573. It is a native of Germany, and is quite hardy in British gardens. The flowers of the Sweet William are produced in large clusters, each separate flower resembling a small Chinese pink, except in the calycine scales or bracts, which are very long and sharply pointed. Some of the varieties are very beautiful, particularly the deep rose colour, and one which is white, spotted with pale pink. The most beautiful varieties I ever saw of this plant were in Scotland, at Milton Lockhart on the Clyde, where the Sweet Williams were so beautiful as almost to deserve to take rank as florists' flowers. Some of the varieties have also more fragrance than others. Though the Sweet William is a perennial, it is not a long-lived plant, particularly in London or any other large town, or if the soil be very moist or very dry; and it seldom flowers well after the second year. These plants do best when treated as biennials, in the same manner as recommended for the Brompton stocks (sec p. 81). The double kinds may be increased by cuttings, pipings, or layers, in the same manner as carnations and pinks.

3.—DIANTHUS AGGREGATUS, *Poir.* THE CROWDED PINK.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2nd ser. t. 166; and our *fig. 1* in Plate 22.

SPECIFIC CHARACTER.—Flowers aggregate, sessile; calycine scales

ovate, mucronate, short; petals toothed, beardless; leaves glaucous, broad, channelled, without nerves, connate and ciliated at the base. (*G. Don.*)

DESCRIPTION, &c.—This splendid species is closely allied to the Sweet William, but the bracts or calycine scales are broader and more erect, so that they have not the same bristly or fringed appearance. The flowers are very large, and of a most brilliant scarlet, so dazzling indeed as to be almost painful to look at in the sunshine. The native country and year of introduction of this plant are unknown, but it does not appear to be either a hybrid or a variety of the Sweet William, though some have supposed it to be so. It is quite hardy in British gardens; and is a true perennial, lasting several years in a light sandy soil, and being propagated by layers or pipings like the carnation, as it rarely ripens seed.

4.—DIANTHUS CARTHUSIANORUM, *Lin.* THE CARTHUSIANS' PINK.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2nd ser. t. 282; *Bot. Mag.* t. 2039; and our *fig. 4* in Plate 22.

SPECIFIC CHARACTER.—Flowers aggregate, oblong, capitate, stalked;

calycine scales four, ovate, awned, shorter than the tube; involucre oblong, awned, shorter than the head of flowers; petals crenate; bearded; leaves linear, 3-nerved. (*G. Don.*)

DESCRIPTION, &c.—A pretty little species, introduced about the same time from France or Italy, that the

Sweet William was from Germany. Though not so showy as many of its brethren, it has a pretty effect when sown or planted in patches in a light sandy loam, where it will continue to produce a succession of flowers during the whole of the summer and autumn. It is propagated by seeds or pipings.

5.—DIANTHUS ARBUSCULUS, *Lindl.* THE SHRUBBY CHINESE PINK.

SYNONYME.—The little Tree Pink.

ENGRAVINGS.—*Bot. Reg.* t. 1086; and our *fig.* 1 in Plate 21.

SPECIFIC CHARACTER.—Flowers panicled, aggregate, or solitary; leaves lanceolate, glaucous, and glabrous. Calycine scales four, broad,

ovate, leafy, erect, equal to the calyx in length, or sometimes much shorter than the calyx, and ending in a small cuspidate point. Petals toothed.

DESCRIPTION, &c.—This very handsome species has double flowers, and has never been seen in England in a single state. It is a native of China, whence it was introduced in 1824. It requires a little protection during winter, but it flowers freely in the open ground from July to October. It has a half shrubby stem, and is propagated by cuttings.

SECTION II.—CARYOPHYLLUM.

FLOWERS EITHER PANICLED OR SOLITARY.

6.—DIANTHUS CAUCASICUS, *Bieb.* THE CAUCASIAN PINK.

ENGRAVINGS.—*Bot. Mag.* t. 795; and our *fig.* 2 in Plate 21.

SPECIFIC CHARACTER.—Stem branched, smooth; flowers almost sessile,

solitary. Calycine scales ovate, awned, erect, shorter than the calyx. Leaves awl-shaped, with scabrous margins. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Mount Caucasus, whence it was introduced in 1803. The flowers are small, and the petals are so deeply cut at the margin, as to look almost fringed. The leaves are small, deeply-keeled, and very glaucous. It flowers in July and August. It is quite hardy; and, like the common pink, it is generally propagated by layers.

7.—DIANTHUS SYLVESTRIS, *Jaq.* THE WOOD PINK.

SYNONYMES.—*D. virgineus*, *Sims*; *D. rupestris*, *Lin.*; *Caryophyllus sylvestris*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.* t. 1740; and our *fig.* 3 in Plate 21, under the name of *D. virgineus*.

SPECIFIC CHARACTER.—Stem branched or simple. Flowers solitary, or panicled. Calycine scales two or four, very short, ovate; when four, the outer ones acute, and the inner ones bluntish. Petals very broad, beardless, toothed. Leaves crowded, awl-shaped, stiff.

DESCRIPTION, &c.—This species, which is found in great abundance in rocky and stony places on Mount Jura and the neighbouring Alps, has been supposed by some botanists to be the wild carnation. The flowers have, however, no fragrance; and the leaves, which are crowded together at the root, are short, awl-shaped, slender, and very stiff; while the stems are long and weak. The plant has a creeping root, or rather underground stem, which is very difficult to eradicate when once it has taken hold of the soil. It is a native of Germany, whence it was introduced in 1814; and it is quite hardy if planted in a dry soil, though it is very easily killed by wet.

8.—DIANTHUS PUBESCENS, *Sib. and Smith.* THE PUBESCENT PINK.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2nd ser. t. 27; and our *fig.* 7 in Plate 21.

SPECIFIC CHARACTER.—Stem ascending, villous, 2—5 flowered;

flowers solitary; calycine scales ovate, awl-shaped, only half as long as the tube; calyx striated, villous, clammy, with short teeth; leaves linear, villous.

DESCRIPTION, &c.—The whole plant is thickly covered with a short dense pubescence. The stem is very

much branched, and each branch being tipped with a flower, the whole, at a little distance, has the appearance of a cluster; though, when closely examined, the stems will be found too long to place the species in the section with clustered flowers. The calycine scales are remarkably long, and they rise so high round the flower, as to appear like a second calyx enveloping the real one. The species is a native of Greece, near Athens, and it was introduced in 1820. It is a biennial.

9.—DIANTHUS ALPINUS, *Lin.* THE ALPINE PINK.

SYNONYME.—*D. glacialis*, var. *latifolia*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 1205; and our *fig.* 4 in Plate 21.

SPECIFIC CHARACTER.—Stem leafy, 1-flowered; outer calycine

scales two, about equal in length to, or shorter than, the tube. Petals crenated. Leaves oblong-linear, obtuse, green. (*G. Don.*)

DESCRIPTION, &c.—This beautiful little pink is found only on the highest mountains of Austria and central Europe, and in a wild state it has rarely more than a single flower upon each stalk; but in cultivation it acquires numerous flowers, and becomes a most ornamental tufted plant for rockwork. The flowers are large, and very handsome, though the plant is dwarf. It was introduced in 1759, and is quite hardy in British gardens, flowering in June.

10.—DIANTHUS DISCOLOR, *Sims.* THE TWO-COLOURED PINK.

ENGRAVING.—*Bot. Mag.* t. 1162.

SYNONYME.—*D. montanus*, *Dec.*

SPECIFIC CHARACTER.—Flowers solitary, calycine scales ovate-acu-

minate, spreading. Corolla unequally serrated, two-coloured. Leaves lanceolate, rough, longer than the internodes.

DESCRIPTION, &c.—This flower can never be confused with any other, from the decided difference of colour in the petals, which are pink on one side, and a yellowish green on the other. The leaves are longer and broader than usual, and not so glaucous, and the whole plant is very showy, but the flowers have no fragrance. The species is a native of Mount Caucasus, and quite hardy in British gardens. It flowers in July. It is propagated by seeds or layers like the common pink.

11.—DIANTHUS ARENARIUS, *Lin.* THE SAND PINK.

ENGRAVINGS.—*Bot. Mag.* t. 2038; and our *fig.* 6 in Plate 21.

SPECIFIC CHARACTER.—Stem almost one-flowered, calycine scales ovate-obtuse. Corolla much cut. Leaves linear.

DESCRIPTION, &c.—This plant is remarkable for its deeply cut petals, which look quite fringed, being minutely cut to below the middle. They are also each marked with a faint green spot, covered with short dark purple hairs. The stem divides near the root into several branches, which are woody at the base, terminated by tufts of leaves, from the centre of each of which springs a stem, seldom bearing more than two flowers. The species is a native of the north of Europe, and was introduced in 1804. It only requires a sandy soil, and is quite hardy; but it is too slender and delicate to look well among stronger and more brilliant flowers.

12.—DIANTHUS LIBANOTIS, *Lab.* THE MOUNT LEBANON PINK.

ENGRAVINGS.—*Bot. Reg.* t. 1548; *Swt. Brit. Flow. Gard.* 2d ser. t. 231; and our *fig.* 5 in Plate 21.

SPECIFIC CHARACTER.—Stem erect; flowers twin. Calycine scales

six, acuminate; only half the length of the tube. Petals very much cut. Leaves linear-lanceolate.

DESCRIPTION, &c.—This Dr. Lindley thinks the finest species of the genus, and it certainly is extremely

beautiful. It was found by Labillardière, upon the highest points of Mount Lebanon, and introduced in 1831, from Dr. Fischer of the Botanic Garden at St. Petersburg. The plant grows about four feet high; and it requires a warm dry situation, and a light loamy soil. It is increased by cuttings, layers, or pipings; though it requires some care to make them take. The species has not yet ripened seeds in this country, probably from the late period of its flowering.

13.—DIANTHUS FISCHERI, *Spreng.* DR. FISCHER'S PINK

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 245; and our *fig.* 3 in Plate 22.

SPECIFIC CHARACTER.—Stem erect, paniculately branched, flowers in

crowded corymbs. Calycine scales ovate, cuspidate-acuminate, erect, only half the length of the tube. Petals much cut, hairy at the throat. Leaves lanceolate, serrulately-rough.

DESCRIPTION, &c.—A showy plant producing a great abundance of fragrant flowers. The stem, which grows about eighteen inches high, is much branched; and both stem and branches are covered with a rough pubescence. The flowers are large and crowded, forming large crowded corymbs. The margin of the leaves is quite rough, with cartilaginous teeth; and the petals are bearded at the throat. The species is a native of the south of Russia, introduced in 1820; and it is quite hardy in British gardens, if planted in a dry soil, though it is liable to be injured by wet. It is propagated in the usual way by seeds, cuttings, pipings, or layers.

14.—DIANTHUS SUPERBUS, *Lin.* THE SUPERB PINK.

SYNONYMS.—*Caryophyllus sylvestris*, *Clus*; *C. plumarius austriacus*, the feathered Pink of Austria, *Park*.

ENGRAVING.—*Bot. Mag.* t. 297.

SPECIFIC CHARACTER.—Flowers panicled; calycine scales very short, acuminate. Corolla much cut into hair-like divisions. Stem erect.

DESCRIPTION, &c.—This very elegant plant is remarkable for its delightful fragrance; its fringe-like petals; the long slender tube of the calyx, and the shortness of the calycine scales. The species has white flowers; but there is a variety, the flowers of which are purple. The fragrance of this species is so powerful, that Parkinson describes it as “comforting the spirits and senses afar off.” The cut flowers are not, however, suitable for a nosegay; as from their extreme delicacy they soon fade. The species is a native of Germany, and other parts of Continental Europe, whence it was sent to England before 1596; and it is quite hardy in British gardens, though, as it is a short-lived plant, it should be propagated every second year by seeds or layers, the seeds being sown in spring. The flowers appear in August, and continue till October.

15.—DIANTHUS CARYOPHYLLUS, *Lin.* THE CARNATION, OR CLOVE PINK.

SYNONYME.—Clove Gilly-flower.

ENGRAVINGS.—*Bot. Mag.* t. 39; and our *figs.* 1 to 4 in Plate 23.

SPECIFIC CHARACTER.—Stem branched; flowers solitary; calycine scales four, very short, ovate, rather mucronate; petals very broad; leaves linear, awl-shaped, channelled, glaucous. (*G. Don.*)

VARIETIES.—D. C. 2 flore pleno, *Dec.* The double carnations and picotees. D. C. 3 fruticosus, *Dec.* The tree carnation. D. C. 4. imbricatus, *Dec.* The wheat-ear carnation. D. C. 5 Carduious, *Ser.* The whole plant is covered with hollow prickles. Of the common double carnations and picotees there are many sub-varieties.

DESCRIPTION, &c.—The wild Carnation, of which there are two kinds, one with rose-coloured flowers and of a dark crimson, is found in Britain, growing on old stone walls, and sending down its long slender roots among the mortar, in cracks between the stones. Thus, it is found in abundance on the ruinous walls of Rochester and Deal Castles, and on the walls of Norwich and other fortified towns. The variety called the Wheat-ear Carnation, is remarkable for its calycine scales, which are numerous and scale-like, being laid over each other



1 *Dianthus aggregatus* — 2 *Dianthus barbatus* — 3. *Dianthus Fischeri*. 4 *Dianthus Carthusianorum*.

like the tiles of a house ; or rather, so as to make the unopened buds look like ears of corn. The most common carnations are, however, those springing from the first or double-flowered variety, usually called the Clove Pink. This flower is of a rich dark crimson, or blood-colour, and it is remarkable for the richness of its fragrance. It is used in medicine, and for making a kind of liqueur, which is said to have a very powerful effect on the spirits. The garden carnations are all more or less variegated, and they are divided into three kinds, viz. the flakes, the bizarres, and the picotees, which are sub-divided into about five hundred named florists' flowers. The flakes have only one colour, on a white or yellow ground, in broad stripes, going quite through the limb of the petal, from the margin to the faux or throat. Bizarres have two colours, on a white or yellow ground, in irregular stripes and spots of pink or scarlet and purple, sometimes going through the whole petal, and sometimes broken irregularly. Picotees have a white or yellow ground, delicately edged or spotted with some dark colour, the spots being extremely small and delicate—whence the name, which is derived from *piquetée*, or spotted. Each of these kinds are again divided by their colours, as scarlet-flake, pink-flake, purple-flake, scarlet-bizarre, &c., &c. ; as it must be observed that the stripes or spots in carnations are always either scarlet, purple, or pink, or some shade of these colours, on a white or yellow ground.

The soil in which carnations are grown should be a very rich loam, mixed with a little sand, and as carnations are found to suffer exceedingly by the changes in the weather, they are generally kept in pots, which are more under the control of the grower than any bed can be in the open air. Carnations are, however, often very fine in beds, if the beds be well drained, in a warm open situation, and filled with a rich soil, properly prepared. The preparation of the soil is considered of so much importance by carnation growers, that every work published by a florist on the cultivation of the flower, is full of directions for preparing the soil ; and each florist has some particular receipt which he considers better than any other. One of the best, because the most simple, is that recommended by Maddock, in his *Florists' Directory*. According to this work, the best compost to be used for "such carnations as are grown in or near large towns," consists of one barrow-load of half rotten horse-dung a year old, two thirds of a barrow-load of sound fresh loam, and one third of coarse sea or river sand. These ingredients should be mixed together in autumn, and then formed into a heap about two feet thick, which should be left in an open situation, and turned over two or three times in the course of the winter, when it will be ready for use in spring. When it is not convenient to get all the ingredients in autumn, the dung alone, after it has been used as a hot-bed, may be thrown in a heap for the winter ; and, as its surface freezes, it may be pared off and laid on one side till the whole mass has been thoroughly frozen through. The loam and sand may in this case be added in February or March, but the whole must be thoroughly mixed together before it is used. In a pure air in the country, the proportions of dung and loam may be reversed, as less manure will be wanted than in town ; and if too much manure be used, the colours will not be clear.

When the compost is properly prepared, if intended for pots, it should be sifted through a coarse sieve, to take out any stones or other extraneous matter it may contain. The pots should be "at least twelve inches wide at top, six inches at the bottom, and ten inches deep in the inside ; with a circular aperture in the centre of the bottom of about an inch in diameter ; also three or four smaller holes round the sides of the pot, close to the bottom, to prevent the possibility of water lodging or remaining in that part." It is common to put an oyster-shell over the hole in the bottom of the pot, but this is a bad plan, as the oyster-shell is often pressed down flat over the hole, so as to cover it entirely, and the water being unable to escape, soddens or sours the soil,

so as to render it unfit to support vegetable life. The best mode of draining a pot is to put several crocks, or pieces of broken pot, at the bottom, laid one over the other, so as to keep the hole open. Some persons use small pieces of freestone for the same purpose, and these have the advantage of absorbing the moisture and parting with it slowly, so that they prevent the soil from becoming quite dry.

Carnations should be repotted for flowering about the middle of March. The pot should be first about half filled with compost, having the sides higher than the centre; and the plants, which are generally kept during winter in small pots having four plants in each, should have the ball of earth containing the plants carefully turned out of the pot, "and after rubbing off about half an inch of the surface of the old mould, round about the plants above their fibres, cleansing them, and cutting off the decayed points of their leaves, the ball is to be carefully placed in the centre of the pot, and the space between it and the sides filled up with the prepared compost. It is very necessary to be attentive in placing the plants, that they are neither planted deeper nor shallower than they were before; the compost should therefore be high enough to replace the old earth that was rubbed off on potting, exactly to the same height as before, that is half an inch higher than the ball of old earth and fibres; and the whole surface of the earth in the pot, when the operation is finished, should be nearly level or flat; but by no means higher at the centre than at the sides, because the plants would thereby be kept too dry; nor should the compost come nearer than within an inch of the top or rim of the pot, after it has been gently shaken, or struck against the ground on finishing, as an inconvenience will attend its being too full, when the operation of laying comes to be performed, which requires some additional mould on the surface, for the layers to strike into." When the plants are potted, they are placed in an open airy part of the garden on a bed set apart for that purpose, and covered with an archway formed of a great number of half hoops, that mats may be thrown over them to protect them from the effects of cold drying winds, heavy rain, and frosty nights; and while here they are regularly watered once a day with soft water from a fine round watering-pot.

When the Carnations are to be planted in the open ground, a bed about four feet wide, and of any required length, is excavated above two feet deep; at the bottom of which is placed a layer, about six inches deep, of brickbats, stones, and rubbish, to ensure drainage: on this is put the compost, which is raised a little above the bed to allow for sinking, and the plants are then planted in the same manner as in the pots, and treated in the same manner afterwards.

When the flower-stems are eight or ten inches high, they must be supported by sticks which are as high as the hoops will permit; but which must be replaced by other sticks about four feet long, when the plants are removed to the stage where they are to blossom. These sticks are generally painted green, and are broader at the bottom than at the top, to make them take a firm hold when they are plunged into the earth. As the stems advance in height they must be tied to these stakes, so that there may be a tie about every six inches up the stem; and the plants should be carefully looked at every two or three days, as they are apt to be attacked by insects, which should be washed off by dipping the shoot in clear water, and brushing it, if necessary, with a soft brush. When the calyx has swelled to nearly its full size, it is apt to burst and let out the petals on one side, which destroys the beauty of the flower; and to avoid this disaster, carnation-growers either tie the calyx round with a strip of wet bast mat, or put a narrow slip of bladder round it, with the ends wrapping over each other, which they attach with gum-water. When the flowers expand, they require to be shaded either by a paper cover fixed on the stick, or by a cloth awning stretched over the whole bed. The same awning as served







Dianthus Caryophyllus
1. Picotee (Emmeline) - 2. Picotee (Princess Frederica) - 3. Carnation (Bijou de Clermont) - 4. Carnation (Prince de Nassau)

for tulips will do very well ; but carnations are generally placed on a stage or platform when about to flower. When the carnations are in flower, they should be frequently examined to search for earwigs, which eat their way into the calyx and devour the claws of the petals. Sometimes a ring of brass wire is attached to the stick to support the flower ; and sometimes a piece of card is slipped over the calyx, before the expansion of the flower, to keep the claws of the petals together, as otherwise the petals become loose, and soon lose their beauty.

Carnations are propagated by layers, pipings, or seeds. Layers are shoots buried in the ground, so as to force them to take root at a joint, without separating them from the mother plant. This operation is best performed when the plants are in full bloom, which is generally about the middle or end of July. A number of pegs should be provided of bone, fern, or wood, each five or six inches long, with a short hooked end, and the operator should have a sharp penknife. The layer may have four or five joints ; and the lower leaves next the root are all to be cut or stripped off close, till within two or three joints of the end of the layer. Some persons also clip off the extreme point of the shoots "with a knife or pair of scissors, so as to leave them only an inch and a half, or two inches, in length, from the joint whence they proceed, according to the strength and substance of the layers." When all the layers in a pot are thus prepared, the surface of the earth must be cleared, and stirred about an inch deep, and the pot filled nearly level with some carnation compost, or other light rich mould, taking care that it is not of too fine a grain. The layer should then be cut about half through, about a quarter of an inch below the second or third joint from the tip, the knife being introduced on the side next the ground, and cut in a sloping direction upwards, "through the middle of the joint, and half or three quarters of an inch above it ; the small portion left under, and connected with the joint, is to be cut off horizontally, quite close to the bottom of the joint, but not into it, as it is from the outer circle of the bottom of the joint that the fibres proceed, consequently that part should not be injured ; but it is necessary to cut it off close to the joint, for it would decay if suffered to remain, and perhaps communicate its rottenness to the joint itself, and destroy the plant." (*Flor. Dir.* p. 184.) After the incision, the wounded branch must be carefully laid in the earth, and pegged down close behind the joint where the incision was made, great care being taken to avoid breaking it, or even cracking it at the joint ; and as there is great danger of this being the case from the great brittleness of the shoots, it is generally thought best to withhold water, and set the plant in the sun, so as to make it flag a little before the operation is commenced. When the layer is pegged down, the end of the shoot should be raised gently up with the hand, so as to cause the incision to gape, and the joint should be covered lightly with earth ; "for if it be buried more than half or three quarters of an inch deep, it will lose much of the benefit it should derive from the influence of the air, &c., and be more liable to decay ; at all events, it will require a longer time to strike root." The stalk of the layer should only be covered at the joint ; as if any of the foliage be buried, the moisture of the earth will make it decay, and the shoot becoming rotten will damp off. As soon as the joint is pegged down, it should be gently watered to settle the soil, and if the earth should be washed off the joint by the watering, it should be covered again to the same depth as before. As soon as the layers have taken root, which will be the case with some sorts in about three weeks or a month after layering, and with others in about two months, they must be cut from the mother plant with about half an inch of stalk, and placed in small pots, four in a pot, for the winter. The pots should then be placed on a bed of coal ashes, or on a stone or slate shelf, as they are said to be rendered sickly if exposed to the vapour of vegetables in a state of decomposition. In the beginning of November, the plants are put into frames, which must be kept quite dry, or the plants will mildew.

They must likewise have air whenever the weather will permit, as they are quite as liable to be injured by wet as by frost. When the mildew makes its appearance, which it does in purple spots on the foliage, the plants should be instantly removed from the others, and either thrown away, or the infected parts cut out; as, if the infected plants are left amongst healthy ones, these last will soon become diseased.

Pipings are, properly speaking, cuttings; but they are called pipings, because sometimes they are pulled asunder by taking a shoot in one hand, and pulling it with the other just above a pair of leaves, so as to separate the upper part of the shoot from the lower, at the socket formed by the axils of the leaves; leaving the upper part, which was pulled off, with a tubular or pipe-like termination. The piping is generally two or three joints long, and when not pulled, it is cut off just below a joint. Some cultivators cut off the tips of the leaves, but others think this practice injurious. As soon as the cuttings or pipings are made, they are placed in pots in light soil, and covered with a hand-glass. Sometimes the pipings are put into a slight hotbed, covered with sifted mould, without any pots, and picotees will strike well in a rich soil, in the open air. The pipings should be planted "about three quarters of an inch deep, and watered to make the soil adhere to them, and then the glasses may be placed over them, and left undisturbed for two or three weeks, unless the weather be very dry, in which case they will require a little water," which should be applied either before sunrise, or after sunset, watering "over the hand-glasses and surrounding soil, as this will be sufficient to keep the cuttings moist. After the first three weeks they may be allowed the free air for a short time each; and about the end of August, they will be rooted enough for being removed into pots." (*Flor. Jour.* p. 42.) Sometimes the ground is moistened before the pipings are put into it, and the hand-glass is pressed on it, in order that the cultivator may know how many pipings the space will hold. When the pipings or cuttings are rooted, they must be removed to pots to keep during winter, and treated in the same manner as the layers. Sometimes, instead of the compost recommended in p. 95, one of equal parts of light yellow loam, vegetable mould, and decayed manure. Another compost consists of equal parts of old cow-dung and loam. The last two mixtures have the advantage of being ready for use immediately. In all composts it must be kept in view, that unless the soil be rich, the herbage, or grass as it is called, will be poor, and the plants too weak to flower well; though, on the contrary, if the soil be too rich, the colours will run into one another, and will lose the beautiful clearness and distinctness which constitutes the chief merit of a fine carnation.

Seeds are seldom used in propagating carnations, except for raising new varieties; but when they are required they should be chosen from those flowers that have not many petals, but "their petals should be large, broad, substantial, and perfectly entire at the edge, and their colours rich, and regularly distributed." (*Maddock.*) Neither layers nor pipings should be taken from those plants that produce seeds; and as soon as the petals wither, they should be drawn carefully out of the calyx, as the claws are apt to decay and engender mouldiness, which will destroy the seeds. About September or October the seeds will be ripe; but they should not be gathered till they become of a very dark brown, or black. The seeds, when ripe, should remain in the seed-vessel, and be kept in a dry room till May, when they should be sown in pots, in light rich mould, or carnation compost, and kept in the open air, in an airy part of the garden, shaded from the heat of the sun, till the plants are about three inches high, when they should be planted out in a bed of good rich mould, about ten or twelve inches apart, and kept there till they flower, when it will be seen what are deserving of being kept, and what should be thrown away. No carnations are esteemed that are not round, and regularly formed, and clear in colour; the margins

of the petals are also smooth. The picotees, on the contrary, have the margins of the petals generally finely serrated. The culture of the picotee is exactly the same as that of the carnation; except that, as it is much hardier, it does not require so much care during winter.

16.—DIANTHUS PLUMARIUS, *Lin.* THE COMMON, OR FEATHERED PINK.

SYNONYMS.—*D. dubius*, *Horn.*; *D. moschatus*, *Hort. Par.*

ENGRAVINGS.—Figs. 1 to 4 in Plate 24.

SPECIFIC CHARACTER.—Glaucous; 2—3-flowered; teeth of calyx

obtuse; calycine scales somewhat ovate, very short, mucronate, close-pressed. Petals jagged, multifid, bearded, leaves linear, with scabrous margins. (*G. Don.*)

DESCRIPTION, &c.—The pink differs from the carnation, in being a much smaller flower, and in having the margins of the petals deeply cut or fringed. It is also so much hardier as seldom to be grown in pots. Pinks are indeed generally planted in the open border, without any other care than what is usually bestowed upon perennial flowers; but when it is wished to have the flowers fine, a bed is formed about two feet deep of fresh loamy soil, with a stratum of equal parts of two years' old cow-dung and earth, well mixed together, and about six inches thick, placed five or six inches below the surface. The pinks should be planted in this bed in August, or early in September; and they should be placed about nine inches apart. The bed should be rounded on the surface to throw off heavy rains; and it will require no other care, except an occasional watering in very dry weather, or a slight covering in very severe frosts, except keeping it free from weeds, and occasionally stirring the surface with a fork if it appears becoming too hard. Strong plants will throw up a great number of flower-stems, but these should be thinned out, and only the strongest left, as no plant, however vigorous it may be, should be suffered to bear more than twelve blossoms, and weakly plants not more than four or five. All the small side-buds should always be rubbed off, as they never produce fine flowers. When the pods appear greatly swelled and in danger of bursting prematurely, they should be tied round with a piece of bast mat, as pinks are still more apt than carnations to be spoiled by bursting irregularly on one side, particularly those kinds which have the calyx short and round. When this is the case, many botanists divide the sepals with a penknife as low as they think it necessary to produce a good flower; and this is called letting down the pod. Some persons cut small circular pieces of card which they put over the calyx so as to support the petals of the flowers; but these card boards are not suitable for pinks grown in the open air, as they are destroyed by much rain.

Pinks are propagated in the same manner as carnations; that is, by layering, piping, and seeds. In the latter case, those plants which have blossoms with few petals, and long narrow pods, produce the greatest quantity of seed, though such seed "will not be likely to produce such large and double flowers as that which is sowed from plants possessing superior qualities."

There are numerous kinds of pinks, the most beautiful of which are the varieties of laced pink, and Anna Boleyn. The laced pink (*figs. 1 and 2 in Plate 24*) has the broad part of the petal, marked with a border or lacing of brownish red just within the fringe, then a clear space of white, and near the claw, a blotch of rich dark-purple, which should look like velvet, and be as nearly black as possible. The other pinks which are not laced should have a dark band (*fig. 4*), on clear white. Some pinks are but little fringed, and it is considered a desirable object to get one rose-leaved, that is, with an entire margin. The handsomest pink grown in gardens is Anna Boleyn, *fig. 3 in Plate 24*; and it is one of the most abundant flowerers. In Mr. Hopgood's nursery in the summer of 1842, this pink was most splendidly in flower for several weeks.

OTHER SPECIES OF DIANTHUS.

D. LATIFOLIUS, *Dec., Swt. Brit. Flow. Gard. t. 2.*

This species is closely allied to the Sweet William, but the leaves are broader, and the flowers of a deep rich crimson. Neither the native country nor year of introduction is known; and probably the plant is only a dwarf variety of *D. aggregatus* (see page 91). It is sometimes called *D. barbatus pumilus* or *D. pumilus*. This plant is generally thought difficult to grow, and, in fact, it will not live either in a clayey soil or in a very moist situation. The best way to treat it, is to prepare a small bed, by taking out the soil to about the depth of six inches, and filling up the space with old mortar and a very small portion of leaf-mould. The plants should then be planted, and it is impossible to conceive anything more splendid than they will be when in flower.

D. JAPONICUS, *Dec.*

This species, which has red flowers, was introduced from China in 1804. There are several kinds nearly allied to it.

D. BALBISHI, *Dec.*; D. GLAUCOPHYLLUS, *Hornemann, Swt. Brit. Flow. Gard., 2nd ser. t. 23.*

This pink has its flowers disposed in crowded heads like the Sweet William, but each flower individually is more cut at the margin, and the petals are wider apart. It is generally grown on rockwork, where it will continue in flower from July to October.

D. GIGANTEUS, *D'Urville, Swt. Brit. Flow. Gard. t. 288.*

A tall plant with red flowers, nearly allied to *D. Ballisii*. It is a native of Bulgaria, whence it was introduced about 1827. In good soil it will grow four feet high.

D. BISIGNIANI, *Ten., Bot. Reg., 1838, t. 29; Syn. D. RUPICOLA, Dec.*

A showy, half hardy, suffruticose pink, with fleshy leaves. It is a native of Sicily and Naples, and it was introduced in 1825.

There are several other species of *Dianthus* with corymbose heads of flowers, but they are rarely seen in British gardens. The following are more or less allied to the Carnation.

D. CAMPESTRIS, *Bieb., Bot. Mag. t. 1876.*

This plant has small pink flowers, and a creeping underground stem, which sends up shoots at every joint. The petals are very much serrated. It is a native of Russia, and was introduced in 1815.

D. LEPTOPETALUS, *Willd., Bot. Mag. t. 1739. Syn. D. POMERIDIANUS, Bieb.*

This plant, which is more curious than beautiful, is remarkable for its long, narrow, white petals, and very slender stems; which are often two feet or more in height, though only bearing two or three flowers. It is a native of the country round Mount Caucasus. It flowers in July. Introduced in 1814.

D. CRENATUS, *Willd., Bot. Reg. t. 256.*

A species with long slender buds and white flowers. A native of the Cape of Good Hope; introduced in 1817. There are many other species, but they are seldom seen in British gardens; and generally they are scarcely deserving of cultivation.





Dianthus plumarius, or Pink.
1. Sir Walter Scott. — 2. Duke of St. Albans & Queen of Bohemia. — 4. A common Garden variety.



GENUS II.

SILENE, *Lin.* THE CATCHFLY.*Lin. Syst.* DECANDRIA TRIGYNIA.

GENERIC CHARACTER.—Calyx tubular, 5-toothed, naked. Petals 5, bifid, unguiculate, usually crowded in the throat with as many bifid scales. Stamens 10. Styles 3. Capsules 3-celled at the base, ending in six teeth at the apex. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus have generally on their stems a kind of viscid frothy moisture, which is said to entrap flies. The name of *Silene* is from a Greek word alluding to the same moisture. The species are very numerous, and generally very much alike; they are nearly all hardy, and none of them are shrubs; many of them are English weeds, but the greater part are ornamental, and worth cultivating in a garden. Many of the species are annual. The colours of the flowers are white, red, or purple.

PLANTS TUFTED; ALMOST STEMLESS. SCAPES 1-FLOWERED.

1.—SILENE ACAULIS, *Lin.* THE STEMLESS CATCHFLY, OR MOSS CAMPION.

ENGRAVINGS.—*Eng. Bot.* t. 1081; 2d ed. t. 629; and *Bot. Mag.* t. 1881. linear-lanceolate. Flowers dioecious from abortion; peduncles solitary, short, 1-flowered. Calyx campanulate. Petals obovate or orbiculate. (*G. Don.*)

SPECIFIC CHARACTER.—Glabrous. Stems dense, humble. Leaves

DESCRIPTION, &c.—This very pretty little plant, which does not grow above six inches high, has pink flowers, and is admirably adapted for rockwork. There are several varieties, one of which has double flowers, and another is white. It flowers in June and July. This species is very common on the Scotch and Welsh mountains, and it is, indeed, found wherever there is mountain scenery in all the temperate regions of the northern hemisphere. When cultivated, it requires a dry, airy situation, and a very light sandy soil.

PLANTS CAULESCENT. FLOWERS SOLITARY, OR PANICLED. CALYX INFLATED, BLADDERY.

2.—SILENE FIMBRIATA, *Sims.* THE FRINGED CATCHFLY.

SYNONYMS.—*Cucubalus fimbriatus, Bieb.*; *C. multifidus, Adams*; *Lychnis Behen alba, Buxb.* undulated, on long footstalks. Flowers in large spreading panicles. Calyx greatly inflated with broad teeth. Petals fringed, incurved, appendages bifid.

ENGRAVINGS.—*Bot. Mag.* t. 908; and our *fig.* 8 in Plate 25.

SPECIFIC CHARACTER.—Pubescent. Leaves large, ovate-lanceolate,

DESCRIPTION, &c.—This very curious species is quite hardy, and very showy when in flower. The petals have the limb cut into very fine lobes, so as to appear fringed. The species is a native of Mount Caucasus, and it was introduced in 1803. The plant grows about two feet high, and it flowers in July.

3.—SILENE INFLATA, *Smith.* THE BLADDER CAMPION.

SYNONYME.—*Cucubalus Behen, Lin.*

ENGRAVING.—*Eng. Bot.* t. 164; 2d ed. t. 620.

SPECIFIC CHARACTER.—Flowers numerous, drooping, paniced. Petals deeply cleft with narrow segments; the coronal scales mostly wanting. Calyx smooth, inflated, reticulated. Leaves ovate-lanceolate.

VARIETIES.—These are very numerous, but the most remarkable

are the kind with double flowers, which is a most ornamental garden plant, and the Sea Campion, sometimes considered to be a separate species, and called *S. maritima*. The flowers of the Sea Campion are larger, and the petals are broader, and of a more brilliant whiteness than in the species. It is generally found on the sea-coast.

DESCRIPTION, &c.—This beautiful British plant is common not only in corn-fields and pastures, but by the road sides in every part of Britain, especially on chalky and calcareous soils. In gardens it is much improved

by cultivation, and the double-flowered variety is particularly handsome. It is also valuable for keeping in flower from June to September. The young shoots and leaves are eatable, and when boiled, they resemble green peas in flavour. The species will grow in any soil or situation, but it grows best in chalky soils, and where it has abundance of light and air.

PLANTS CAULESCENT. FLOWERS DISPOSED IN VERTICILLATE PANICLES OR RACEMES.

4.—SILENE OTITES, *Pers.* THE SPANISH CATCHFLY.

SYNONYMES.—*Cucubalus Otites*, *Lin.*; *Lychnis Otites*, *Scop.*

ENGRAVING.—*Eng. Bot.* t. 85; 2d ed. t. 624.

SPECIFIC CHARACTER.—Flowers dioecious. Petals linear, entire. Leaves spatulate, roughish. Stem erect, few-leaved. (*Smith.*)

VARIETIES.—These are numerous on the Continent, but only one appears to be in British gardens. This plant has a very high stem, with the whorls distant from each other, but many-flowered, and very dense.

DESCRIPTION, &c.—This species differs from the other kinds of *Silene*, in having the flowers in whorls. The flowers themselves, though small, are very pretty, and they droop gracefully from the great length of their footstalks. The species is a native of England, and grows best on sandy or gravelly soil.

PLANTS WITH STEMS. FLOWERS PANICLED, ERECT, OR DROOPING. CALYX TUBULAR, SOMETIMES CLUB-SHAPED AT THE APEX.

5.—SILENE SAXATILIS, *Bieb.* THE STONE CATCHFLY.

ENGRAVINGS.—*Bot. Mag.* t. 689; and our *fig.* 9 in Plate 25.

SPECIFIC CHARACTER.—Smooth; stem few-leaved; radical leaves oblong, blunted, stalked; cauline one, lanceolate-linear. Calyx cla-

vate, 10-stripped. Flowers panicled, naked, drooping. Petals bifid, crowned.

DESCRIPTION, &c.—This very singular species is a night-flowering plant, giving out a delicious fragrance when it unfolds its flowers. It is a native of Siberia, whence it was introduced in 1800. It is quite hardy, and will grow in any common garden soil, and in any situation which is airy and tolerably dry, as it is very apt to be rotted off by wet. It flowers in June and July.

6.—SILENE VIRGINICA, *Lin.* THE VIRGINIAN CATCHFLY.

ENGRAVINGS.—*Bot. Mag.* t. 3342; and our *fig.* 4 in Plate 25.

SPECIFIC CHARACTER.—Plant covered with clammy pubescence; stems procumbent, assurgent, branched; leaves lanceolate, lower ones

on very long footstalks, ciliated at the base; flowers large, panicled, sometimes crowded; calyx amply clavate; petals broad, bifid, crowned with long claws. (*G. Don.*)

DESCRIPTION, &c.—This species bears considerable resemblance to *S. regia*, but the flowers are much smaller and the leaves narrower. The species is a native of Virginia, whence it was introduced in 1783, though it is very seldom seen in gardens, the more beautiful *Silene regia* having completely supplied its place. When it is grown, any common garden soil will suit it.

7.—SILENE ORNATA, *Ait.* THE ORNAMENTAL CATCHFLY.

ENGRAVINGS.—*Bot. Mag.* t. 382; and our *fig.* 3 in Plate 25.

SPECIFIC CHARACTER.—Plant pubescent; stems erect, branched; leaves lanceolate bluntish; flowers panicled; calyx cylindrical, ventri-

cose, with alternate stripes and veins; petals two-parted; lobes broad, denticulated, crowned. (*G. Don.*)

DESCRIPTION, &c.—This very ornamental species is generally considered only half hardy, but it has been







1. *Silene compacta*. — 2. *Silene Pennsylvanica*. — 3. *Silene ornata*. — 4. *Silene Virginica*.
 5. *Silene laciniata*. — 6. *Silene regia*. — 7. *Silene chlorocephala*.
 8. *Silene fimbriata*. — 9. *Silene saxatilis*.



found that it will succeed very well in the open air. It is a biennial, and the best mode of treating it is to sow the seeds in pots, either in autumn or very early spring. In the first case, they should be kept under shelter all the winter, and planted out in spring; and in the second, the pots should be plunged in a hotbed as soon as the seeds are sown in February, and the young plants should be planted out in May. The species is a native of the Cape of Good Hope, and it was introduced in 1775.

8.—*SILENE PENNSYLVANICA*, Michx. THE PENNSYLVANIAN CATCHFLY, OR AMERICAN WILD PINK.

SYNONYMS.—*S. iocarnata*, Lodd.; *S. caroliniana*, Walt.

ENGRAVINGS.—Bot. Reg. t. 247; and our fig. 2 in Plate 25.

SPECIFIC CHARACTER.—Viscidly pubescent. Radical leaves spatu-

late; canline ones lanceolate. Petals obtuse, somewhat emarginate, subrenato.

DESCRIPTION, &c.—This is a dwarf plant, with clusters of large pink flowers, which is very ornamental for rockwork, or in beds in geometrical flower-gardens. It is a hardy perennial, propagated by dividing the roots; and it will grow in any garden soil, and common situation. It is a native of Pennsylvania, and was introduced in 1806. It seldom grows above three or four inches high; but it bears a great profusion of flowers, each of which is as large as the flower of the wild pink.

9.—*SILENE CHLORÆFOLIA*, Smith. THE CHLORA-LEAVED CATCHFLY.

ENGRAVINGS.—Bot. Mag. t. 307; Swt. Brit. Flow. Gard., 2d ser., t. 263; Bot. Reg. t. 1989; and our fig. 7 in Plate 25.

SPECIFIC CHARACTER.—Plant very smooth and glaucous. Stems branched. Leaves elliptical, pointed, upper ones rather cordate;

flowers large, disposed in a terminal panicle. Calyx long, cylindrically-clavate, downy; petals two-lobed; lobes broad, obovate, with two-parted appendages. (*G. Don.*)

DESCRIPTION, &c.—This is the most compact-growing of all the kinds of *Silene*; and it has broad, firm, well-coloured leaves, which contrast well with its large, pure white flowers, with pinkish calyxes, and which become pink in dying off; it also continues a long time in flower. It should be grown in a light, but rich loamy soil, when it will flower luxuriantly; but in poor sandy soil, or on rockwork, the flowers are small, and the whole plant becomes dwarfed. It is a native of America, where it was discovered by Tournefort; and it was introduced by Mr. Hunneman in 1796.

10.—*SILENE REGIA*, Sims. THE ROYAL CATCHFLY.

SYNONYME.—*S. virginica*, var. *Illinoensis*, Michx.

ENGRAVINGS.—Bot. Mag. t. 1724; Swt. Brit. Flow. Gard., 2d ser., t. 313, and our fig. 6 in Plate 25.

SPECIFIC CHARACTER.—Plant clammy, pubescent. Leaves ovate-

lanceolate. Flowers large, panicled. Calyx downy, long, tubular. Petals ob-lanceolate, undivided, crowned with bicupulate appendages. Stamens very long. (*G. Don.*)

DESCRIPTION, &c.—This splendid plant in rich soils grows three or four feet high; but in poor soils it is of comparatively very low growth, though it still produces a profusion of its splendid flowers. It is quite hardy, and will grow in any common garden soil and situation. The stems are hollow and jointed; and the leaves of a yellowish green. It thrives most in a compost of peat and loam, and it is propagated by division, as it rarely ripens its seeds in this country. It is a native of North America, where it was found on the banks of the Mississippi, growing in great abundance. It was introduced in 1811.

11.—SILENE LACINIATA, *Cav.* THE CUT-FLOWERED CATCHFLY.

SYNONYME.—*Lychuis pulchra*, *Schlecht.*

ENGRAVINGS.—*Bot. Reg.* 1444; *Pact. Mag. of Bot.*, vol. i. p. 267; and our *fig.* 5 in Plate 25.

SPECIFIC CHARACTER.—Plant pubescent. Stem erect, branched.

Leaves large, lanceolate-acute. Flowers very large, terminal, rather drooping; peduncles 1-flowered. Calyx long, cylindrically ventricose. Petals somewhat 4-cleft. Stamens short. (*G. Don.*)

DESCRIPTION, &c.—A very showy species, a native of Mexico, but one which it is very difficult to manage. It will not thrive either in a stove or greenhouse, and yet it is scarcely hardy enough for the open air. The best way of treating it appears to be to keep it in a frame during winter, and to plant it in the open ground in spring, for it to flower during summer. It is generally increased by cuttings, as it seldom ripens seeds. It is a native of Mexico, and was introduced in 1823.

12.—SILENE COMPACTA, *Fisch.* THE COMPACT-FLOWERED CATCHFLY.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser. t. 64; *Lodd. Bot. Cab.*, t. 1638; and our *fig.* 1 in Plate 25.

SPECIFIC CHARACTER.—Plant glabrous, glaucous. Stem erect, branched; leaves ovate-cordate, sessile, with two large ones like an

involucre near the corymb, appearing as if they were connate. Bractees narrow, shorter than the pedicels. Flowers crowded into dense corymbs. Calyx very long, clavate. Petals ovate-acute, entire, crowned.

DESCRIPTION, &c.—This very beautiful species is a biennial, growing about two feet high in the open ground, and rather lower on rockwork. It is very handsome, and produces abundance of flowers. It is a native of Mount Caucasus, and quite hardy in British gardens. It was introduced in 1810. The seeds should be sown in March, and the plants should be transplanted in autumn to the places where they are to flower.

OTHER SPECIES OF SILENE.

These are so extremely numerous, that it will only be necessary here to mention a few of the most prominent.

S. STELLATA, *Ait., Bot. Mag.* t. 1107.

The flowers are white, without a crown, and the petals are fringed. It is a native of North America, from Virginia to Canada. It was introduced in 1696.

S. PUSILLA, *Waldst et Kit.; Swt. Brit. Flow. Gard.* 2d ser. t. 40.

A very pretty little Alpine plant, growing in tufts, and with white flowers. A native of Hungary, on the Alps. Introduced in 1804.

S. ALPESTRIS, *Jacq.; Swt. Brit. Flow. Gard.* t. 111.

The plant is glabrous, with a somewhat creeping root. The flowers are white and shining. A native of Austria, on the Alps; introduced in 1774. Both this and the preceding species are very suitable for rock-work.

S. SAXIFRAGA, *Lin.*

A small plant, with pinkish flowers, a native of France; introduced in 1640.

S. SUPINA, *Bieb.*

A very pretty species, with a procumbent stem, sending up erect shoots at intervals. The flowers have white petals, and the calyxes tinged with pink. The species is a native of Mount Caucasus, whence it was introduced in 1804. There is a variety with broader leaves.

Most of the other ornamented species of *Silene* are annuals.

GENUS III.
LYCHNIS, *Lin.* THE LYCHNIS.

Lin. Syst. DECANDRIA PENTAGYNIA.

GENERIC CHARACTER.—Calyx cylindrical, clavate, 5-toothed, naked. | ten. Styles five. Capsules one-celled. Anthophorum long or short.
Petals five, unguiculate, crowned with scales at the throat. Stamens | (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus have all showy flowers, most of which are, indeed, of so brilliant a scarlet as to give rise to the name, which signifies a link or lamp. Several species formerly included in this genus have been removed to *Agrostemma*; and others formerly included in *Agrostemma*, have been removed to *Lychnis*. All the species are hardy, and all remarkably showy. They are also mostly perennial; the only annuals now left in the genus being *L. Cali-Rosa*, and its varieties.

1.—LYCHNIS CHALCEDONICA, *Lin.* THE SCARLET LYCHNIS.

ENGRAVINGS.—Bot. Mag. t. 257; and our *fig. 1* in Plate 26.

SPECIFIC CHARACTER.—Plant smoothish, clammy. Flowers corymbose, in bundles; calyx cylindrical, clavate, ribbed; petals two-lobed.

DESCRIPTION, &c.—There are several varieties of this very showy species, as for example the double scarlet and the single and double white. Both the species and the varieties have been common for above two hundred years in British gardens, as they were mentioned by Gerard in 1596; and they were in such favour with Parkinson, that in his *Paradisus Terrestris*, published in 1640, he is represented in the frontispiece holding a double scarlet *Lychnis* in his hand. The species is a native of Russia, but it has been long in cultivation in every part of Europe, it being called *Croix de Malthe*, in France and Portugal, *Croce de Cavaliere* in Italy, and *Croix de Jerusalem* in Spain. The culture of the Scarlet *Lychnis* is very simple. The species is increased by parting its roots in autumn, or by seeds sown in spring; but the varieties, and especially the double kinds, are best increased by cuttings, taken off before the flowers open, as when the root is divided, the flowers are apt to degenerate; the cuttings are, however, rather difficult to strike. All the kinds thrive best in a light rich loamy soil.

2.—LYCHNIS FLOS JOVIS, *Lin.* THE FLOWER OF JOVE, OR UMBELLATED LYCHNIS.

SYNONYMES.—*Agrostemma Flos Jovis, Lin.*; the umbelld Rose | umbellate heads; calyx cylindrical, clavate, ribbed; petals two-lobed;
Campion. | anthophorum short, thick. Leaves lanceolate, clasping the stem, silky

ENGRAVING.—Bot. Mag. t. 398.

SPECIFIC CHARACTER.—Plant white from tomentum. Flowers in | tomentum. (*G. Don.*)

DESCRIPTION, &c.—This species is by no means entitled to its lofty name of Flower of Jove, as it possesses very little beauty. The flowers are pink, and grow close together, so as to form a very small compact umbel; and the leaves are thick and covered with a silky or rather woolly down. The flowers are produced in June and July. The plant should be grown in rather a stiff loam, and it may be propagated by parting its roots, or by seed, the latter mode being thought the best. It is a native of Switzerland, and was introduced in 1726. There is a variety with the flowers on longer footstalks, and forming larger umbels.

3.—LYCHNIS CORONATA, *Thun.* THE CHINESE LYCHNIS.

SYNONYME.—*L. grandiflora*, *Jacq.*

ENGRAVINGS.—*Bot. Mag.* t. 223; and our *fig. 2* in Plate 26.

SPECIFIC CHARACTER.—Plant glabrous. Flowers solitary or tern,

terminal and axillary; calyx terete, clavate, ribbed; petals lacerated; antherophorum very long. Leaves ovate, almost sessile. (*G. Don.*)

DESCRIPTION, &c.—This very showy plant is a native of China and Japan, whence it was introduced by Dr. Fothergill, about 1772. It was first kept in a stove, then removed to the greenhouse, and lastly to the open air. It was at first thought very difficult to keep; but it is now found only to want taking up occasionally and replanting. It is best propagated by cuttings, but it may also be divided at the root.

4.—LYCHNIS FULGENS, *Fisch.* THE FULGENT LYCHNIS.

ENGRAVINGS.—*Bot. Mag.* t. 2104; *Bot. Reg.* t. 478; and our *fig. 3* in Plate 26.

SPECIFIC CHARACTER.—Plant hairy. Flowers in fastigate corymbs;

calyx terete, clavate, woolly; petals 4-cleft, outer segments awl-shaped; antherophorum short. Leaves ovate, hairy. (*G. Don.*)

DESCRIPTION, &c.—This plant differs from the common Scarlet Lychnis principally in the flowers being much larger, and the leaves broader, while the stem of the plant is much shorter. It is a native of Siberia, whence it was introduced in 1819. It requires the same treatment as the other species, and, like all the kinds of Lychnis, it varies very much according to the soil and situation in which it is grown.

GENUS IV.

AGROSTEMMA, *Lin.* THE ROSE CAMPION.

Lin. Syst. DECANDRIA PENTAGYNIA.

GENERIC CHARACTER.—Calyx egg-shaped, or campanulate, with five short teeth. Petals five, unguiculate, crowned. Stamens ten. Styles five. Capsule one-celled. Antherophorum very short or wanting. Leaves linear, lower ones spatulate. (*G. Don.*)

DESCRIPTION, &c.—The common Rose Campion is so well known that most persons have no other idea of flowers belonging to this genus than that they have thick woolly leaves and red flowers. Several species have, however, been removed to this genus from Lychnis, which give it quite a different character. The two genera are nearly allied, the only difference being that Lychnis has a club-shaped calyx, and a long antherophorum, or flower-stalk, within the calyx; while in *Agrostemma* the calyx is tubular, and the antherophorum short. The name of *Agrostemma* is from two Greek words, signifying a field crown.

1.—AGROSTEMMA CORONARIA, *Lin.* THE COMMON ROSE CAMPION.

SYNONYMES.—*Lychnis coronaria*, *Jam.*; Rose Cockle; Honesty, in the Midland Counties.

ENGRAVINGS.—*Bot. Mag.* t. 24; and our *fig. 5* in Plate 26.

SPECIFIC CHARACTER.—Plant woolly. Stems dichotomous. Pedun-

cles elongated, one-flowered; calyx somewhat campanulate; petals emarginate, crowned, serrated. Leaves lanceolate, very broad, leathery. (*G. Don.*)

DESCRIPTION, &c.—This plant is remarkable for its thick woolly leaves, which are covered with a silky down, so as to look quite white at a little distance. There are three or four varieties, one of which has white flowers, and one double. The species may be propagated by seeds, but the varieties by division of the root. The new plants should be planted without manure, and only watered for a day or two, as much manure, or much moisture, will be found very injurious to them. The species is a native of the mountains of Italy and Switzerland, and also of Mount Caucasus, and it was introduced before 1596.



1. *Lychnis Chalcedonica*. 2. *Lychnis coronata*. 3. *Lychnis fulgens*.
 4. *Agrastemma Bungeana*. 5. *Agrastemma coronaria*. 6. *Saponaria glutinosa*
 7. *Saponaria balatrica*. 8. *Gypsophila prostrata*.

2.—AGROSTEMMA BUNGEANA, *D. Don.* DR. BUNGE'S SCARLET CAMPION.SYNONYME.—*Lychnis Bungeana*, *Fisch. et Mey.*ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 317; *Bot. Reg.* t. 1864; *Bot. Mag.* t. 3594; and our *fig. 4* in Plate 26.

SPECIFIC CHARACTER.—Stem pubescent. Leaves ovate-lanceolate, ciliated, sessile. Flowers axillary, or terminal, solitary. Calyx hairy, deeply ten-angled. Petals wedge-shaped, deeply cut.

This splendid flower was found in a garden at Pekin, by Dr. Alexander Bunge, who was attached to the Russian mission to China, and sent by him to St. Petersburg, whence it reached England in 1835. It appears hardy in the climate of London, but it requires full exposure to the light, without which its flowers soon become weak and lose their brilliancy of colour. It should be planted in rich soil, and as it is much affected by cold and drying winds, it thrives best when covered with a hand-glass or some other protection in frosty weather and east winds. It is propagated by division of the root or cuttings.

OTHER SPECIES OF AGROSTEMMA.

A. SYLVESTRIS, *Hoppe*; LYCHNIS DIOICA, *Lin.*; L. DIURNA, *Sibth.*; RED CAMPION.

This is a well-known British plant, the double variety of which is very handsome, and is common in gardens.

A. DIOICA, *G. Don.*; L. DIOICA, *var. B Lin.*; L. VESPERTINA, *Sibth.*; L. ALBA, *Mill.*

This is the white-flowered variety of the old *Lychnis dioica*, from which it differs principally in the lobes of the petals being much broader, and the capsules conical instead of roundish. The flowers are also fragrant in an evening, which those of the red-flowered kind never are. There are three varieties, one with the flowers double, another with the flowers some bluish coloured and some white on the same plant, and the other with double flowers, having green petals.

A. FLOSCUCULI, *G. Don.*; L. FLOSCUCULI, *Lin.*, RAGGED ROBIN.

A well-known British plant, a double-flowered variety of which is often found in gardens. There is also a variety with white flowers.

GENUS V.

GYPSOPHILA, *Lin.* THE GYPSOPHILA.*Lin. Syst.* DECANDRIA DIGYNIA.

GENERIC CHARACTER.—Calyx campanulate, angular, somewhat five-lobed, with membranous margins. Petals five, not unguiculate. Stamens ten. Styles two. Capsule one-celled. (*G. Don.*)

DESCRIPTION, &c.—Most of the species are little insignificant plants, well adapted for rockwork; but some are large enough for border flowers. A chalky soil is most suitable to them, and hence the name of the genus, *Gypsophila*, signifying chalk-lover. The species are generally propagated by seeds, which they ripen in abundance; but cuttings under a hand-glass will strike root freely. Several of the species are annuals; and of the perennials the most common in British gardens are *Gypsophila prostrata*, *Bot. Mag.* t. 1281, and our *fig. 8* in Plate 26, and *G. repens*, *Bot. Mag.* t. 1448.

GENUS VI.
SAPONARIA, *Lin.* SOAPWORT.

Lin. Syst. DECANDRIA DIGYNIA.

GENERIC CHARACTER.—Calyx tubular, five-toothed, naked at the base. Petals unguiculate; claws equal in length to the calyx. Stamens ten. Styles two. Capsules one-celled. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus differ from those included in *Dianthus*, principally in having no calycine scales. The name of *Saponaria* alludes to the soapy properties of the British species, as even the leaves will make a lather, and take out spots of grease, &c., like soap. Most of the species are annuals or biennials; and the latter should be grown in sand, loam, and peat, in a dry situation, as they are easily injured by wet, and may be propagated by seeds or cuttings. The perennials are mostly only half hardy, and have their flowers in heads. All the species are very ornamental.

1.—SAPONARIA OCYMOIDES, *Lin.* THE BASIL-LIKE SOAPWORT.

ENGRAVING.—*Bot. Mag.* t. 154. glandular hairs. Leaves ovate-lanceolate, generally one-nerved. (*G. Don.*)
SPECIFIC CHARACTER.—Stem procumbent, dichotomous. Flowers in paniced bundles; calyx cylindrical, villous, purple, beset with

DESCRIPTION, &c.—A very elegant plant, with trailing stems and pink flowers, which as it will only thrive in a pure air and dry situation, is admirably adapted for rockwork. It flowers profusely, and continues producing a succession of blossoms during the whole of the summer. It seldom produces seeds, but is readily propagated by cuttings. It is a native of the South of Europe, whence it was introduced in 1768. It is perfectly hardy.

2.—SAPONARIA CALABRICA, *Guss.* THE CALABRIAN SOAPWORT.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 79; and our *fig.* 7 in Plate 26. axillary, solitary; calyx cylindrical, beset with glandular villi. Petals orbicular, narrowed at the base. Seeds tubercular, rather globose. (*G. Don.*)
SPECIFIC CHARACTER.—Root fibrous. Stem erect; dichotomously branched. Leaves obovate-spatulate, usually one-nerved. Flowers

DESCRIPTION, &c.—This very beautiful little plant was described by Gussone, who named it, as an annual; but it is now found to last two or three years, and sometimes more. The flowers are very brilliant in colour, and are produced in great abundance. The stem is procumbent, and the whole plant is admirably adapted for rockwork. It grows well in any light rich soil, and strikes readily by cuttings. It is a native of Calabria, whence it was introduced in 1830.

3.—SAPONARIA GLUTINOSA, *Bieb.* THE GLUTINOUS SOAPWORT.

SYNONYME.—*Silene Armeria*, *Pall.* in corymbose bundles; calyx long, terete, beset with glandular hairs. (*G. Don.*)
ENGRAVINGS. *Bot. Mag.* t. 2855; and our *fig.* 6 in Plate 26. Leaves ovate, three-nerved. (*G. Don.*)
SPECIFIC CHARACTER.—Stem erect, branched. Flowers paniced,

DESCRIPTION, &c.—This plant grows two or three feet high in favourable situations. The flowers are small, but they are of a most brilliant crimson, and the calyx, stem, and veins of the leaves are of a brilliant purple. It is a native of Mount Caucasus, whence it was introduced in 1817. It is quite hardy, and flowers in June; but it should be grown in a light soil, and an open situation.

OTHER SPECIES OF SAPONARIA.

S. ELEGANS, *Lap.*

With large rose-coloured flowers;

S. LUTEA, *Lin.*

With yellow flowers; and

S. BELLIDIFOLIA, *Smith.*

With crimson flowers and golden-yellow stamens, are all very handsome, but they are only half-hardy.

CHAPTER X.

LINACEÆ.

CHARACTER OF THE ORDER.—Sepals three to five. Petals three to five, hypogynous. Stamens three to five, combined at the base. Styles three to five. Capsule ten-celled; cells two-seeded. Seeds compressed.

GENUS I.

LINUM, *Bauh.* THE FLAX.*Lin. Syst.* PENTANDRIA PENTAGYNIA.GENERIC CHARACTER.—Sepals five, entire. Petals five. Stamens five. Styles five; rarely one, or three. (*G. Don.*)

DESCRIPTION, &c.—The different kinds of Flax are all handsome flowers; and like many other plants, they contradict De Candolle's hypothesis, that bright yellow and bright blue flowers are never found in the same genus. The word *Linum* is from the Celtic word for thread, in allusion to the use made of the fibres of the annual species, *L. usitatissimum*.

1.—LINUM FLAVUM, *Lin.* THE YELLOW FLAX.

SYNONYMES.—*L. campanulatum*, *β Dec.*; *L. monopetalum*, *Steph.*; *L. latifolium luteum*, *Bauh.*; *L. glandulosum*, *ε Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 312; *Swt. Brit. Flow. Gard.*, 2d ser. t. 303; and our *figs.* 5 and 6 in Plate 27.

SPECIFIC CHARACTER.—Plant woody at the base, greenish. Leaves

furnished with two glands at the base of each, alternate, narrow, lanceolate, acute, sessile, with smooth margins. Branches of panicle dichotomous. Corolla monopetalous, five-cleft. Sepals acuminate, serrulated; petals very blunt, three times longer than the calyx.

DESCRIPTION, &c.—This very pretty plant, which grows about a foot high, is found in great abundance near hedges and among woods on mountains in Germany and Switzerland. It is quite hardy in British gardens, and succeeds best in a stiff moist soil. The flowers begin to expand in June, and they continue opening in succession throughout July and August; and they are followed by seeds, by which the plant may be increased, or by division of the roots, or cuttings. It was introduced in 1793.

2.—LINUM MONOGYNUM, *Forst.* THE ONE-STYLED FLAX.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 370; and our *fig.* 2 in Plate 27.

SPECIFIC CHARACTER.—Perennial, erect, glabrous. Leaves lanceolate,

acutely three-nerved. Flowers corymbose; calycine leaves ovate-lanceolate, acute, keeled. Styles connate.

DESCRIPTION, &c.—This species has white flowers, which are produced in corymbose clusters, so as to form a showy head. The leaves are lanceolate and spreading; and they are quite of a glaucous or bluish green. The

flower-stalks are angular, and the five styles in the centre of the flower appear to be united into one. This species is a native of New Zealand, whence it was introduced about 1835; and it should be grown in a mixture of peat and loam. It is almost hardy, but it requires a little protection during winter. It is propagated by division of the roots, cuttings, or seeds.

3.—LINUM VISCOSUM, *Lin.* THE CLAMMY FLAX.

SYNONYMS.—*L. hypericifolium*, *Sal.*; *L. venustum*, *Andr.*; Yellow-flowered Flax.

ENGRAVINGS.—*Bot. Mag.*, t. 1048; *Bot. Rep.*, t. 477; and our *fig. 1* in Plate 27.

SPECIFIC CHARACTER.—Leaves lanceolate; three or five nerved, alternate, and somewhat opposite; partly covered with glandular hairs. Styles shorter than the stamens, or nearly equal to them.

DESCRIPTION, &c.—This is a very handsome species, of which there are several varieties, differing but little from each other; the most showy being that figured in Plate 27, under the name of *L. hypericifolium*. This variety is a native of Mount Caucasus, but the species is found wild in Germany and Italy. Both the species and the varieties are quite hardy, and only require planting in rich loamy soil. They are perennials, but do not live many years. They may be propagated either by seeds or cuttings.

4.—LINUM ASCYRIFOLIUM, *Sims.* THE ASCYRON-LEAVED, OR BLUE-AND-WHITE FLAX.

ENGRAVINGS.—*Bot. Mag.* t. 1087; and our *fig. 3*, in Plate 27.

SPECIFIC CHARACTER.—Leaves alternate, three-nerved, ovate, cor-

date, pubescent, upper ones somewhat opposite. Flowers somewhat spiked; sepals acuminate, hairy. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species has the flowers white, streaked with bluish veins. This flax, we are told in the Botanical Magazine, was first found by Clusius, who, "in his account of the plants of Spain and Portugal, describes a sort of Flax which he met with near a deserted church in Portugal, putting forth fresh shoots in the month of November, and luckily with some of the seed-vessels still remaining on the withered stalks. These he took with him to Holland, and raised a single plant, which continued to bear flowers at the latter end of the summer for some years, but produced no seed. He describes this plant as bearing from one root three or four slender downy stems a foot high, divided near the top into two or three branches, rolled back at their extremities, and covered with white flowers veined with purple, nearly as large as those of the Mallow. The leaves, he says, are rather wide, downy, three-nerved, and not unlike those of the Ascyron (*Hypericum quadrangulare*)." It is evident that *L. ascyrifolium* is the same as the plant described by Clusius; and it was introduced in 1800. It has, however, long been lost; and it is in the hope that it may be reintroduced, that it has been here described so much at length. It is quite hardy in British gardens, and only requires to be grown in a rich loamy soil, like the other species.

5.—LINUM SIBIRICUM, *Dec.* THE SIBERIAN FLAX.

SYNONYMS.—*L. perenne*, *var. Sibirica*, *Lin.*; *L. austriacum*, *Sims.*

ENGRAVINGS.—*Bot. Mag.* t. 1086; and our *fig. 4* in Plate 27.

SPECIFIC CHARACTER.—Plant glabrous, erect, tall. Leaves linear,

acute, spreading, without dots. Sepals oval, 5-nerved at the base, outer ones acutish, inner ones very blunt, all with membranaceous margins. Petals entire, three or four times larger than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This very handsome plant differs from the common perennial flax in having much larger flowers, which are of a deeper blue, and form a more compact panicle. It is found wild in Siberia, and also in Austria; and it is generally found in nurseries under the name of the Austrian flax. It is quite hardy, and will grow in any soil that is not too light. It is propagated by parting the roots.



1. *Linum catharticum*. 2. *Linum monogynum*. 3. *Linum ascyrifolium*. 4. *Linum sibiricum*.
 5 & 6. *Linum flavum*. 7. *Linum alatum*. 8. *Linum narbonense*.

6.—*LINUM ALPINUM*, Willd. THE ALPINE FLAX.

SYNONYME.—*L. perenne* γ *alpinum*, Schiede.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 17; and our *fig. 7* in Plate 27.

SPECIFIC CHARACTER.—Plant glabrous, decumbent, many-stemmed.

Leaves linear, awl-shaped, spreading, full of pellucid dots. Flowers few, rather corymbose. Fructiferous peduncles erect. Sepals oval, 3-nerved at the base, with membranaceous margins; outer ones acutish; inner ones obtuse; twice as large as the calyx. (*G. Don.*)

DESCRIPTION, &c.—This very pretty little plant has flowers resembling those of the common perennial flax, on numerous very slender stems. It is a dwarf plant, seldom growing above six or eight inches high; and it is admirably adapted for rockwork, as, unlike most of the other plants belonging to the genus, it likes a light sandy soil and a dry situation. It has also the great advantages, of not growing fast, and taking up very little room. It is a native of the South of France, the North of Italy and Germany, on high mountains. It was introduced in 1739.

OTHER SPECIES OF *LINUM*.

L. PERENNE, Smith; *Syn. L. ANGLICA*, Mill.

The perennial flax, with pale blue flowers. A native of England; found generally on chalky or sandy soils.

L. MEXICANUM, *H. B. et K.*; *Bot. Reg. t. 1326.*

A very pretty half-hardy species, with yellow flowers. A native of Mexico, introduced in 1828.

L. MARITIMUM, *Lin.*; *Syn. L. HETEROPHYLLUM*, Moench.

A sea-side plant, a native of the South of Europe. Introduced in 1596.

L. CAMPANULATUM, *Lin.*

A native of the South of Europe, with corymbose flowers; introduced in 1795.

L. CAPITATUM, *Kit.*

A native of the Croatian Alps. A dwarf plant, introduced in 1816.

L. HIRSUTUM, *Lin.*

Allied to *L. ascyrifolium*, but with rose-coloured flowers. Introduced from Italy in 1759.

L. NERVOSUM, *Waldst. et Kit.*

The flowers are large and blue. The species is a native of Hungary, whence it was introduced in 1822.

L. NARBONENSE, *Lin.*; and our *fig. 8* in Plate 27.

This is one of the most beautiful of all the species of *Linum*. It is a native of Spain, the South of France, and Italy. The flowers are large, very beautiful, and generally of a most intense blue. It merely requires to be grown in the common garden soil; but it should be placed in an open, airy, sunny situation.

L. LEWISII, *Pursh.*; *Syn. L. SIBIRICUM*, var. *LEWISII*; *Bot. Reg. t. 1163.*

The flowers are very large and pale blue. The plant is glaucous. A native of North America. Introduced in 1826. It is very nearly allied to *L. Sibiricum*.

L. GRANDIFLORUM, *Desf.*

The flowers large and rose-coloured; and the species is a native of the North of Africa, whence it was introduced in 1820.

CHAPTER XI.

MALVACEÆ.

CHARACTER OF THE ORDER.—Sepals generally five, rarely three or four. Petals five, twisted in æstivation. Stamens numerous, hypogynous, and combined with the claws of the petals into a column, which girds the style and ovary. Anthers one-celled. Carpels numerous, disposed in a whorl round the axis, capsular or baccate. (*G. Don.*)

GENUS I.

MALVA, *Lin.* THE MALLOW.*Lin. Syst.* MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx girded by a three-leaved involucre, rarely by a five or six-leaved one; leaflets oblong or setaceous. Car- | pels capsular, one-seeded, verticillate, disposed in an orbicular head. (*G. Don.*)

DESCRIPTION, &c.—Most of the perennial Mallows are tender or shrubby; but some of the herbaceous species, which were formerly thought half-hardy, are now found to succeed well in the open air. The shrubby kinds are still kept in the greenhouse. The words Mallow and Malva both signify mucilaginous. All the plants belonging to this genus, and indeed to the order, are easily recognised by their stamens growing together and surrounding the styles, so as to form a column in the centre of the flower.

1.—MALVA MUNROANA, *Dougl.* MR. MUNRO'S MALLOW.

ENGRAVINGS.—Bot. Reg. t. 1306; Bot. Mag. t. 3537; and our *fig.* | ascending. Leaves roundish, cordate, somewhat five-lobed, crenate. 2 in Plate 23. | Involucel setaceous. Peduncles axillary and terminal, panicles 3—5 flowered.

SPECIFIC CHARACTER.—Plant clothed with white tomentum. Stems |

DESCRIPTION, &c.—This very handsome species was discovered by Douglas, on the plains near the Columbia, in July 1826, and it was named by him in compliment to Mr. Munro, the superintendent of the Horticultural Society's Gardens at Chiswick. It should be grown in sandy or gravelly soil, when it will flower abundantly from May to October. In rich soil it produces more leaves than flowers, and the leaves themselves lose that fine silky down that ought to cover them. It may be propagated by seeds or cuttings; or its ascending shoots may be allowed to take root at the base, in which case it will soon form a large bush. It is quite hardy; and during the summer of 1842 I saw it in Mr. Hopgood's garden, covered with flowers every day, and forming one of the most ornamental plants in the open border.

2.—MALVA PURPURATA, *Lin.* THE PURPLE MALLOW.

ENGRAVINGS.—Bot. Reg. t. 1362; Bot. Mag. t. 3814. | SPECIFIC CHARACTER.—Pubescent, ascending. Lower leaves five-cleft; upper ones three-cleft. Flowers solitary, on long peduncles.

DESCRIPTION, &c.—This species is represented in the Botanical Register with pink flowers, and in the Botanical Magazine with purple flowers; in the latter work it appears very ornamental, but I have never seen it growing. It is a native of the Chilian Andes, where it was found by Mr. M'Rae, in November 1825. It is quite hardy in this country, "increasing," Dr. Lindley tells us, "very little by the root, but producing seeds in dry seasons. It flowers in June, and continues in beauty till the frosts of autumn nip it. It requires no particular attention; thrives in any common garden soil."



1. Malva rosea (a garden variety) 2. Malva Munimanni 3. Malva angustifolia

3.—MALVA ANGUSTIFOLIA, Cav. THE NARROW-LEAVED MALLOW.

ENGRAVING.—Bot. Mag. t. 2839.

SPECIFIC CHARACTER.—Stellately pubescent. Leaves very long, lanceolate, crenately dentate. Peduncles axillary, four or five spring-

ing from the same point. Fruit a globe, about the size of a pea, consisting of ten compressed capsules, each containing three kidney-shaped seeds.

DESCRIPTION, &c.—This species is remarkable for the length of its leaves, which is frequently as much as six inches, and consequently much greater than that of Mallow leaves in general. It is a native of Mexico, whence it was first introduced in 1798; but being soon after lost, it was re-introduced in 1826. It is quite hardy, and if planted in the open border, it will continue in flower all the summer and autumn. It will grow in any soil and situation.

4.—MALVA CAPENSIS, Lin. THE CAPE OF GOOD HOPE MALLOW.

ENGRAVINGS.—Bot. Reg. t. 295; and our fig. 3 in Plate 28, under the name of *M. angustifolia*.

SPECIFIC CHARACTER.—Pedicels 1-flowered; solitary or in pairs,

longer than the footstalks; leaflets of the outer calyx ovate-lanceolate; leaves 5-lobed and 3-lobed, crenate, toothed, clammy. (*G. Don.*)

DESCRIPTION, &c.—This species has been long common in greenhouses, but it is only lately that it has been tried in the open air, where it is found to succeed perfectly well during the summer, though it requires protection during winter. It is a native of the Cape of Good Hope, whence it was introduced so far back as 1713. It should be grown in light sandy soil, and if abundantly supplied with water, it will continue in flower all the summer.

5.—MALVA ALCEA, Lin. THE VERVAIN MALLOW.

ENGRAVING.—Bot. Mag. t. 2297.

SPECIFIC CHARACTER.—Lower leaves angular, upper ones 5-parted, cut. Stems and calyxes roughish velvety from stellate down. (*G. Don.*)

DESCRIPTION, &c.—This species is very distinct, from its deeply-cleft petals, which are placed so widely asunder as to have somewhat of a star-like appearance. The leaves are also deeply cleft, and the whole plant has the appearance of a kind of *Lavatera*. It grows about three feet high, and produces flowers nearly all the summer and autumn. It is a native of Germany and France, and it is quite hardy in the open border in British gardens. It was introduced in 1759.

OTHER SPECIES OF MALVA.

M. MORENI, *Pall.*; *Bot. Mag.* t. 2793; *Syn. M. ALCEOIDES*, *Ten.*; *M. ALCEA*, β *MORENI*, *Dec.*

A native of Italy, particularly near Naples. It is very nearly allied to *M. Alcea*, only differing in its flowers being produced in tufts, and the segments of the leaves being somewhat broader.

M. MOSCHATA, *Lin.*

The Musk-mallow. A British species, frequently grown as an annual. There is a very handsome variety with white flowers; and another, which I found in Somersetshire, had the flowers quite blue.

M. LATERITIA, *Hook.*

A very handsome species with brick-red flowers, which resemble those of *M. Munroana*, but which are more than twice as large. It is a native of Buenos Ayres, and was introduced in 1840.

GENUS II.

ALTHÆA, Cav. THE MARSH MALLOW.

Lin. Syst. MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx five-cleft, girded by a six or nine-cleft involucre. Carpels capsular, 1-seeded, disposed into an orbicular head.
(*G. Don.*)

DESCRIPTION, &c.—The mucilage in these plants is still more abundant than in the mallow; and it is used with success in several pulmonary complaints. Hence, the word *Althæa*, which is derived from *altheo*, to cure. There are many species, but those best known in Britain are the Marshmallow and the Hollyhock.

1.—ALTHÆA OFFICINALIS, *Lin.* THE MARSH MALLOW.

<p>ENGRAVING.—<i>Eng. Bot.</i> t. 147; 2d ed. t. 981. SPECIFIC CHARACTER.—Leaves clothed with soft white tomentum on both surfaces, cordate or ovate, toothed, undivided or somewhat</p>	<p>5-lobed. Peduncles axillary, many-flowered, much shorter than the leaves. (<i>G. Don.</i>)</p>
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DESCRIPTION, &c.—This plant is a native of the salt marshes on the sea-coast in Britain, and many other parts of Europe. The roots are long and thick, and they abound in mucilage, which is used in medicine. In France a lozenge is made of it, called *Pâte de Guimanve*. The flowers are very pretty, and they are produced from July to September, but the plant is seldom grown in gardens.

2.—ALTHÆA ROSEA, Cav. THE HOLLYHOCK.

<p>SYNONYME.—<i>Alcea rosea</i>, <i>Lin.</i> ENGRAVINGS.—<i>Bot. Mag.</i> t. 3198; and our <i>fig. 1</i> in Plate 28. SPECIFIC CHARACTER.—Stem straight, hairy. Leaves cordate, with</p>	<p>five or seven angles, crenated, rough; flowers axillary, sessile, somewhat spiked at top; petals a little crenated, with villous claws. (<i>G. Don.</i>)</p>
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DESCRIPTION, &c.—The common Hollyhock is, as is well known, a very showy flower, which varies very much from seed, so as to produce a fine and varied effect in a garden. Hollyhocks look particularly well near an old baronial mansion, with architectural terraces; or in the borders on each side of a broad gravel walk. In good soil hollyhocks will grow from ten to fifteen feet high, producing a great quantity of large showy flowers. The species is a native of China, whence it was introduced in 1753, and it is quite hardy in British gardens. It is a biennial, and the usual mode of treating it is to sow the seeds in April, and the following September to prepare pits in the borders about four feet apart and two feet deep, putting two or three shovel-fulls of strong stable manure in each pit. The plants should then be carefully taken up and placed in the pits, which should be filled up with vegetable mould or some other light rich soil so as not either to injure or bend the tap root, or to rub off the slender fibrous roots springing from the tap root, which are necessary to supply nourishment to the plant. Thus treated, on a gravelly subsoil, hollyhocks have been grown from seventeen to twenty feet high. In clayey soils the pit may be dug six inches deeper, and the additional depth filled in with brickbats and lime rubbish. It may be then filled in with vegetable mould, and the plants planted, laying some manure on the surface, and watering them occasionally in dry weather. With this treatment the plants will attain a large size, and the flowers a brilliant colour. The original plants of hollyhock had red flowers, and hence the species received the name of *Althæa rosea*; but now hollyhocks are grown with white, scarlet, purple, buff, or yellow flowers, with a variety

of intermediate shades, so as to form an ornamental garden in themselves. The seeds should be chosen from semi-double flowers; those produced by large flowers being preferred. Some persons sow the seed as soon as ripe, but when this is the case the young plants should be transplanted in April or May, when they will generally flower in the next August or September, and sometimes again the following year.

GENUS III.

KITAIBELIA, *Willd.* THE KITAIBELIA.

Lin. Syst. MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx five-cleft, girded by a seven or nine-cleft involucre. Carpels capsular, 1-seeded, collected into a five-lobed head. (*G. Don.*)

DESCRIPTION, &c.—There is only one species known of this genus, which was named in honour of Professor Kitaihel, of Pesth, in Hungary, whose name is so often given in conjunction with that of Count Waldstein, as an authority for the plants of Hungary.

I.—KITAIBELIA VITIFOLIA, *Willd.* THE VINE-LEAVED KITAIBELIA.

ENGRAVING.—*Bot. Mag.* t. 821.

SPECIFIC CHARACTER.—Leaves 5-lobed, acute, toothed. Flowers axillary. (*G. Don.*)

DESCRIPTION, &c.—This is a strong, robust-growing plant, rising to the height of seven or eight feet in strong moist soil; with very large dark green leaves, shaped like those of the vine, and rather small white flowers, with yellow stigmas and stamens. The plant is quite hardy, and will grow in any soil or situation which is sufficiently moist. It is a very showy plant for a shrubbery, or any place where there is plenty of room; but it is much too large for a small garden. It is a native of Hungary, where it was found by Professor Kitaihel, after whom it is named, and who was one of the authors of the large work called *Plantæ rariores Hungariæ*. Plants first described in this work have generally the words Wald. et Kit. affixed to them, that being the contraction of Waldstein and Kitaihel. *Kitaibelia vitifolia* was introduced in 1801. It requires no particular care in its culture, and it is increased by dividing the root.

GENUS IV.

LAVATERA, *Tourne.* THE LAVATERA.

Lin. Syst. MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx 5-cleft, girded by a three or five cleft involucre; leaflets joined, especially to the middle. Carpels capsular, 1-seeded, disposed into an orb around the axis, which is variously dilated above the fruit. (*G. Don.*)

DESCRIPTION, &c.—The genus *Lavatera* was so named by Tournefort, in honour of the two Lavaters, the celebrated physiognomists, who were physicians at Zurich. Most of the species are half hardy shrubs, or hardy annuals.

1.—LAVATERA THURINGIACA, *Lin.* THE THURINGIAN LAVATERA.

ENGRAVINGS.—*Bot. Mag.* t. 517; and our fig. 3 in Plate 29. | lobe longest. Pedicels solitary, 1-flowered, longer than the petioles.
 SPECIFIC CHARACTER.—Stem herbaceous, downy. Leaves rather | Petals 2-lobed. (*G. Don.*)
 downy, lower ones angular, upper ones 3—5-lobed, with the middle

DESCRIPTION, &c.—This plant is remarkable for a curious puckering of the petals at their margin in the centre, and for the large size of its flowers. It is quite hardy, as it is a native of Thuringia, in the north of Europe, from which place it was introduced in 1731, above a hundred years ago. It grows above five feet high, and keeps opening a succession of flowers from July to September. It will grow in any common garden soil, and it may be propagated either by dividing the root, or by seeds which it ripens in great abundance.

2.—LAVATERA TRILOBA, *Lin.* THE THREE-LOBED LAVATERA.

ENGRAVINGS.—*Bot. Mag.* t. 2226; and our fig. 2 in Plate 29.
 SPECIFIC CHARACTER.—Stem suffruticose, downy. Leaves cordate, three-lobed, downy, somewhat crenate.

DESCRIPTION, &c.—This species, which is somewhat shrubby at the base of the stem, grows about three feet high, and flowers abundantly, though the flowers are much smaller than those of the preceding species. It may be planted in any common garden soil, but it requires a little protection during winter. It is a native of Spain, whence it was introduced before 1759. The flowers, which appear in June, July, and August, have a strong smell of musk.

OTHER SPECIES OF LAVATERA.

L. PLEBEIA, *Sims Bot. Mag.* t. 2269.

A mean-looking little plant, with small weak flowers; a native of New Holland, introduced in 1820.

L. BIENNIS, *Bieb.*

This species is nearly allied to *L. Thuringiaca*, but it is only a biennial. It is a native of Eastern Caucasus, and was introduced in 1819. It is quite hardy.

L. ARBOREA, *Lin.*

This is a British species, and though called the Tree Mallow, it is in fact only a biennial, and quite herbaceous. It is very handsome, and well deserving of cultivation in gardens, though it is very seldom seen in them.

L. NEAPOLITANA, *Ten.*

A native of Naples, by the sea-side, with purple flowers. Introduced in 1818.

GENUS V.

HIBISCUS, *Lin.* THE HIBISCUS.*Lin. Syst.* MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx encompassed by a many-leaved, rarely | valved, capsule, with a dissepiment in the middle of each valve on the
 by a few-leaved, involucre, sometimes connected at the base. Petals | inside. Cells many-seeded, rarely one-seeded. (*G. Don.*)
 not auricled. Stigmas five. Carpels joined into a five-celled, five-

DESCRIPTION, &c. The flowers of the different species of this genus are all splendid; and the bark of all the shrubby kinds, and the outer covering of the perennials, is so tough, as to be made into ropes or spun into thread.



1. *Hibiscus Moscheutos* - 2. *Lavatera triloba* - 3. *Lavatera Thuringiaca* - 4. *Nuttallia digitata*.
Nuttallia Papaver - 6. *Sida Malvaeflora* - 7. *Cristaria coccinea*



All the species are mucilaginous, and the name of *Hibiscus* is said to be derived from Ibis, a stork, that bird being very fond of chewing the bark of the shrubby kinds. Most of the species of *Hibiscus* are stove plants; but one kind, *H. syriacus*, commonly called *Althæa frutex*, is a hardy shrub, and some of the species are hardy, perennial, marsh plants.

1.—*HIBISCUS MOSCHEUTOS*, *Lin.* THE MALLOW ROSE, OR MUSK HIBISCUS.

SYNONYME.—*H. palustris*, *Sims.*

ENGRAVINGS.—*Bot. Mag.* t. 882; *Swt. Brit. Flow. Gard.* t. 286; and our *fig. I* in Plate 29.

SPECIFIC CHARACTER.—Leaves ovate, acuminate, serrated; downy beneath. Petioles and peduncles joined together. Involucres and pedicels downy. Capsules smooth. (*G. Don.*)

DESCRIPTION, &c.—This is a very splendid marsh plant, producing several stems, each growing three or four feet high. It is quite hardy, but it will not flower unless planted in marshy ground, or near a pond, where the roots can have access to moisture. There is a variety sometimes called *H. palustris*, or the Marsh Hibiscus, with rose-coloured flowers. Both are natives of North America, from Canada to Carolina, and they were introduced before 1759.

2.—*HIBISCUS ROSEUS*, *Thor.* THE ROSE-COLOURED HIBISCUS.

ENGRAVING.—*Swt. Brit. Flow. Gard.* t. 277.

SPECIFIC CHARACTER.—Leaves cordate, toothed, somewhat three-

lobed, hoary from down beneath; pedicels axillary, free from the petioles, one-flowered, and jointed above the middle. (*G. Don.*)

DESCRIPTION, &c.—This species is very handsome, and it differs very little from the rose-coloured variety of *H. Moscheutos*. It is, however, a native of France, Italy, and Barbary, and was first introduced into England in 1644, though long lost, till re-introduced in 1827. Like the preceding species, though quite hardy, it will only flower in a very moist situation.

OTHER SPECIES OF HIBISCUS.

H. SPECIOSUS, *Ait.*; *Syn. H. COCCINEUS*, *Walt.*; *Bot. Mag.* t. 360.

A very showy species, with scarlet flowers; a native of the banks of rivers in South Carolina and Florida. Rather tender in winter. Introduced in 1814.

H. GRANDIFLORUS, *Michx.*

The flowers are large and flesh-coloured, with a dark centre; and the fruit is yellow. A native of the banks of the Mississippi; introduced in 1778.

GENUS VI.

CRISTARIA, *Cav.* THE CRISTARIA.

Lin. Syst. MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx naked, 5-cleft. Fruit orbicular, depressed, covered with a skin, consisting of several one-seeded carpels, which have two wings in the centre of each. (*G. Don.*)

DESCRIPTION, &c.—This genus takes its name from the crested carpels, *Cristaria* signifying crested. Only one species has been yet introduced, though several have been discovered in Peru.

1.—CRISTARIA COCCINEA, *Pursh.* THE SCARLET CRISTARIA.

SYNONYMES.—*Sida coccinea*, *Dec.* ; *Malva coccinea*, *Fras.*
 ENGRAVINGS.—*Bot. Mag.* t. 1673 ; and our *fig. 7* in Plate 29.

SPECIFIC CHARACTER.—Plant bent, with heavy tomentum and starry leaves. Leaves 3—5-cleft, with cut acute segments. Racemes terminal. Stem diffuse, prostrate. (*G. Don.*)

DESCRIPTION, &c.—A very singular little plant, quite hardy in British gardens ; a native of the dry prairies of the Missouri district of North America. It was introduced in 1811, but is very rarely met with.

GENUS VII.

SIDA, *Cav.* THE SIDA.

Lin. Syst. MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx naked, 5-cleft, usually angular. Styles multifid at the top. Carpels capsular, 5—40—1-seeded, seldom bladdery, disposed in a whorl round the axis, more or less connected

with each other, or wholly connected into a many-celled capsule. (*G. Don.*)

DESCRIPTION, &c.—The species of this genus are very numerous, and differ so widely from each other in the structure of the fruit and seeds, that the genus will probably ere long be divided into several genera, and indeed some of the species have already been removed to *Abutilon*.

The derivation of the name of *Sida* is not known. Most of the species are stove plants, either shrubs or annuals, but a few are greenhouse perennials, and two or three species are hardy perennials ; but the greenhouse kinds, which are said to have yellow flowers, have not yet been introduced into Britain.

1.—SIDA MALVÆFLORA, *Dec.* THE MALLOW-FLOWERED SIDA.

ENGRAVINGS.—*Bot. Reg.* t. 1036 ; and our *fig. 6* in Plate 29.

SPECIFIC CHARACTER.—Radical leaves roundish, 9-lobed, truncate at the base ; lobes 3-toothed at the apex. Stem-leaves 5-parted ; seg-

ments linear, subdentate. Flowers disposed in terminal racemes. Carpels mutic. (*G. Don.*)

DESCRIPTION, &c.—This is a showy-looking plant, with an upright flower-stem and very handsome leaves, which differ exceedingly in different parts of the plant. The root-leaves are roundish, and slightly cut into broad lobes ; but the stem-leaves are cut to the base, and into such narrow segments as to make the segments look like separate linear leaves. The species was found in California, near one of the branches of the Columbia, by Douglas, and sent home by him in 1826. It is quite hardy, and flowers in October and November.

OTHER HARDY SPECIES OF SIDA.

S. NAPÆA, *Cav.* ; *Syn. NAPÆA LÆVIS*, *Lin., Bot. Mag.* t. 2193.

A native of North America, always found in rocky places. Introduced in 1748. The flowers are small and white.

S. DIOICA, *Cav.* ; *Syn. NAPÆA SCABRA*, *Lin.*

The flowers are small and white, and the species is a native of Virginia, whence it was introduced in 1759.

S. PINNATA, *Cav.*

A Peruvian plant, with large yellow flowers and pinnate leaves. Not yet introduced.

S. ACAULIS, *Cav.*

A native of Peru, with large yellow flowers, which are produced without any stem, and a very thick root. Not introduced.

S. PICHINCHENSIS, *Cav.*

A native of Quito, on the summit of the volcano Mount Pichincha, 7050 feet above the level of the sea. The leaves are quite white, from the silky down with which they are covered, and the large yellow flowers repose on them as on a bed. The plant is not above two inches high. Not introduced.

GENUS VIII.

NUTTALLIA, *Brown.* THE NUTTALLIA.*Lin. Syst.* MONADELPHIA POLYANDRIA.

GENERIC CHARACTER.—Calyx 5-cleft, persistent. Style 12-cleft, fringed. Carpels orbiculate, 12—1-seeded.

DESCRIPTION, &c.—Showy flowers, somewhat resembling the poppy, natives of North America, where the first species was found by Nuttall, and hence the genus has received the name of Nuttallia.

1.—NUTTALLIA DIGITATA, *Bart.* FINGER-LEAVED NUTTALLIA.

SYNONYMES.—*Callirhoe digitata*, *Nutt.*; *Sida digitata*, *Spreng.*
ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, t. 129; and our *fig. 4* in Plate 29.

SPECIFIC CHARACTER.—Glaucous. Leaves subpeltate, 6—7-parted, with linear, entire, or 2-parted segments, upper ones more simple. Peduncles long, axillary, 1-flowered. (*G. Don.*)

DESCRIPTION, &c.—This very handsome plant was first flowered in England at Mr. Barclay's at Bury Hill, in the open border. It is generally brought forward in pots in a hotbed, as it is only propagated by seeds; but when fully grown, it is quite hardy, and will thrive in the open border if planted in peat soil.

2.—NUTTALLIA PAPAVER, *Grah.* THE POPPY-LIKE NUTTALLIA.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser., t. 279; *Paxt. Mag. of Bot.* vol. vi. p. 173; *Bot. Mag.* t. 3287; and our *fig. 5* in Plate 29.

SPECIFIC CHARACTER.—Root biennial. Stem erect. Radical leaves five lobes, with broad segments; segments of the cauline leaves linear. Peduncles long, 1-flowered.

DESCRIPTION, &c.—This species is a biennial with a fusiform root. It should be grown in peat and loam, and is quite hardy in the open border. It is a native of Louisiana, whence it was introduced by Mr. Drummond in 1833. It is increased by seeds, which it ripens but sparingly. It is a very showy plant, and well deserving of cultivation.

OTHER SPECIES OF NUTTALLIA.

N. PEDATA, *Hook.*

A hardy perennial with dark purple flowers; a native of North America, introduced in 1824.

N. GRANDIFLORA, *Paxt. Mag. of Bot.* vol. v. p. 217.

A native of North America, introduced in 1837, with handsome dark crimson flowers. This species, if planted in the open border and protected, or in the free ground of a conservatory, will attain the height of five or six feet.

N. CORDATA, *Lindl., Bot. Reg. t. 1938.*

A native of North America, introduced in 1835. This is a very pretty plant, with pale pinkish flowers.

N. MALVÆFLORA, *Paxt. Mag. of Bot., vol. vii., p. 31.*

The flowers are small, and the plant rather tender. It is a native of Texas; introduced in 1839.

CHAPTER XII.

GERANIACEÆ.

CHARACTER OF THE ORDER.—Calyx permanent, of five sepals, more or less unequal. Petals five, rarely four or six, unguiculate. Stamens monadelphous at the base, rarely free, equal or double the number of the petals, rarely treble. Carpels five, 1-celled, 1-seeded, separating with elasticity. Herbs or soft-stemmed shrubs, with the young stems articulated. Lower leaves opposite, upper ones alternate.

GENUS I.

GERANIUM, *L'Her.* THE CRANE'S-BILL.

Lin. Syst. MONADELPHIA DECANDRIA.

GENERIC CHARACTER.—Sepals five, equal. Stamens ten, monadelphous at the base, rarely all fertile, but usually with the alternate ones fertile, with a gland at the base of each of the fertile ones. (*G. Don.*)

DESCRIPTION, &c.—The greenhouse plants usually called geraniums are now removed to the genus *Pelargonium*, from a very trifling difference in the calyx. The other differences are scarcely worth naming, except that in the geraniums the petals, which are large and roundish, are all equal; and in *Pelargonium* they are unequal, the upper two being larger than the rest. The species of true geranium are mostly hardy or greenhouse perennials. Some of the handsomest are British species, which are well worth cultivating in gardens, and are in fact often seen there.

1.—GERANIUM IBERICUM, *Cav.* THE CAUCASIAN GERANIUM, OR CRANE'S-BILL.

SYNONYME.—*G. grandiflorum, Guld.*

ENGRAVINGS.—*Bot. Mag. t. 1386; Swt. Ger. t. 84; and our fig. 4 in Plate 30.*

SPECIFIC CHARACTER.—Stem villous, dichotomous, erect. Leaves 5—7-parted, with pinnately cut lobes and toothed lobules, villous; calyxes very villous. Petals obcordate, or somewhat trifold. (*G. Don.*)

DESCRIPTION, &c.—A very handsome plant with large purple flowers and deeply cut leaves. It is a native of Mount Caucasus, whence it was introduced in 1802. It flowers in June, and grows about a foot high. It only requires planting in the open border; and it is propagated by dividing the roots.

2.—GERANIUM ARGENTEUM, *Lin.* THE SILVER-LEAVED CRANE'S-BILL.

ENGRAVINGS.—*Bot. Mag. t. 504; Swt. Ger. t. 59; and our fig. 3 in Plate 30.*

SPECIFIC CHARACTER.—Stem very short. Leaves all almost radical,

on oblong petioles, hairy or silky on both surfaces, 5—7-parted, with trifold lobes and linear lobules. Peduncles almost radical. Petals emarginate. (*G. Don.*)

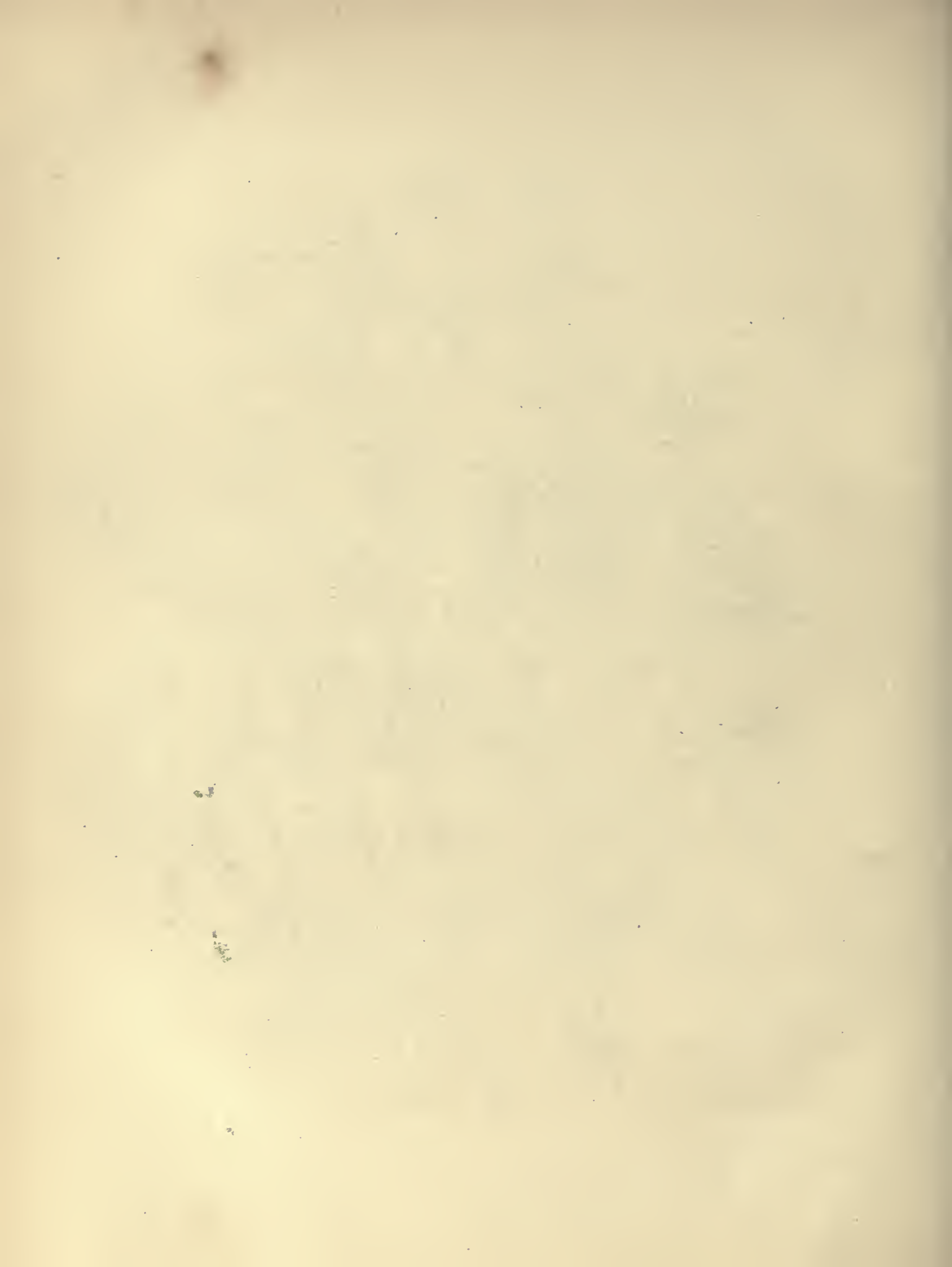
DESCRIPTION, &c.—This very pretty little plant, which is remarkable for its silvery leaves and large striped flowers, is a native of Germany, where it forms a close covering to some of the mountains. It is a dwarf plant, flowering in June and July; and in England is only suitable for rockwork, or for growing in a pot among other Alpine plants. It requires a pure air, a light and dry soil, and an open situation; but in other respects it is quite hardy. The best soil is very sandy peat. It is propagated by seeds, of which it ripens a few, or dividing the roots.







1 *Geranium angulatum* 2 *Geranium Wallichianum* 3 *Geranium argenteum* 4 *Geranium Ibericum*
 5 *Geranium albyflorum* 6 *Geranium phaeum* 7 *Erodium incarnatum* 8 *Erodium Hymenodes*



3.—GERANIUM WALLICHIANUM, *D. Don.* DR. WALLICH'S CRANE'S BILL.

ENGRAVINGS.—*Bot. Mag.* t. 2377 ; *Swt. Ger.* t. 90 ; and our *fig.* 2 in Plate 30.

SPECIFIC CHARACTER.—Stem decumbent, purple. Leaves 5-parted,

with broadly cuneated, ovate, deeply-toothed lobes, clothed on both surfaces as well as the stem with silky velli. Stipules ovate, obtuse. Petals emarginate ; stigmas very long. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Nepal, whence it was introduced in 1820. The stem is procumbent, and the leaves are covered with silky hairs. The flowers, which are very large and purple, are produced from June to September. The species is quite hardy, and it will grow in any common garden soil and situation. It is propagated either by seeds or division.

4.—GERANIUM ANGULATUM, *Sims.* THE ANGULAR-STALKED CRANE'S BILL.

ENGRAVINGS.—*Bot. Mag.* t. 203 ; and our *fig.* 1 in Plate 30.

SPECIFIC CHARACTER.—Radical leaves nearly seven cut, incised, hirsute. Stem erect, somewhat angled. Petals veined.

DESCRIPTION, &c.—This species usually flowers in May, but frequently again in autumn. It is quite hardy in any common garden soil, and it is propagated by seeds or dividing the roots. It is an erect plant, and looks well as a border flower. It is not known of what country it is a native, or when it was introduced ; but it was first observed in British gardens about 1789.

5.—GERANIUM ALBIFLORUM, *Graham.* WHITE-FLOWERED CRANE'S BILL.

SYNONYMES.—*G. erianthum*, *Dec.* ; *G. Richardsonii*, *Fisch. et Mey.*

ENGRAVINGS.—*Bot. Mag.* t. 3124 ; and our *fig.* 5 in Plate 30.

SPECIFIC CHARACTER.—Stem erect, round, dichotomous. Leaves

deeply five-cut ; segments ovate acuminate. Flowers on long peduncles ; peduncles many-flowered. Petals entire ; filaments hairy at the base.

DESCRIPTION, &c.—This species is remarkable for its white flowers and glaucous leaves. It grows about two feet high. The leaves are so deeply cut as to be almost pinnatifid, and the flowers are small. It is a native of the Rocky Mountains of North America, and was introduced by Mr. Drummond in 1827. It is quite hardy, and flowers abundantly all the summer. It may be grown in any light garden soil (which is not so rich as to make it produce more leaves than flowers), and it is increased readily by dividing the roots.

6.—GERANIUM PHÆUM, *Smith.* THE DUSKY CRANE'S BILL.

ENGRAVINGS.—*Eng. Bot.* t. 322 ; and our *fig.* 6 in Plate 30.

SPECIFIC CHARACTER.—Stem erect. Peduncles two-flowered, pani-

clad, or opposite the leaves. Calyx slightly awned. Petals waved. Capsules keeled, hairy below, wrinkled above. (*Smith.*)

DESCRIPTION, &c.—This species, though a native of England, is frequently grown in gardens from its great beauty, its flowers being of a peculiarly rich maroon colour, and of a fine and glossy texture. When wild, it grows in rocky woods and thickets to the height of about two feet ; but in gardens it becomes dwarf and bushy. It flowers in May and June.

OTHER SPECIES OF GERANIUM.

G. SIBIRICUM, *Lin.*

A native of Siberia, with white flowers ; introduced in 1758.

G. SANGUINEUM, *Lin., Eng. Bot.* t. 272 ; 2d ed. t. 977.

A British species, with crimson flowers ; of easy culture in any common garden soil.

G. LANCASTRIENSE, *Wall.*; *Syn.* G. PROSTRATUM, *Cav.*

A trailing species, with very large and beautiful flesh-coloured flowers, with purple veins. Found in various parts of Europe, and on the sandy beach of the Isle of Walney, in Lancashire.

G. CANESCENS, *L'Her.*

A silky-leaved plant, with pink flowers and long trailing stems; a native of the Cape of Good Hope. Introduced in 1787.

G. CINEREUM, *Cav.*; *Syn.* G. VARIUM, *L'Her.*

A native of the Pyrenees, with violet-coloured flowers and grey leaves, only six inches high.

G. MACRORHIZON, *Lin., Bot. Mag. t. 2420.*

A very handsome species, growing about two feet high, with an erect stem; and the flowers, which are of a deep red or bright purple, in umbels. A native of the south of Europe, introduced in 1576, and quite hardy in British gardens, where it is very common. The name signifies long-rooted.

G. LAMBERTI, *Swt.*

A Nepal species, with lilac flowers; introduced in 1825.

G. ERIOSTEMON, *Swt.*

There are two varieties of this species, one deep blue, and the other quite pale. It is a native of Dabusia, and was introduced in 1822.

G. PRATENSE, *Lin.*

A British species, of which there are numerous varieties; all with showy flowers.

There are many other species, all of which are more or less deserving of cultivation, and nearly all quite hardy.

GENUS II.

ERODIUM, *L'Her.* THE HERON'S BILL.*Lin. Syst.* MONADELPHIA PENTANDRIA.

GENERIC CHARACTER.—Sepals five, equal. Petals five, regular or irregular. Stamens ten, monadelphous at the base, five alternate ones sterile, with a gland at the base of each of the sterile ones. (*G. Don.*)

DESCRIPTION, &c.—This genus differs very little from Geranium, and principally in the seed-vessels, the awns of which are bearded inside, and twist up spirally, adhering by their points to the top of the style; whereas in the seed-vessels of the Geraniums the awns are smooth inside, and they twist or rather coil up in a revolute manner. The word *Erodium* signifies literally Heron's Bill, and it alludes to the shape of the capsule. The species are mostly hardy perennials and annuals, and many of them are British weeds.

1.—ERODIUM ROMANUM, *L'Her.* THE ROMAN HERON'S BILL.

SYNONYME.—*Geranium romanum*, *Lin.*

ENGRAVING.—*Bot. Mag. t. 377.*

SPECIFIC CHARACTER.—Stemless. Leaves pinnate; leaflets ovate, almost pinnatifid. Peduncles many-flowered; petals longer than the sepals.

DESCRIPTION, &c.—A lively little plant, with bright pink flowers, which it produces in great abundance, from April nearly all the summer. It is a native of Italy, and it is said by Linnæus to grow spontaneously in the streets of Rome. It was introduced before 1724, and is admirably adapted for rockwork, growing with great vigour in any dry situation. It is propagated by seeds, which it ripens freely; and its cork-screw-like awns, as they appear when twisted up to discharge the ripe seed, are almost as ornamental as its flowers.

2.—*ERODIUM SEROTINUM*, *Stev.* THE LATE-FLOWERING HERON'S BILL.SYNONYMS.—*E. ruthenicum*, *Bieb.*; *E. multicaule*, *Link.*ENGRAVING.—*Swt. Brit. Flow. Gard.* 2d ser. t. 312.

SPECIFIC CHARACTER.—Tomentose. Stem diffusc. Leaves pinna-

tiffid, incisedly serrated. Segments lanceolate. Peduncles many-flowered; petals elliptic, equal in length to the sepals.

DESCRIPTION, &c.—A very showy species, growing to a considerable height, with numerous branched stems, and large umbels of dark purple flowers. The leaves are large and handsome. The species is not suitable for a small garden, but in a large one it forms a very showy plant of very easy culture, as it is quite hardy, and will grow in any soil or situation. It is a native of Siberia, and was introduced in 1821.

3.—*ERODIUM HYMENODES*, *Willd.* THE TERNATE-LEAVED HERON'S BILL.SYNONYMS.—*E. trilobatum*, *Jacq.*; *Geranium hymenodes*, *And.*; *G. trifolium*, *Cav.*; *G. geifolium*, *Desf.*ENGRAVINGS.—*Bot. Mag.* t. 1174; and our *fig. 8* in our Plate 30.

SPECIFIC CHARACTER.—Stem erect, branched, shrubby at the base;

branches clothed with long soft hairs. Peduncles many-flowered. Leaves somewhat three-lobed or three-parted, very blunt, deeply toothed. Stipules and bractees scarious, ovate. Calyxes awulea. (*G. Don.*)

DESCRIPTION, &c.—This species is valuable for producing a succession of blossoms the whole summer. It is a native of Mount Atlas, and was introduced in 1789. It will bear our winter, generally, in the open air, but it requires a little protection in case of severe frost. It is easily propagated by seeds or cuttings.

4.—*ERODIUM INCARNATUM*, *L'Her.* THE FLESH-COLOURED HERON'S BILL.SYNONYME.—*Geranium incarnatum*, *Cav.*ENGRAVINGS.—*Bot. Mag.* t. 261; and our *fig. 7* in Plate 30.

SPECIFIC CHARACTER.—Stem shrubby at the base. Leaves rough,

lower ones cordate, toothed, three-parted, ternate or five-lobed, with wedge-shaped three-toothed lobes. Peduncles many-flowered.

DESCRIPTION, &c.—This species is a native of the Cape of Good Hope, introduced in 1787. Its flowers are very brilliant, but they are only produced in May and June. It requires the same treatment with regard to protection as the preceding species, but it is more impatient of wet.

OTHER SPECIES OF *ERODIUM*.*E. GUSSONI* *Ten., Bot. Mag.* t. 2445.

A native of Sicily, with rose-coloured or dingy purple flowers. Introduced in 1821.

E. PETRÆUM, *Willd.*

A native of the South of France on dry rocks. Introduced in 1640. The flowers are purple, and the plant not above three inches high.

E. GLANDULOSUM, *Willd.*

Another dwarf species from the Pyrenees, with pale violet flowers, streaked with purple. Introduced in 1798.

E. CHRYSANTHUM, *Lin.*

A very distinct species with yellow flowers. It is a native of Greece, on Mount Parnassus, and has not yet been introduced.

There are some other species, but the above are the most ornamental.

CHAPTER XIII.

TROPÆOLACEÆ.

CHARACTER OF THE ORDER.—Sepals five, the upper one with a long distinct spur. Petals five, unequal, irregular; the upper two sessile and remote, arising from the throat of the calyx, the lower three stalked and smaller, sometimes abortive. Stamens eight, perigynous, distinct. Anthers erect, two-celled. Ovary one, three-angled,

made up of three carpels. Style one. Stigmas three, acute. Ovules solitary, pendulous. Fruit indehiscent, separable into three pieces from a common axis. Seeds large, without albumen, filling the cavity in which they lie.

DESCRIPTION, &c.—This order is a very small one, containing only the genus *Tropæolum* and an annual plant called *Magallena porrifolium*, not yet introduced. The name of the order is taken from that of the principal genus. All the plants are natives of South America, and they have all tender, rather succulent stems, and peltate leaves, which are sometimes entire and sometimes lobed, or five or seven-parted. The flowers are generally single, and always so in the tuberous-rooted species.

GENUS I.

TROPÆOLUM, *Lin.* THE NASTURTIUM, OR INDIAN CRESS.

Lin. Syst. OCTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted, upper lobe furnished with a spur. Petals five, the lower three much smaller than the others, and sometimes wanting. Stamens eight, free from the base.

DESCRIPTION, &c.—This genus was formerly thought to contain only the common annual species and their double varieties, two hybrids from *T. magus*, and three or four tuberous-rooted species which were kept in the stove or greenhouse. The discoveries of the last three or four years have, however, greatly enriched this genus, which now boasts some of our most beautiful flowers. It is said that the annual kinds may be almost considered as perennials, as they may, with care, be preserved during winter in a greenhouse, but all the true perennials have tuberous roots. The name of *Tropæolum* is taken from the Latin word *tropæum*, a trophy; the round peltate leaf of the common species being supposed to represent a buckler, and the flower a helmet.

1.—TROPÆOLUM TUBEROSUM, *Ruiz et Pavon.* THE TUBEROUS INDIAN CRESS.

ENGRAVINGS.—*Bot. Mag.* t. 3714; *Paxt. Mag. of Bot.* vol. v. p. 49; and our *fig.* 2 in Plate 31.

SPECIFIC CHARACTER.—Leaves peltate-nerved, five-lobed, transversely truncate at the base, smooth. Petals almost the length of the calyx. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this species are decidedly two-coloured, red and yellow; and very handsome. The leaves are decidedly five-lobed, and truncate at the base. The tubers are eatable, and bear considerable resemblance to those of the Jerusalem artichoke. The stalks and leaves may be also eaten, and are slightly acrid like cress. The flowers are very handsome, but they are seldom produced in the open air; as, unless forced, they do not appear till the latter end of October or November, before which time the stems are generally killed, as they are so succulent as to be destroyed by a very slight frost. When it is wished to have the plant flower, the tubers should be planted in pots, and brought forward in a hotbed or stove till May, and then planted out into a warm border with a southern exposure, and the plant trained against a wall. When the plant is grown only for culinary purposes, the tubers should be planted at once in the open ground, where they will grow most luxuriantly, producing an immense mass of leaves and stems in a very short time; but from their

coarse habit of growth when thus treated, they are far from ornamental. The plant when grown in pots, on the contrary, is of a delicate habit of growth, and its stems, which become long and slender instead of being thick and bushy, require support. When it can be thrown into flower, it is highly ornamental. When kept in a greenhouse, these plants rarely flower at all, as they require abundance of light and free air. The species is said to have been introduced in 1827; but if so, it was soon lost, and was not re-introduced till 1835. It is a native of Peru, where it was found growing among broken rocks.

2.—TROPÆOLUM BRACHYCERAS, Hook. THE SHORT-HORNED INDIAN CRESS.

SYNONYME.—*T. tenellum*, *G. Don.*

ENGRAVINGS.—*Bot. Mag.* t. 3851; *Bot. Reg.* t. 1926; *Paxt. Mag.* of *Bot.* vol. iv. p. 55; *Sweet's Brit. Flow. Gard.* 2d ser. t. 370; and our *fig.* 3 in Plate 31.

SPECIFIC CHARACTER.—Leaves peltate, deeply cut; segments six or seven, oblong-obovate, entire, sessile. Petals cuneiform; segments of the calyx obtuse; spur very short.

DESCRIPTION, &c.—This is a very elegant plant with yellow flowers, and a very slender stem, which requires support. It is a native of Chili, and is found in great abundance in the neighbourhood of Valparaiso, where it is called Flor de Perdiz (Partridge flower). It was first introduced in 1828, but appears to have been lost, or "at least," as Dr. Lindley observes, "it was never brought into notice till" about 1835 or 1837, when tubers of it were sent to various persons from Valparaiso. The culture it requires is exactly the same as that of *T. tricolorum*, which will be given in detail.

3.—TROPÆOLUM TRICOLORUM, Swt. THE THREE-COLOURED INDIAN CRESS.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 270; *Bot. Mag.* t. 3169; *Bot. Reg.* t. 1935; *Paxt. Mag. of Bot.* vol. ii. p. 123; and our *fig.* 4 in Plate 31.

SPECIFIC CHARACTER.—Root tuberous; stem slender, climbing, branched; leaves peltately divided; segments six or seven, obovate, entire, cuspidate. Petioles cirrhose. Petals unguiculate, a little longer than the rather closed permanent calyx, obtuse, quite entire. (*G. Don.*)

DESCRIPTION, &c.—This very beautiful species has three distinct colours in the flowers. The leaves resemble those of *T. brachyceras*, and the stems are nearly equally slender. It is a very elegant climber; and when it is ten or eleven feet high, and trained round a frame, it produces a very beautiful effect. It is generally planted in pots and kept in a greenhouse, but it will grow vigorously, and produce a great abundance of flowers, in the open air. The tubers are flat and roundish, like those of the Cyclamen, and they should be laid on the surface of the soil, instead of being planted in it. If, however, the tuber be exposed to the violent action of the light, the plants will neither be healthy nor flower abundantly the first year; though the bulbs from becoming stronger will produce more and better flowers the following season. When kept in pots, they do not require much room; but, as the plants have very slender fibrous roots, which are easily withered by drought, it is a good plan to put the pot containing the Tropæolum into another pot a good deal larger, filling up the interstices between the two with sand or moss, which should be kept constantly wet. This imparts coolness and moisture to the pot within, without running any risk of rotting or injuring the roots, by keeping them in water. When grown in the open ground, the tuber should be planted in a sandy soil, and the stems should be trained over a trellis, as they are too slender to look well nailed against a wall. This species is a native of Chili, and it was introduced so long back as 1828; but for some time after its introduction, it was such a weak feeble plant as to appear scarcely worth growing. The tubers being buried in the earth became sodden with wet, and consequently soft and rotten; and thus, many plants died off without any sufficient cause being discernible, while those that remained alive became yellow and faded. It may be increased by seeds or cuttings, or offsets like other tubers.

4.—TROPÆOLUM AZUREUM, *Miers*. THE BLUE TROPÆOLUM.

SPECIFIC CHARACTER.—Leaves five-parted; segments linear, nearly equal. Petals five, intensely blue, longer than the calyx. Spur conical, shorter than the sepals.

DESCRIPTION, &c.—This is a most beautiful species with the stem, leaves, and habit of *T. brachyceras*, but flowers of a brilliant and intense blue. A specimen imported from Chili in 1841, was exhibited in flower by Messrs. Veitch and Son of Exeter, at the rooms of the Horticultural Society in Regent Street, October 4, 1842, being the first ever seen in blossom in England. The flowers are larger than those of *T. brachyceras*, but of nearly the same form; and the blue is deepest at the margin of the petals, becoming paler in the centre. The whole appearance of the plant is particularly light and elegant, from the delicacy of the foliage, and the great abundance of the flowers; as yet it has been only grown in a pot, but it will probably prove quite as hardy as the other species.

5.—TROPÆOLUM PENTAPHYLLUM, *Lam.* THE FIVE-LEAVED TROPÆOLUM, OR INDIAN CRESS.

SYNONYME.—*T. quinatum*, *Helle.*; *Chymocarpus pentaphyllum*, *D. Don.*

ENGRAVINGS.—*Bot. Mag.* t. 3190; *Bot. Reg.* t. 1547; *Swt. Brit. Flow. Gard.* 2d ser. t. 245; and our *fig. 6* in Plate 31.

SPECIFIC CHARACTER.—Stem climbing. Root tuberous. Leaves with long petioles, five-parted. Flowers axillary, solitary, on long peduncles. Calyx persistent. Spur long, clavate at the extremity. Petals two, very small. Fruit a pulpy berry.

DESCRIPTION, &c.—This species differs so much from all the others, that the late Professor Don made it a distinct genus. The principal point of difference is, however, in the fruit, which is a juicy berry resembling, in appearance and taste, a black Zante grape. Other points of difference are in the petals, of which there are only two, instead of five; and in the calyx, which is valvate in the bud, and remains on till the fruit is ripe. It is a native of Buenos Ayres, and was first introduced in 1824; but being soon lost, it was re-introduced in 1830. It requires the same treatment as *T. tricolorum*, but as it grows much more vigorously in the open air than in a greenhouse, it is better adapted for a border plant. It should be grown in a compost of sandy peat and loam; and it is propagated by seeds, which it ripens freely, or by cuttings which must be struck in sand, with the pot plunged in a hotbed. The name of *Chymocarpus* is derived from *Chymos*, juicy; and *carpus*, a fruit.

6.—TROPÆOLUM MORITZIANUM, *Klotzsch.* MR. MORITZ'S TROPÆOLUM.

ENGRAVINGS.—*Bot. Mag.* t. 3844; *Pact. Mag. of Bot.* vol. viii. p. 199; and our *fig. 1*, in Plate 31.

SPECIFIC CHARACTER.—Leaves peltate, slightly 7—9-lobed, truncate at the base. Petals longer than the calyx, veined, and fringed at the margin with red. Spur long.

DESCRIPTION, &c.—This very remarkable species of *Tropæolum* was introduced in 1840 from Cumana in the West Indies; but though a native of so warm a climate, the plant grows vigorously in the open air in England, though as yet it has only flowered in a greenhouse. The root is tuberous, the stems are long, twining, and of a purplish tinge, and the leaves are nearly as round as those of the common annual species in the upper half of the leaf, but nearly straight in the lower part near the stalk. The plant is most nearly allied to *T. tuberosum*, and is rather shy in producing its flowers. Some have supposed it to be the same as *T. bicolor* described by Ruiz and Pavon. It is generally grown in peat and loam.

7.—TROPÆOLUM JARRATTII, *Pact.* MR. JARRATT'S TROPÆOLUM.

ENGRAVINGS.—*Pact. Mag. of Bot.* vol. v. p. 29; and our *fig. 5* in Plate 31.

SPECIFIC CHARACTER.—Stem climbing, slender. Leaves cut into six or seven segments. Petioles and peduncles cirrhose.

DESCRIPTION, &c.—The flowers of this species strongly resemble those of *T. tricolorum*, but the plant is of





1. *Tropaeolum Moritzianum* - 2. *Tropaeolum tuberosum* - 3. *Tropaeolum brachyceras* - 4. *Tropaeolum tricolorum*
5. *Tropaeolum Jarrattii* - 6. *Tropaeolum pentaphyllum*

a much more vigorous habit of growth. It appears indeed far more hardy than any other species, and grows vigorously in the open air. It flowers so freely, that before a newly planted tuber had made a shoot 12 inches long, it was covered with flower-buds, which soon opened into flowers. It is a native of Santiago, whence it was imported in 1836. It should be treated like *T. tricolorum*, and "grown in a 16 sized pot in equal parts of loam and peat." "It may be propagated by cuttings, planted in sand and placed in heat under a glass."

Paxt.

8.—TROPÆOLUM EDULE, *Lindl.* THE EATABLE TROPÆOLUM.

ENGRAVING.—*Paxt. Mag. of Bot.* vol. ix. p. 128.

SPECIFIC CHARACTER.—Root tuberous. Leaves deeply cut into six

or seven linear-lanceolate segments. Spur moderately long, not clavate, curved. Stamens inclining upwards.

DESCRIPTION, &c.—The description given by Dr. Lindley in the *Botanical Register* a year or two ago, of a blue *Tropæolum*, excited a strong desire in all collectors of flowers to possess it, and great numbers of tubers were imported from South America, in hopes that among them might be the much desired plant. Many of these tubers flowered in the spring and summer of 1842, and though Messrs. Veitch and Son, of Exeter, were the only persons so fortunate as to obtain the *Tropæolum* with blue flowers, other valuable species have been discovered, one of which has been figured by Paxton, and proves to be *T. edule*. The flower-buds of this species are of a deep rich green, which colour is retained by the segments of the calyx; the spur of the flower and the petals are of a brilliant orange or golden yellow. The leaves are very glaucous, and they are divided into long narrow segments. The tubers are large and eatable, and the species would be a valuable one, as the flowers are very brilliant, were it not for the great length of the stems, in proportion to the leaves and flowers, which are placed widely apart. To prevent the bare appearance of the stems, the plant should be trained over a flat trellis, which should be covered as closely as possible. The leaves are apt to turn yellow, and the stems to wither and damp off, if the plant be not regularly watered, or if the tuber be exposed to the light. On this account it is desirable to have the tuber covered with moss, as well as to attend carefully to the watering. The species is a native of Chili, whence it was introduced in 1841.

OTHER SPECIES OF TROPÆOLUM.

Several other species are mentioned in books, but the most interesting appears to be *T. polyphyllum*, which was introduced in 1843, and which has yellow flowers, streaked with red.

CHAPTER XIV.

OXALIDEÆ.

CHARACTER OF THE ORDER.—Calyx five-parted, permanent, equal. Petals five, equal, unguiculate, spirally twisted in æstivation. Stamens ten, filaments awl-shaped, erect, usually monadelphous at the base. Ovary free, five angled, five celled. Capsule bursting lengthwise at

the angles. Seeds few, enclosed in a fleshy aril when young but bursting from the apex with elasticity when ripe. Albumen cartilaginously fleshy.

DESCRIPTION, &c.—There are four genera in this order; but they are nearly all stove plants, with the exception of those included in the genus *Oxalis*.

GENUS I.
OXALIS, *Lin.* THE WOOD SORREL.

Lin. Syst. DECANDRIA PENTAGYNIA.

GENERIC CHARACTER.—Sepals five, free, or connected at the base. Stamens monadelphous at the base. Stigmas pencil-formed, rarely capitate or bifid. Capsule oblong or cylindrical. (*G. Don.*)

DESCRIPTION, &c.—The genus *Oxalis* comprises a great number of species; some of which are shrubby and some herbaceous, many having tuberous roots, but some being annual, and some stove shrubs, while others are the inhabitants of the greenhouse, or quite hardy. The flowers are always handsome in their form, from the regularity of their five unguiculate equal petals, and their colours are generally brilliant. The leaves vary considerably, but they are most commonly trifoliate, and slightly acid. The tubers are frequently eatable, and resemble in taste those of the Jerusalem artichoke. All the species grow best in a mixture of sand, peat, and loam, and they require regular watering, as they are easily killed by suffering the roots to become too dry.

1.—OXALIS CRENATA, *Jacq.* THE SCALLOPED WOOD SORREL.

ENGRAVINGS.—Swt. 2d ser. t. 125; and our fig. 2 in Plate 32.

SPECIFIC CHARACTER.—Stem erect. Leaves ternate, leaflets obcor-

date, downy. Peduncles umbelliferous, five or six flowered, longer than the leaves. Petals crenated. Root tuberous.

DESCRIPTION, &c.—This plant is well known from so much having been said of it a few years ago as a substitute for the potato. Its tubers are eatable, but they are soft and watery, resembling a Jerusalem artichoke much more than a potato. The leaves are slightly acid, and have been recommended as a substitute for rhubarb in tarts, and for sorrel in fricandeaus and other made dishes; the best way of using them is, however, in salads. The flowers of *O. crenata* are very handsome, but they are seldom produced. The stems die down to the ground on the first attack of frost, and the fibrous roots which unite the tubers wither, so that the plant may be called an annual, though it is not more so than the potato. It is propagated either by cuttings or tubers, for it rarely ripens its seeds in this country; and it will grow in any common garden soil. If, however, the soil be too rich, it will produce little else than leaves and stems, and if too poor it will not thrive; in fact, the culture depends partly on the use to which the plant is to be applied. If the tubers are required, it should be propagated by them, and the shoots pegged down in light rich soil, to induce them to throw out roots; but if the flowers are considered the principal object, the plants should be raised from cuttings, when, generally, they will only form fibrous roots, and consequently will be strong enough to produce flowers, which will appear in July, and continue nearly all the summer. It is a plant that will not bear cutting in, if it is intended to produce flowers, as that treatment makes it produce only a mass of stems and leaves. It perhaps flowers best in pots or boxes, where it can be grown in good soil without having too much room allowed for its roots. Though its stems and leaves are killed by frost, its tubers are quite hardy, and even have been known to vegetate after having been exposed to frost when out of the ground. The species is a native of Peru, and was introduced in 1829.

2.—OXALIS STRICTA, *Lin.* THE ERECT OXALIS.

SYNONYME.—*O. ambigua*, *Sal.*

SPECIFIC CHARACTER.—Stem erect, leafy. Peduncles umbelliferous, 2-6-flowered, rather shorter than the leaves; leaflets obovate.

Petals entire. Styles about the length of the inner stamens. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of North America from Pennsylvania to Carolina, and it is said

to be found wild also in Jamaica. It is of low growth with a creeping root, so that it soon covers a patch of earth with its leaves and small yellow flowers. It was formerly used in medicine in inflammatory cases; and it was introduced into England so far back as 1658, though it is now seldom seen in gardens.

3.—OXALIS ROSEA, *Jacq.* THE ROSE-COLOURED OXALIS.

SYNONYMES.—*O. floribunda*, *Lindl.* in *Bot. Reg.*; *O. racemosa*, *Lam.*

ENGRAVINGS.—*Bot. Mag.* t. 2415; *Bot. Reg.* t. 1123.

SPECIFIC CHARACTER.—Stem erect, branching. Peduncles very long. Flowers somewhat umbellate, and before expansion nodding. Leaflets obovate, sessile.

DESCRIPTION, &c.—This very beautiful little plant only wants larger flowers to make it extremely desirable for gardens. It is a native of Chili, whence it was introduced in 1823; and it begins to flower in March or April, continuing to produce a succession of blossoms all the summer. It is a very desirable plant for a small garden, but it is not so well suited for a large one, as it requires a good deal of care and attention; as, for example, it should have a slight protection during severe frosts, and should be watered regularly when growing.

4.—OXALIS FLORIBUNDA, *Lehm.* THE MANY-FLOWERED OXALIS.

ENGRAVINGS.—*Bri. Fl. Gard.* 2d ser. t. 54; and our *fig. 3*, in Pl. 32.

SPECIFIC CHARACTER.—Stem short, and somewhat fleshy. Leaves numerous, verticillate, on long hairy petioles; leaflets obovate, ferru-

ginously-villose. Peduncles many-flowered, elongated, three times as long as the leaves; calyx and corolla covered with silky hairs. Style twice as long as the stamens.

DESCRIPTION, &c.—This very beautiful species has large rose-coloured flowers, which are produced in great abundance the whole summer. The stem is so small as to be scarcely perceptible; but the footstalks of the flowers are so long, and rise so much above the leaves, as to prevent the want of a stalk being noticed. The flowers are of a brilliant dark crimson, and they are produced in such abundance, and continue so long in beauty, fresh flowers opening as fast as any decay, as to render the plant one of great value in a garden. The root is tuberous, solid, and jointed, and it should be planted in a warm border, in a mixture of turfy loam not broken small, sand, and charcoal. It requires plenty of light and air, and in favourable situations it will continue in blossom from May to October. It is a native of Brazil, whence it was introduced in 1829.

5.—OXALIS LYONII, *Pursh.* MR. LYON'S OXALIS.

SPECIFIC CHARACTER.—The whole plant clothed with silky villi. Stem branched, decumbent; peduncles two or three flowered, longer

than the petioles; leaflets obovately two-lobed; petals wedge-shaped; capsules downy, twice the length of the lanceolate calyx. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of North America, being found wild on Cumberland Island, Georgia. It is a decumbent plant, with yellow flowers, which are produced in June and July, and it was introduced in 1816. It is rarely seen in collections; but it would be worth growing if it could be obtained, as it is quite hardy, and the colour of its flowers would contrast agreeably with the deep rose-colour of most of the species.

6.—OXALIS DEPPEI, *Lodd.* MR. DEPPE'S OXALIS.

ENGRAVINGS.—*Bot. Cab.* t. 1500; *Swt. Brit. Flow. Gard.* 2d ser. t. 96.

SPECIFIC CHARACTER.—Stemless. Leaflets four, large, obovate, pilose, glaucous beneath, on short petioles; petioles densely pilose.

Umbels many-flowered; scape and peduncles loosely-pilose; styles intermediate, villous; stamens unequal, alternate ones each with an appendage. (*G. Don.*)

DESCRIPTION, &c.—This species, which is now rapidly becoming popular, has crimson flowers nearly as large as those of *Oxalis Bowiei*; and leaves divided into four large, and generally drooping, leaflets, each of which is marked across the middle by a deep brown or blackish band, which forms a ring extending through all the

leaflets, as in the leaves of the common clover. The leaflets are of a thick fleshy succulent texture, and being consequently very heavy, they generally droop; and thus each leaf, at a little distance, looks something like a butterfly. There is no green stem; but the leaves spring from a kind of bulb, enveloped in a mass of chaffy scales, so as to look like the scaly bulb of a small lily; from this bulb the plant sends down one or more strong fusiform roots, usually about four inches long and one inch in thickness, which are good to eat. To prepare them, they are washed and picked, and then simmered in water, with a little salt in it. When tender, they are served with melted butter and toast like asparagus, or with white sauce like scorzonera, and in taste greatly resemble that vegetable. The leaves are used as a substitute for sorrel and in salad; and the flowers are put into salads, not only for their taste, which is agreeably acid, but that their brilliant crimson may relieve the mass of green. The plant flowers freely; and, from its neat, compact growth, it is sometimes used for garden edgings. It is propagated by little scaly bulbs or offsets, which form by the side of the larger bulb, and round the collar of the plant. These bulbs should be pulled off when the fusiform roots are taken up in October for use, and kept dry and secure from frost in sand till April, when they should be planted in a very sandy soil enriched with vegetable mould, in drills two inches deep and seven inches apart, and the bulbs five inches apart. As the bulbs, however, are generally very small, two or three may be planted together, keeping the tufts thus formed five inches apart. The young plants should be regularly watered if the weather be very dry; and some gardeners water them with liquid manure (from cow-dung) just before they form their flower-buds. If grown in a light rich soil, and never suffered to become too dry, these plants will remain in flower from the latter end of May till October. In most parts of England they may be left in the ground all the year without protection, when the fusiform roots are not taken up as an article of food; but in cold situations, or in long severe frosts without snow, the plants should have a mat thrown over them. The tubers, when taken up, may be kept like potatoes. *O. Deppei* is a native of Mexico, whence it was introduced in 1827; but it was very little noticed till about 1840, when some papers respecting it, which had appeared in the German horticultural works, were translated and republished in England. Its uses and mode of culture are, however, given in an account of the Botanic Garden at Berlin, published in the *Gardener's Magazine* for 1836, p. 302. The specific name of *Deppei* is from Mr. Deppe, a German naturalist, who first discovered the plant in Mexico.

7.—OXALIS BOWIEI, *Ait.* MR. BOWIE'S OXALIS.

ENGRAVINGS.—Bot. Reg. t. 1585; Lodd. Bot. Cab. t. 1782; and our *fig. 1* in Plate 32. SPECIFIC CHARACTER.—Stemless. Leaflets three, roundish, cordate, emarginate. Peduncles about the length of the leaves, umbelliferous.

DESCRIPTION, &c.—This is decidedly the handsomest of all the species. The flowers are large, and of a most brilliant rose colour; they are also produced in such abundance as to have a most brilliant effect in the flower-garden. During a visit to Devonshire in September 1842, I frequently saw large tufts of this beautiful species in the borders of the flower-gardens, and it is impossible to describe the splendid effect they produced. When planted in the open ground, the plants flower in September and October; but by potting them and keeping them quite dry so as to allow them about a fortnight's rest at Midsummer, or later, and then placing them in a stove, to start them, as the gardeners call it, the plants may be made to flower freely, and at any season required, according to the time when they are given their period of rest. When the flower-buds are once formed, they may be removed to a cooler temperature to flower. This beautiful species is a native of the Cape of Good Hope, whence it was introduced in 1824; and it and the following species are the only Cape kinds of *Oxalis* that will flower in the open air.



1. *Oxalis Bowiera* — 2. *Oxalis crenata* — 3. *Oxalis floribunda* — 4. *Oxalis variabilis*.

3.—OXALIS VARIABILIS, *Dec.* THE VARIABLE OXALIS.

SYNONYMS.—*O. grandiflora*, *Willd.*; *O. laxula*, *Jacq.*; *O. brevicaupa*, *Spreng.*; *O. rigidula*, *Jacq.*; *O. saggillata*, *Jacq.*

VARIETY.—*O. v. β floribus rubris*, *Lindl.*; *O. variabilis β* , *Jacq.*; *O. purpurea*, *Willd.*; *O. speciosa*, *Spreng.*

ENGRAVINGS.—*Bot. Reg.* t. 1505; and our *fig. 4* in Plate 32.

SPECIFIC CHARACTER.—Stemless, downy. Leaflets sub-rotund, wedge-shaped at the base. Peduncles one-flowered; stamens with a tubercle at the base.

DESCRIPTION, &c.—There are two very distinct varieties of this species; one with white flowers, and the other with the flowers pinkish. Both are natives of the Cape of Good Hope, whence they were introduced in 1795. Besides these distinct kinds, the species varies so very much as to have received a great many names from botanists, as is proved by the numerous synonymes. These kinds should be planted in a warm sunny border, and kept dry for a period when they have done flowering. They should also be protected from frost.

OTHER SPECIES OF OXALIS.

O. TETRAPHYLLA, *Lodd. Bot. Cab.* t. 790.

This species has purple flowers, but in other respects it closely resembles *O. Deppei*. It is a native of Mexico, whence it was introduced in 1822.

O. CARNOSA, *Molina.*

A half-hardy species, with very fleshy leaves, and small yellow flowers. A native of Chili; introduced in 1825.

O. FULGIDA, *Lindl.*

A dwarf plant, a native of the Cape of Good Hope; introduced in 1822, and remarkable for the smallness of its leaves, which resemble those of a heath, and the brilliant rose colour of its flowers.

O. VIOLACEA, *Jacq.*

A hardy species, with a bulbous root; introduced in 1772. The flowers are violet-coloured.

O. DIVERGENS, *Lindl.*

A very handsome Mexican species, with white flowers, which resemble those of *Anemone vitifolia* in their texture and brilliant whiteness. The plant grows best in the open ground, but it requires a slight protection against frost in the climate of London. It was introduced about 1830. It is well deserving of cultivation, both for its beauty and the great length of time it continues in flower, viz. from June to September.

O. LOBATA, *Sims, Bot. Mag.* t. 2386.

A tuberous-rooted plant, presenting the same singular appearance as *O. Deppei*, of fusiform tubers like those of the *Dahlia*, growing out of a scaly bulb. The whole plant is small, and the flowers yellow. It is a native of Chili, introduced in 1821.

O. ALBA, *D. Don, Swt. Brit. Flow. Gard.* 2d ser. t. 398.

This species has a smooth bulb, with fusiform roots proceeding from it. The flowers are white, and resemble those of *O. divergens*. It was sent to Edinburgh in May 1838 from Haarlem, but its native country is not known.

CHAPTER XV.

ZYGOPHYLLÆ.

CHARACTER OF THE ORDER.—Calyx of five distinct sepals, or hardly connected at the base. Petals five, alternating with the sepals, and inserted in the receptacle. Stamens ten, distinct, hypogynous, five opposite the petals, and five opposite the sepals. Ovary 1—5-celled.

Styles five, joined into one, but sometimes they are distinct at the top. Carpels five, constantly more or less adnate to each other, and to the central axis; cells opening at the upper angle, usually many-seeded, sometimes one-seeded. (*G. Don.*)

DESCRIPTION, &c.—The type of this order is the Bean Caper, *Zygophyllum Fabago*, a plant with small red flowers, by no means ornamental. The order is distinguished from Oxalidæ by the styles being joined in one, and the seeds having no axil. The leaves are also generally compound, and furnished with two stipules at the base of the petioles. There are very few ornamental plants in the order, and almost the only showy plant belonging to it which will flower in the open air is *Melianthus major*.

GENUS I.

MELIANTHUS, *Lin.* THE HONEY-FLOWER.*Lin. Syst.* TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft, unequal; lower segment | of which are connate. Style one, crowned by a four-cleft stigma. Cap-
drawn out into a hollow gibbosity. Petals five. Stamens four, two | sule four-lobed, four-celled; cells one-seeded from abortion. (*G. Don.*)

DESCRIPTION, &c.—There are three species in the genus, only one of which will, however, flower in the open air. The name *Melianthus* is composed of two Greek words, signifying literally Honey-flower; and it alludes to a hollow projection in the flower, which is filled with a sweet liquid, tasting like honey. The flowers have a coloured calyx, which forms their showy part, the petals being seldom seen. The leaves are very large and glaucous, and they have an unpleasant smell when bruised. The stems are suffruticose, and those of the greenhouse kinds are decidedly shrubby.

1.—MELIANTHUS MAJOR, *Lin.* THE LARGER HONEY-FLOWER.

SYNONYMES.—*M. africanus*, *Herm.*; Sicilian, or Sea Ragwort.
ENGRAVINGS.—*Bot. Reg.* t. 45; and our *fig.* 3 in Plate 33.

SPECIFIC CHARACTER.—Leaves smooth on both surfaces, glaucous.
Stipules large, joined to the petioles. (*G. Don.*)

DESCRIPTION, &c.—This plant, though called suffruticose, is properly a perennial, as the slight woodiness which it sometimes shows near the base is only found in old plants; and a stem ten feet high will be often entirely hollow and herbaceous. It is very handsome, even when it does not flower, from its large, glaucous, pinnate leaves, which have broad stipules sheathing the petiole. The flowers are also very handsome, though the showy part is only the calyx. The species is a native of the Cape of Good Hope, whence it was sent to Holland in 1673; and it was brought to England from that country in 1688, by Mr. Bentinck, afterwards Lord Portland. The leaves have a very unpleasant smell when bruised; and the flowers, when shaken, give out a sweet glutinous liquid, which is highly prized by the natives at the Cape. It is even said that when one of these plants is descried in flower, the natives will run to it, eagerly striving which shall be first to secure the delicious liquor for himself. The plant in England is frequently kept in a greenhouse; but it seldom flowers except in the open ground, though it is somewhat tender. The best way, therefore, of treating it is to plant it in the open ground, in face of a south wall, and to cover the shoots during winter, as it will not flower if the





1. *Dictamnus angustifolius*.—2. *Aplophyllum suaveolens*.—3. *Melianthus major*

tips of the shoots are killed. Miller also advises it to be planted in dry rubbish, that it may shoot less vigorously, and be consequently less succulent, and less liable to be injured by frost. "For if the stalk is killed at the top, though it sprouts again, it will not flower the same season." It is increased by suckers, taken off between March and September; and in favourable summers it ripens seed.

 CHAPTER XVI.

RUTACEÆ.

CHARACTER OF THE ORDER.—Flowers of all hermaphrodite. Calyx with 4—5, rarely 3 divisions, toothed, cleft or parted. Petals equal in number to the divisions of the calyx, and alternating with them, usually distinct and longer than the calyx. Stamens sometimes equal in number with the petals, and alternating with them; sometimes double that number, with the alternate ones shortest: sometimes these last are abortive, and of a different figure from the others. Filaments inserted in the gynophore, rarely beneath the hypogynous disk, and more rarely perigynous, or adhering to the bottom of the calyx, in consequence of the disk being joined with it; they are either naked or furnished with a scale at the base, free, very rarely connected at the base, or glued to the corolla, as in those with menepetalous flowers. Anthers two-celled, bursting lengthwise. Ovary free, with the cells equal in number to the petals and opposite them, rarely fewer, verticillate; sometimes fixed around the common axis, sometimes distinct to the base, sometimes joined together. Ovules fixed to the central pla-

centa, usually two in each cell or carpel, rarely one or 4—20. Styles equal in number to the cells or carpels, usually connected together in one, or only connected at the base or top, rarely wholly distinct. Stigma of as many lobes or furrows as there are styles in these that are joined. Fruit sometimes simple, having as many valves as there are styles, with a dissepiment in the middle of each valve; dehiscent, but more usually with an equal number of two-valved, separable carpels, rarely indehiscent, composed of many drupes or carpels. Sarcocarp thin, or more or less fleshy. Endocarp thin, or woody, closely adhering to the sarcocarp, or separable from it into a two-valved, elastic cocoonium. Seeds fewer than the ovules, from abortion, with a membranous, or usually with a testaceous covering. Albumen fleshy, or cartilaginously horny, rarely wanting. Embryo white or greenish, with a straight radicle pointing towards the top of the cells, rarely turned obliquely towards the hilum. Cotyledons of various forms.

DESCRIPTION, &c.—The plants belonging to the order Rutaceæ are rarely ornamental, except in the genus *Dictamnus*. I have, however, given one species of *Apolophyllum*, as it is very showy in shrubberies or broad borders, where a mass of yellow flowers is required. The plant which gives its name to the order is the common rue of the gardens (*Ruta graveolens*), a well-known, strong-smelling shrub, with bluish green leaves, and yellow flowers.

GENUS I.

 DICTAMNUS, *Lin.* THE FRAXINELLA.

Lin. Syst. DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted, unequal. Petals unequal. Stamens ten, declinate. Style one. Capsule substipitate, composed of five two-seeded carpels. (*G. Don.*)

DESCRIPTION, &c.—The two species composing this genus are well-known showy border-flowers. The origin of the name *Dictamnus* is not known; but that of *Fraxinella* signifies "little-ash," in allusion to the pinnate leaves.

 1.—DICTAMNUS FRAXINELLA, *Pers.* THE COMMON FRAXINELLA.

SYNONYMS.—*D. albus*, *Lin.*; *D. rubra*, *Link*; False Dittany, *Gerard*; White Dittany, *Parkinson*.

VARIETIES.—There are two kinds, one with white flowers, and one

with purple flowers; but they will frequently come up in the same bed when raised from seed.

SPECIFIC CHARACTER.—Leaflets 4—5 pairs, cordate at the base, acute at the apex, finely serrulated; racemes long; calyx unequal.

DESCRIPTION, &c.—This plant is a very interesting one, from the discovery made by the daughter of Linnæus respecting it. The plant exhales a kind of gaseous vapour; and this lady happening to set a candle

near a plant of *Fraxinella*, observed the gas exuding from it to take fire, and burn like a halo round the plant. This experiment can only, however, succeed in fine warm, dry weather. The plant when bruised, particularly the petioles, smells like lemon-peel, and has a rich balsamic fragrance. The root was formerly used in medicine. Both the species and variety are natives of Germany and other parts of Europe, and were introduced before 1596. They will grow in any common garden soil, and are increased by seeds or by division.

2.—*DICTAMNUS ANGUSTIFOLIUS*, *Swt.* THE NARROW-LEAVED *FRAXINELLA*.

ENGRAVINGS.—*Swt.* Brit. Flow. Gard. 2d ser. t. 93; and our fig. 1 in Plate 33. | SPECIFIC CHARACTER.—Leaflets 4—5 pairs, alternate, ovate-lanceolate, acuminate, finely serrulated; racemes long; calyx nearly equal.

DESCRIPTION, &c.—This species has numerous stems rising from the same root, which are not so stiff as those of the common species, and are consequently more graceful. The flowers are also larger and more delicately marked; and the leaflets are much larger, serrulated with numerous short teeth, and dotted with a great number of little dots, which are smooth and glossy on the under side. The lower side is also covered with soft weak hairs, particularly on the nerves. The species is a native of Siberia, whence it was introduced in 1821; and it requires the same culture as the common *Fraxinella*. It also agrees with that plant in its lemon-like smell, and in emitting a gas which will take fire by applying a light to it, and which will burn round the plant for a long time without injuring it. The root is medicinal.

GENUS II.

APLOPHYLLUM, *Juss.* THE ENTIRE-LEAVED RUE.

Lin. Syst. DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Stamens ten. Styles five, connected. Capsule five-lobed, five-celled. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus differ from those included in the genus *Ruta*, in having entire leaves, instead of pinnate ones. There are several species, all natives of Europe and Asia, but only four or five of them have been introduced. The name *Aplophyllum* signifies simple-leaved.

1.—*APLOPHYLLUM SUAVEOLENS*, *G. Don.* THE SWEET-SCENTED RUE.

SYNONYMS.—*Ruta suaveolens*, *Dec.*; *R. linifolia*, *Bieb.*; *R. l. grandiflora*, *Sims.* | SPECIFIC CHARACTER.—Leaves entire, spatulately-lanceolate, glaucous, smoothish; calyxes a little fringed; ovaries quite smooth; petals ovate.

DESCRIPTION, &c.—A very showy plant, with large clusters of yellow flowers, which have the scent of the cowslip. There is a variety, the flowers of which are lemon-scented. The species is a native of Asiatic Russia, and the variety is found in Greece. They are both quite hardy, and only require planting in the open garden. They are propagated by division of the root. They flower all the summer, from June to September. The species was introduced in 1800.

OTHER SPECIES OF *APLOPHYLLUM*.

A. PUBESCENS, *G. Don.*; RUTA PUBESCENS, *Willd.*; R. PATAVINA, *Poir.*

A native of Spain; introduced in 1816. Flowers yellow.

A. VILLOSUM, *G. Don*; RUTA VILLOSA, *Bieb.*; R. PARVIFLORA, *Desf.*

Flowers small, racemose. A native of Mount Caucasus; introduced in 1818.

A. LINIFOLIUM, *G. Don*; RUTA LINIFOLIA, *Lin., Andr. Bot. Rep. t. 565.*

A showy species with corymbose yellow flowers. A native of Spain and other parts of Europe; introduced in 1752.

A. DAHURICUM, *G. Don*; RUTA DAHURICA, *Dec.*; PEGANUM DAHURICUM *B, Lin.*

Flowers pale yellow or white. Introduced in 1816.

CHAPTER XVII.

LEGUMINOSÆ.

CHARACTER OF THE ORDER.—Calyx five-cleft, or five-toothed, or bilabiate. Petals usually five, rarely fewer, papilionaceous, or unequal, seldom nearly equal, imbricate in æstivation, inserted in the bottom of the calyx, rarely in the torus. Stamens inserted with the petals, and generally twice their number, monadelphous or diadelphous. Ovarium free, usually stipitate. Segments generally two-valved, one-celled, or transversely many-celled. Seeds fixed to the upper suture of the legume by funicles. Albumen uoac. Leaves usually alterate, variable, bistipulate. Flowers of various hues. (*G. Don.*)

DESCRIPTION, &c.—Perhaps no order is more popular than this. The plants belonging to it are extremely numerous, and are divided into three kinds with regard to their flowers, though they all agree in their fruit being leguminous; that is, consisting of a seed or many seeds, each of which has a little footstalk by which it is attached to the upper part of a seed-case or pod. Some of these seeds open, when they begin to grow, into two fleshy seed-leaves, or cotyledons as they are called, which differ from the other leaves both in shape and texture; and these plants are wholesome to eat, as, for example, the pea and bean. Other plants belonging to the Leguminosæ have seeds which open into their membranelike cotyledons, and these seeds are poisonous. The flowers of the Leguminosæ are divided into three kinds: those that are butterfly-shaped or papilionaceous, like the pea and lupine; those that look like a tuft of silk, like the acacia; and those that have five regular petals, like the cassia or senna tree. The Leguminosæ are of various kinds: some require a stove, some a greenhouse and some are hardy, and some are trees or shrubs; while others are perennials, biennials, or annuals. The hardy perennials and biennials have almost all pea flowers.

GENUS I.

BAPTISIA, *Dec.* THE BAPTISIA.

Lin. Syst. DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx 4—5-cleft, bilabiate. Petals five, nearly equal in length. Vexillum with reflexed sides. Stamens deciduous. Legume ventricose, pedicellate, many-seeded. North American herbs, with trifoliate, rarely simple leaves, and racemes of yellowish or blue flowers. (*G. Don.*)

DESCRIPTION, &c.—The species included in this genus are all showy North American plants, generally with trifoliate leaves, and yellow or purple pea-flowers, which are produced in upright racemes. The name Baptisia, which is derived from *Bapto*, to dye, was applied to this genus by Professor De Candolle, on account of the use made of the roots of some of the species in dyeing. The species are all hardy, or very nearly so, and they will grow in any common garden soil. They are propagated by seeds, or by division of the roots.

1.—BAPTISIA PERFOLIATA, *R. Br.* THE PERFOLIATE-LEAVED BAPTISIA.

SYNONYMES.—*Crotalaria perfoliata*, *Lin.*; *Rafnia perfoliata*, *Willd.*; *Sophora perfoliata*, *Walt.*; *Pedalyria perfoliata*, *Michx.* | SPECIFIC CHARACTER.—Quite smooth; leaves perfoliate, roundish, quite entire, rather glaucous; flowers axillary, solitary. (*G. Don.*)

DESCRIPTION, &c.—This plant is remarkable as being the only species of *Baptisia* which has entire leaves, which are perfoliate, that is, the stem appears to come through them, as in the honeysuckle. The flowers are small and yellow. The species is a native of Georgia and Carolina, on dry sandy hills, and it was introduced in 1793. It grows about three feet high, and flowers in August.

2.—BAPTISIA AUSTRALIS, *R. Br.* THE SOUTHERN BAPTISIA.

SYNONYMES.—*Sophora australis*, *Sims*; *Pedalyria australis*, *Vent.*; *P. cærulea*, *Pursh.* | are, as well as the branches, smooth; leaflets oblong, cuneated, obtuse, four times longer than the petiole; stipules lanceolate, acute, twice the length of the petioles; racemes few-flowered, elongated, shorter than the branches; calyx quadrifid, lower segment obtuse; legumes apiculated.

VARIETY.—*B. a. exaltata*. *B. exaltata*, *Sot.* *Brit. Flow. Gard.* t. 97.

ENGRAVINGS.—*Bot. Mag.* t. 509; and our *fig. 2* in Plate 34.

SPECIFIC CHARACTER.—Stem branched, diffuse; leaves stalked, and

DESCRIPTION, &c.—A very showy species, with dark purple flowers; quite hardy, and flowering abundantly. *Baptisia exaltata* is probably a variety of this species, as it only differs in growing more erect, and much taller, being often four feet high; while *B. australis* is rarely more than two feet. The latter species is a native of West Carolina, and it was introduced in 1758. It may be propagated either by division of the roots, or seeds, which it ripens in abundance

3.—BAPTISIA ALBA, *R. Br.* THE WHITE BAPTISIA.

SYNONYMES.—*Sophora alba*, *Walt.*; *Pedalyria alba*, *Sims*; *Crotalaria alba*, *Lin.* | branches, glabrous; leaflets elliptic-oblong, obtuse; stipules deciduous, subulate, shorter than the petioles; racemes terminal; ovaries glabrous. (*G. Don.*)

ENGRAVINGS.—*Bot. Mag.* t. 1177; and our *fig. 3* in Plate 34.

SPECIFIC CHARACTER.—Leaves stalked, and are, as well as the

DESCRIPTION, &c.—Strongly resembling *B. australis*, except in the flowers, which are white. It is quite hardy, but is best propagated by seeds, as it does not bear moving well. It is a native of the West of Virginia and Carolina, where it is found on the banks of rivers. It was introduced by Mr. Mark Catesby in 1724. It flowers in June, about the same time as *B. australis*.

4.—BAPTISIA TINCTORIA, *R. Br.* THE DYER'S BAPTISIA.

SYNONYMES.—*Pedalyria tinctoria*, *Michx.*; *Sophora tinctoria*, *Lin.* | branches, glabrous, upper ones nearly sessile; leaflets roundish-obovate

ENGRAVING.—*Bot. Mag.* t. 1099. | stipules setaceous, almost obsolete; racemes terminal. (*G. Don.*)

SPECIFIC CHARACTER.—Leaves stalked, and are, as well as the

DESCRIPTION, &c.—A dwarf plant, with small yellow flowers, which are thinly scattered in loose racemes, and trifoliate leaves. The pods are nearly oval, and much inflated. They are raised on a footstalk longer than the calyx, and they retain their long slender style till they are ripe. The species is a native of North America, from Canada to Florida; and it was at first supposed to be the Indigo plant, before *Indigofera tinctoria* was discovered, as a coarse kind of blue dye is made from the pulpy part of the leaves. It flowers from July to September, and is sometimes propagated by dividing its roots, but it is safer to depend on the seeds. It requires a dry soil and a sheltered situation.



1. *Baptisia triflora*. — 2. *Baptisia Australis*. — 3. *Baptisia alba*.

OTHER SPECIES OF BAPTISIA.

B. CONFUSA, *Swt.*

Nearly allied to *B. australis*. A native of North America, introduced before 1758.

B. MINOR, *Lehm.*

Introduced in 1828. A dwarf species, with yellow flowers.

B. MOLLIS, *Nutt.*

Stems purplish, and flowers blue; leaves often two inches long, and one inch broad. A decumbent plant; a native of Upper Carolina; introduced in 1824.

B. VILLOSA, *Ell.*; SOPHORA VILLOSA, *Walt.*; PODALYRIA VILLOSA, *Michx.*

Flowers yellow, resembling those of a Lupine. A native of Virginia and North Carolina, in low sandy grounds; introduced in 1811. This species looks very well in a mass with *B. alba* and *B. australis*.

GENUS II.

RAFNIA, *Thunb.* THE RAFNIA.*Lin. Syst.* MONADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx cleft into five to the middle, four upper lobes broadest, sometimes distinct, sometimes variously connected; lower lobe setaceous, and very acute. Corolla smooth, with an obtuse keel and a roundish vexillum. Stamens monadelphous, with the sheath cleft in front at length. Legume lanceolate, compressed, many-seeded. Smooth plants, usually assuming a lurid blackish hue in drying. Leaves simple, entire, not stem-clasping, alternate, but with the floral ones sometimes opposite. Flowers of all yellow.

DESCRIPTION, &c.—The plants belonging to this genus were formerly included in that of *Crotalaria*, but they were separated, by Professor De Candolle, on account of a difference in the calyx and the pod, which contains only one seed; and the new genus was named by him in honour of Professor Rafn, a German botanist. All the species have yellow flowers, and all but one are greenhouse shrubs.

I.—RAFNIA TRIFLORA, *Lin.* THE THREE-FLOWERED RAFNIA.

SYNONYMES.—*Crotalaria triflora*, *Lin.*; *Borbonia cordata*, *Andr.*
ENGRAVINGS.—*Bot. Mag.* t. 482; and our *fig.* 1 in Plate 34, under the name of *Baptisia triflora*.

SPECIFIC CHARACTER.—Leaves simple, ovate, sessile, glabrous. Branches angular. Peduncles lateral, one-flowered, but growing three together.

DESCRIPTION, &c.—This very showy plant is a biennial, introduced from the Cape of Good Hope in 1786. It requires a slight degree of protection during winter; but if the seeds be sown on a hot-bed in February, and the plants afterwards removed to single pots, they may be set in the open air all the summer, and if kept in a frame or greenhouse during winter, they may be planted in the open ground in May, when they will flower in July and August. To ripen seed, however, a plant may be kept in the greenhouse. This plant when first introduced was called *Crotalaria*, afterwards *Baptisia*, and lastly *Rafnia*.

GENUS III.
THERMOPSIS, *R. Br.* THE THERMOPSIS.

Lin. Syst. DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx oblong or campanulate, 4—5-toothed, somewhat bilabiate, convex behind, and attenuated at the base. Petals five, about equal in length. Vexillum with reflexed sides. Keel obtuse. Stamens permanent. Legume compressed, falcate or linear, many-seeded. Perennial herbs, clothed with silky villi. Leaves trifoliolate. Stipules ovate-lanceolate, leafy. Racemes terminal. Flowers pedicellate, twin, or somewhat verticillate, yellow. (*G. Don.*)

DESCRIPTION, &c.—The species belonging to this genus appear to have given a great deal of trouble to botanists, as they have been removed two or three times to different genera. They are all handsome plants, with large yellow pea-flowers, closely resembling those of the different kinds of *Cytisus*, or *Lupine*. The name of *Thermopsis*, indeed, indicates this latter resemblance, as it is from two Greek words, signifying like a *Lupine*.

1.—THERMOPSIS RHOMBIFOLIA, *Nutt.* THE RHOMBOID-LEAVED THERMOPSIS.

SYNONYME.—*Cytisus rhombifolius*, *Fraser*.

SPECIFIC CHARACTER.—Leaves stalked; leaflets rhomb-ovate, somewhat cuneated, rather silky-pubescent; stipules obliquely ovate, acute,

shorter than the petiole; lower flowers of the raceme twin, on very short pedicels.

DESCRIPTION, &c.—The flowers are yellow, and closely resemble those of a *Cytisus*. The plant is a native of Louisiana, and it was introduced in 1811.

2.—THERMOPSIS FABACEA, *Dec.* THE BEAN-LIKE THERMOPSIS.

SYNONYMES.—*T. rhombifolia*, *Rich.*; *Sophora fabacea*, *Pall.*; *S. lupinoides*, *var. Lin.*; *Thermia rhombifolia*, *Nutt.*; *Cytisus rhombifolius*, *Pursh.*

ENGRAVING.—*Bot. Mag.* t. 3611.

SPECIFIC CHARACTER.—Leaves stalked; leaflets broad-oval; stipules broad-ovate, obtuse, shorter than the petioles; racemes with alternate flowers. (*G. Don.*)

DESCRIPTION, &c.—This species is found on the whole of the western side of North America, from north to south; but nowhere on the east. It is also found in *Kamtschatka*. It is quite hardy, and it is readily increased by dividing its creeping root. It grows best in sandy soil. It was first introduced in 1824; but afterwards again in 1837.

3.—THERMOPSIS LANCEOLATA, *R. Br.* THE LANCEOLATE-LEAVED THERMOPSIS.

SYNONYMES.—*Sophora lupinoides*, *Pall.*; *Podalyria lupinoides*, *Willd.*

ENGRAVING.—*Bot. Mag.* t. 1389.

SPECIFIC CHARACTER.—Leaves nearly sessile, lower and upper ones

simple, like stipules, the rest trifoliolate; leaflets oblong-lanceolate; stipules twice the length of the petioles, or more, flowers twin on the racemes; pedicels shorter than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This species bears considerable resemblance to the last in its flowers, though its leaves are smaller. It is a native of *Siberia*, whence it was introduced so long back as 1775, though it is rarely to be met with in gardens. It is quite hardy, but it is very liable to be eaten by slugs.

4.—THERMOPSIS CORGONENSIS, *Dec.* THE ALPINE THERMOPSIS.

SYNONYMES.—*Sophora alpina*, *Pall.*; *Podalyria alpina*, *Willd.*

SPECIFIC CHARACTER.—Leaves sessile, or on very short stalks; leaflets ovate, acute; stipules like the leaves, and with them constituting

a kind of half whorl; flowers twin on the racemes, nearly sessile; calyx villous. (*G. Don.*)

DESCRIPTION, &c.—This species is much smaller than the others. It is a native of the *Altaian Mountains*, whence it was introduced in 1824. It is quite hardy.

GENUS IV.

ANTHYLLIS, *Lin.* THE KIDNEY VETCH.*Lin. Syst.* MONADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx tubular, five-toothed, permanent after flowering, more or less inflated. Wings about equal with the carina and vexillum. Stamens all connected. Legume ovate, one—two-seeded, rarely oblong-linear, many-seeded, always hidden by the calyx. (*G. Don.*)

DESCRIPTION, &c.—The common Kidney Vetch is well known as a pretty little British plant, but as it is seldom grown in gardens I have not thought it worth figuring. There are numerous species, some of which are greenhouse shrubs, and all of which differ so much from each other, that several botanists have proposed dividing the genus into several genera. The name of Anthyllis signifies “bearded flower,” in allusion to the shaggy calyx.

1.—ANTHYLLIS MONTANA, *Lin.* THE MOUNTAIN KIDNEY VETCH.ENGRAVING.—*Swt. Brit. Flow. Gard. t. 79.*

SPECIFIC CHARACTER.—Herbaceous, tufted; leaves pinnate, and are,

as well as the branches, white from villi; leaflets fifteen—nineteen, oval-oblong; heads solitary, on long peduncles. (*G. Don.*)

DESCRIPTION, &c.—A very pretty little plant, with clusters of pink flowers, and bluish green leaves. It is a dwarf plant, seldom above six inches high, but growing in large tufts, from its numerous stems and widely spreading branches. This habit of growth renders it a valuable plant for rockwork; particularly as it thrives best in light sandy soil. The best mode of increasing it is by seeds, which generally ripen plentifully, but it may also be increased by cuttings rooted under common hand-glasses, but they must be planted thinly, or they will be liable to damp off.

2.—ANTHYLLIS WEBBIANA, *Hook.* MR. WEBB'S KIDNEY VETCH.ENGRAVINGS.—*Bot. Mag. t. 3284; Swt. Brit. Flow. Gard. 2d ser. t. 292.*

SPECIFIC CHARACTER.—Herbaceous; covered with a silvery, silky down. Leaflets elliptic, acute, nearly equal; bracts palmate.

DESCRIPTION, &c.—This very pretty little plant is a native of the Peak of Teneriffe, whence it was introduced by Mr. Philip Barker Webb, to whom the floricultural world owes so many beautiful plants from the same quarter. It is very nearly allied to the common Kidney Vetch of Britain, but it differs in its long silky pubescence, which is so glossy as to give it a silvery hue at a little distance, particularly when the sun is shining on it. It is well adapted for rockwork, and thrives most in a sandy soil. It was introduced in 1830.

GENUS V.

TRIFOLIUM, *Lin.* THE CLOVER.*Lin. Syst.* DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx tubular, permanent, glandless, five-cleft; segments subulate. Carina shorter than the wings and vexillum. Stamens diadelphous. Legume small, hardly dehiscent, usually ovate, 1—2-seeded, shorter than calyx, and covered by it, rarely oblong, and containing three—four seeds, in which case it exceeds the calyx a little.

Herbs. Stipules adnate to the petioles. Leaves usually trifoliate, rarely with five leaflets. Flowers disposed in dense heads or spikes, bracteate, purple, white or cream-coloured. Petals in the greater part of the species joined together at the base. (*G. Don.*)

DESCRIPTION, &c.—The name of Clover is so associated in most minds with the clover of fields and meadows, that it seems difficult to imagine ornamental flowers belonging to the same genus. There are, however, several

species of *Trifolium* that are decidedly ornamental, as for example *T. incarnatum*, the Scarlet Clover, an annual species; and nearly all the perennial kinds. Most of the species are natives of Europe, and they are all hardy in British gardens. The name, *Trifolium*, alludes to the trifoliate leaf of the common clover.

1.—TRIFOLIUM CANESCENS, Willd. THE GREY CLOVER.

SYNONYME.—*T. pauciflorum*, Jaeg.

ENGRAVING.—Bot. Mag. t. 1168.

SPECIFIC CHARACTER.—Stems ascending, covered with adpressed hairs; leaflets obovate, emarginate, villous; stipules lanceolate-sub-

late; heads terminal, large, oblong, nearly sessile; calyx smooth; the segments lanceolate and pilose, dilated at the base, lowest one a little longer; corolla monopetalous, much longer than the segments. (*G. Don.*)

DESCRIPTION, &c.—The flowers, which are very long and greyish, grow in large, oblong, spike-like heads. The species is a native of America, and also of Hungary; it was first introduced in 1752, and again in 1806. It is quite hardy in British gardens.

2.—TRIFOLIUM OLYMPICUM, Hook. THE OLYMPIAN CLOVER.

ENGRAVING.—Bot. Mag. t. 2790.

SPECIFIC CHARACTER.—Stem erect, hairy; leaflets hairy, lanceolate-elliptic, entire; stipules subulate, sheathing; spikes of flowers oblong,

solitary; calyx hairy, with the lower tooth equal in length to the tube of the corolla; vexillum very long.

DESCRIPTION, &c.—This plant bears considerable resemblance to the preceding species; but the head of flowers is rather flame-shaped than oblong, and the flowers themselves are whiter; and when they are slightly coloured, they have rather a yellowish than a grey tinge. The leaflets are oblong, and distinctly marked with veins. The species is found wild on Mount Olympus, and in other parts of Greece; and it was introduced in 1810. It will grow in any common garden soil.

3.—TRIFOLIUM FIMBRIATUM, Lindley. THE FRINGED CLOVER.

ENGRAVING.—Bot. Reg. t. 1070.

SPECIFIC CHARACTER.—Stems prostrate, glabrous; leaflets oval, smooth, toothed, the teeth setaceous; heads of flowers on long peduncles; involucre shorter than the flowers, and are, as well as the

stipules, multifid; the segments awned; calyx turbinate, with the segments pungent, about the length of the tube of the corolla; aecies round, black. (*G. Don.*)

DESCRIPTION, &c.—This species is remarkable for its pretty little tufts of dark purple flowers, its leaves with dark red margins, and its fringed bracts, which all together make it quite unlike the common kinds of clover. It was found on the banks of the Columbia River, by Douglas, by whom seeds were sent home in 1826. Dr. Lindley observes of it, in the Botanical Register, "that it flowers in September and October, and seems well adapted for ornamenting rockwork."

4.—TRIFOLIUM UNIFLORUM, Lin. THE SINGLE-FLOWERED CLOVER.

SYNONYMES.—*T. Buxbaumii*, Stern.; *T. Vernum repens*, Burb.; *Melilotus cretica*, Tourne.; *Spica trifolia*, Alpin.

ENGRAVING.—Swi. Brit. Flow. Gard. 2d. ser. t. 200.

SPECIFIC CHARACTER.—Plant tufted, creeping, stems very short; leaflets three, ovate, acuminate, toothed, nerved; stipules sheathing,

ending each in a long acumen; flowers axillary, solitary, on short peduncles; calyx cylindrical, striated; the segments short, subulate, and nearly equal; corolla very long, much longer than the calyx; legume two-seeded; seeds ovoid, apiculated. (*G. Don.*)

DESCRIPTION, &c.—This clover is remarkable for producing its flowers singly, or in threes, and not in heads. The flowers themselves appear in May, and are large, with yellowish wings and keel, and a very large standard tipped with bright rose-colour; but there is a variety with white flowers. The leaves are of a clear lively green. The plant is quite dwarf, growing in tufts, and forming a mass of flowers; the brilliant rose-colour of those of this species contrasting agreeably with the lively green of the leaves. The plant is quite hardy, and is increased by

dividing the roots; it grows best in sandy soil, and is peculiarly adapted for rockwork. It is a native of the south of Europe, and was introduced in 1822.

5.—TRIFOLIUM REFLEXUM, *Lin.* THE BUFFALO CLOVER.

ENGRAVING.—Bot. Mag. t. 3471.

SPECIFIC CHARACTER.—Plant pilose; stems ascending; leaflets obovate, serrulated; stipules foliaceous, obliquely-cordate, acuminate; heads of flowers globose, axillary; flowers on long pedicels, at length

deflexed; calycine segments nearly equal, very narrow, one-nerved, nearly twice the length of the tube, but shorter than the corolla. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species has the flowers in heads, like those of the common clover, but very much larger. The flowers are pink and white, the standard being pink, and the wings and keel of a pure white. It is a native of Virginia and Mexico, and it was first introduced in 1794; it was, however, soon lost, and was not re-introduced till 1835, when it was sent by Mr. Drummond from Texas. It is quite hardy in the open air in Britain, and will grow in any common garden soil.

6.—TRIFOLIUM SPADICEUM, *Lin.* THE BAY-COLOURED CLOVER.

ENGRAVING.—Bot. Mag. t. 557.

SPECIFIC CHARACTER.—Stem erect, almost simple, slender; leaves stalked; leaflets oblong, ovate, sessile, denticulate; stipules leafy, narrow, acuminate; heads of flowers ovoid, on peduncles; vexillum

obcordate; calycine segments unequal; the lower ones long and pilose, the two upper ones small and glabrous; legume ovoid, compressed, one-seeded; seeds irregularly egg-shaped, bay-coloured; radiolo prominent.

DESCRIPTION, &c.—A very curious little plant, with delicate foliage and rich chestnut-brown spikes, crowned with golden yellow flowers. It is a native of most parts of Europe, but not of Great Britain, to which country it was introduced in 1778. It is quite hardy, and only requires to be planted in the open border. It is generally propagated by seeds, which it ripens in great abundance.

7.—TRIFOLIUM LUPINASTER, *Lin.* THE LUPINE-LIKE CLOVER, OR LUPINE TREFOIL.

SYNONYMS.—Lupinaster pentaphyllum, *Michx.*; Pentaphyllum Lupinaster, *Sal.*

ENGRAVING.—Bot. Mag. t. 879.

SPECIFIC CHARACTER.—Plant quite smooth; stems straight, branched; petioles wanting; leaflets five, linear-lanceolate, sharply toothed, mu-

ronate; stipules broad, membranous, acuminate; heads of flowers pedunculate, bractless; flowers umbellate; calyx campanulate, hardly nerved; the segments acute, longer than the tube, but shorter than the corolla; legume six-seeded. (*G. Don.*)

DESCRIPTION, &c.—This very singular plant produces its bright rose-coloured flowers in a kind of crest, which gives it a very singular appearance. It also differs from the other species in having five, and sometimes seven, leaflets instead of three; and in having a long fusiform root. It was introduced in 1763 from Siberia, and it has since been often lost and re-introduced, as it is very difficult to keep, from being only propagated by seeds, which seldom ripen. In other respects it is quite hardy.

GENUS VI.

PSORALEA, *Lin.* THE PSORALEA.

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Sepals five, joined together to the middle into a five-cleft, permanent calyx, with the tube usually beset with glands; the lobes acuminate, having the lower one a little more lengthened out than the others. Stamens ten, usually diadelphous;

the tenth one is sometimes connected with the others at the base. Legume length of calyx, valveless, one-seeded, sometimes ending in a beak. (*G. Don.*)

DESCRIPTION, &c.—The peculiarity of plants belonging to this genus consists in their being all more or less warted with glandular tubercles; and from this the genus takes its name, *Psoralea* signifying warty or scurfy.

Most of the species are Cape shrubs, but some are hardy perennials. The leaves are variable in the different species, but the stipules always adhere to the petioles. The flowers also vary in their disposition, and in their colour, being white, blue, or purple.

1.—PSORALEA MELILOTOIDES, *Michx.* THE MELILOT-LIKE PSORALEA.

SYNONYMS.—*P. Asphaltites, Sol.*; *Melilotus psoraloides, Nutt.*; *Trifolium psoraloides, Walt.*

ENGRAVING.—*Bot. Reg. t. 454.*

SPECIFIC CHARACTER.—Plant pubescent; leaves pinnately trifoliate;

leaflets lanceolate, glandular beneath; peduncles racemose, length of leaves; racemes or spikes linear; bracteas acuminate, longer than the calyx.

DESCRIPTION, &c.—The species is a hardy perennial, with long spike-like racemes of dark purple flowers, somewhat resembling those of *Hardenbergia Comptoniana*. The stem grows about a foot-and-a-half high, and the racemes of flowers are on long terminal peduncles. The species is a native of Virginia and Carolina, whence it was introduced in 1814. It is tolerably hardy, but is killed by severe frosts.

2.—PSORALEA PUBESCENS, *Balb.* PUBESCENT PSORALEA.

ENGRAVING.—*Bot. Reg. t. 968.*

SPECIFIC CHARACTER.—Leaves pinnately trifoliate; leaflets ovate-

oblong, pubescent, dotted on both surfaces; branches, petioles, and peduncles hairy; rather shorter than the leaves. (*G. Don.*)

DESCRIPTION, &c.—This very handsome plant requires protection during winter, but in summer it will flower freely in the open ground. The whole plant is covered with a dense pubescence, and the flowers, though small, are of a bright blue. It is a native of Lima, whence it was introduced in 1823.

3.—PSORALEA MACROSTACHYA, *Dec.* THE LONG-SPIKED PSORALEA.

ENGRAVING.—*Bot. Reg. t. 1769.*

SPECIFIC CHARACTER.—Leaves pinnately trifoliate, pubescent; leaflets ovate, mucronate; petioles scabrous from glands; peduncles

axillary, four times longer than the leaves; spikes cylindrical, and are, as well as the rachis, bracteas, and calyxes, very hairy.

DESCRIPTION, &c.—A handsome species, with dark purple flowers, ripening seed abundantly. A native of California, introduced in 1833. It is quite hardy, but grows too luxuriantly in rich soil.

4.—PSORALEA ORBICULARIS, *Lindl.* THE ROUND-LEAVED PSORALEA.

ENGRAVING.—*Bot. Reg. t. 1971.*

SPECIFIC CHARACTER.—Pubescent, with clavate and truncate glands intermixed. Leaves trifoliate, on long peduncles; leaflets sub-rotund,

oval. Flower head conical, peduncles very long, axillary. Bracts oblong, concave, and, as well as the calyx, hairy. Stem creeping.

DESCRIPTION, &c.—A hardy herbaceous plant, with a creeping stem, from which the flower-stalks rise about six inches high. It is a native of California, whence seeds were sent home by Douglas in 1833.

GENUS VII.

HOSACKIA, *Doug.* THE HOSACKIA.

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, five-cleft; wings about equal in length to the vexillum; keel beaked; style filiform, crowned

by a capitate stigma; legume cylindrical, or a little compressed, straight, smooth. (*G. Don.*)

DESCRIPTION, &c.—This genus has been formed from the genus *Lotus*, to which it is so very nearly allied as scarcely to be distinguished, except by professed botanists. The name of *Hosackia* was given in honour of Dr. Hosack, Professor of Botany at New York.

1.—HOSACKIA BICOLOR, *Doug.* THE TWO-COLOURED HOSACKIA.SYNONYME.—*Lotus pinnatus*, *Hook.*ENGRAVINGS.—*Bot. Reg.* t. 1257; and *Bot. Mag.* t. 2913.SPECIFIC CHARACTER.—Plant glabrous; flowers umbellate, bractless; leaves with seven—nine leaflets. (*G. Don.*)

DESCRIPTION, &c.—This plant, as it is represented in the *Botanical Register*, is decidedly yellow and white, both being distinctly and clearly marked; but in the *Botanical Magazine* the flowers are all yellow, part being rather fainter than the rest. The plant was found by Douglas on the banks of the Columbia, and introduced by him in 1823. It is quite hardy, and will grow in any common garden soil.

OTHER SPECIES OF HOSACKIA.

H. STOLONIFERA, *Lindl.*

The flowers are in clusters, and they are red and yellow, but neither colour is distinct. The species is a native of California, whence it was introduced in 1833. It is a good shrubby plant where any wall or other uninteresting object is to be hidden, as it grows rapidly, and soon forms a thick bush three feet high, and wide in proportion. In a botanical point of view it is interesting, from its embryo having sometimes three cotyledons. It flowers in June, and produces abundance of seeds in August; it also sends up numerous suckers from its stoloniferous roots.

GENUS VIII.

DALEA, *Michx.* THE DALEA.*Lin. Syst.* MONADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx five-cleft or five-toothed, sometimes stamens; vexillum short, free; stamens ten, monadelphous; legume beset with glands; wings and carina adhering to the tube of the ovate, one-seeded, shorter than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This genus, though possessing plants of no great beauty, is interesting, from having been the cause of the well-known flower, the Dahlia, having its name changed by some botanists to Georgina. The two names being, however, both differently spelled, and differently pronounced, the name Dabria has been restored to the original use. The name of Dalea was given to the present genus in honour of Mr. Thomas Dale, an English botanist of the last century.

1.—DALEA MUTABILIS, *Willd.* THE CHANGEABLE-FLOWERED DALEA.ENGRAVINGS.—*Bot. Mag.* t. 2486; and our *fig.* 6 in Plate 35.

SPECIFIC CHARACTER.—Erect, branched, glabrous; leaves with five—ten pairs of obovate or obovate leaflets; spikes of flowers cylindrical,

cal, at length much elongated, pedunculate; peduncles hispid just under the spike; calyx glabrous, striated with ten black nerves; bracteas ovate, terminated by a bristle, shorter than the calyx.

DESCRIPTION, &c.—A little half-hardy plant, which may be grown as a biennial in the open ground; but which becomes shrubby when kept in a greenhouse or stove. It is a native of Mexico, whence it was introduced in 1821.

OTHER SPECIES OF DALEA.

D. AUREA, *Nutt.*; PSORALEA AUREA, *Poir.*

A native of Upper Louisiana, with golden yellow flowers; introduced in 1811.

GENUS IX.

GALEGA, *Juss.* THE GOAT'S-RUE.*Lyn. Syst.* MONADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx with five subulate equal teeth. Vexillum obovate-oblong. Keel obtuse. Stamens monadelphous, having the tenth one concrete, with the others one half of its length. Style filiform, glabrous, crowned by a terminal dot-formed stigma. Legume rather terete, torulose, obliquely-striated. Seeds cylindrical. Smooth, erect, perennial herbs, with impari-pinnate leaves, ovate or lanceolate, somewhat sagittate stipules, and axillary, simple, many-flowered racemes. Flowers blue and white. (*G. Don.*)

DESCRIPTION, &c.—Hardy, robust-growing perennial plants, with showy flowers. The common species (*G. officinalis*) was formerly used in medicine, and it was said to have such an effect in increasing the quantity of milk in goats, that it was called Goat's Rue. The name of Galega refers to the same property. The genus was formerly a very extensive one, but there are now only four species, all of which are ornamental, though some are more so than others.

1.—GALEGA BILOBA, *Sweet.* TWO-LOBED LEAVED GOAT'S-RUE.ENGRAVING.—*Swt. Brit. Flow. Gard.* t. 159.

SPECIFIC CHARACTER.—Stem angularly striated, rather flexuous; leaves usually with five—eight pairs of oblong, silky, pubescent leaflets, which are mucronate and two-lobed at the apex; stipules ovate-lanceolate, acute, acutely-serrated, sagittate; flowers crowded; bracteas subulate; twice the length of the pedicels.

DESCRIPTION, &c.—A very handsome, robust-growing plant, with a profusion of rather small blue flowers. Several stems rise from three feet to five feet high, with numerous glaucous green leaves, which are two lobed at the apex, with a slender mucro or bristly point between the lobes. The species is a native of the south of Europe, whence it was introduced about 1823.

2.—GALEGA PERSICA, *Pers.* THE PERSIAN GOAT'S-RUE.ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 244; and our *fig. 3* in Plate 35.

SPECIFIC CHARACTER.—Leaves usually with five pairs of ovate-oblong, rather retuse, mucronate, glaucescent leaflets; stem angular, flexuous; stipules narrow-lanceolate, sagittate; bracteas linear-subulate, longer than the pedicels. (*G. Don.*)

DESCRIPTION, &c.—A tall, robust-growing plant, with numerous branching stems rising from the same root, and a profusion of rather large white flowers, which are slightly fragrant. The species is a native of Persia, whence it was introduced in 1816. It is quite hardy in British gardens, where it will grow in any common garden soil; and it is easily propagated by seeds, which it ripens in great abundance. It is very nearly allied to *G. biloba*, and, like it, takes up too much room for a small garden.

3.—GALEGA ORIENTALIS, *Lam.* THE ORIENTAL GOAT'S-RUE.SYNONYME.—*G. montana*, *Schultes.*ENGRAVINGS.—*Bot. Reg.* t. 326; *Bot. Mag.* t. 2192.

SPECIFIC CHARACTER.—Leaflets ovate, acuminate, smooth; stipules broad-ovate; racemes longer than the leaves; legumes pendulous; roots creeping. (*G. Don.*)

DESCRIPTION, &c.—A handsome plant, with small dark purple flowers, of much more delicate habit of growth than the preceding species. It is a native of the Levant, where it was first discovered by Tournefort, and whence it was introduced by Sir Joseph Banks in 1801. It is also found in the forests on Mount Caucasus. It is quite hardy, and will grow in any common garden soil. The stem is about four feet high.



1 *Oxytropis Lambertii* - 2 *Hedysarum roseum* - 3 *Galega borealis* - 4 *Coronilla varia*
 5 *Astragalus racemosus* - *Lathyrus pratensis*

OTHER SPECIES OF GALEGA.

G. OFFICINALIS, *Lin.*

A native of Spain, with small flowers, introduced before 1598. There are two kinds, one with blue and one with white flowers.

GENUS X.

OXYTROPIS, *Dec.* THE OXYTROPIS, OR MOUNTAIN MILK VETCH.*Lin. Syst.* DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx five-toothed; keel of corolla ending in an exerted mucrone on the back of the apex. Stamens diadelphous. Legume bilocular, or half bilocular, in consequence of the upper suture being very much bent in. (*G. Don.*)

DESCRIPTION, &c.—The species constituting this genus were formerly included in that of *Astragalus*, the Milk Vetch, but were separated by Professor De Candolle, who gave his new genus the name of *Oxytropis*, in allusion to the sharp-pointed keel of the flowers. The species are all hardy; several of them, of which *O. montana* is the type, grow in low close tufts, without stems, and are therefore suitable for rockwork; some others have erect stems, with both the leaves and flowers in whorls; and the rest have the stem erect, but the leaves only in pairs instead of being in whorls.

1.—OXYTROPIS MONTANA, *Dec.* THE MOUNTAIN OXYTROPIS.

SYNONYMS.—*Astragalus montanus*, *Lin.*; *Phaca montana*, *Crantz.*

ENGRAVING.—*Bot. Mag.* t. 483.

SPECIFIC CHARACTER.—Plant almost stemless, villous, the hairs on the petioles and scape spreading; leaflets elliptic-lanceolate; scapes a

little longer than the leaves; racemes short; bracteas one half shorter than the calyxes; legumes erect, terete-oblong, villous, acuminate by the style, half bilocular. (*G. Don.*)

DESCRIPTION, &c.—This species, though included in the genus *Oxytropis*, from the shape of the flower, bears more resemblance to the common Milk Vetch in its habit of growth and in its leaves, which are pinnate, with fourteen or fifteen pairs of leaflets, which are small and sharply pointed. The species is common on all the Alps of the South of Europe, and it was introduced in 1581. It will grow in any common garden soil, but it is most suitable for rockwork.

2.—OXYTROPIS LAMBERTI, *Pursh.* LAMBERT'S MOUNTAIN MILK VETCH.

SYNONYME.—*Astragalus Lambertii*, *Spreng.*

ENGRAVINGS.—*Bot. Mag.* t. 2147; *Bot. Reg.* t. 1054; and our *fig. 1*, in Plate 35.

SPECIFIC CHARACTER.—Plant stemless, silky and pilose in every

part; leaflets lanceolate, acute, rather remote; scape rather longer than the leaves; flowers spicate or capitate; bracteas lanceolate-linear rather shorter than the silky calyx. (*G. Don.*)

DESCRIPTION, &c.—This is a very beautiful species, from the silkiness of the back of the leaves and stalks. The flowers are also large, and of a very dark purple; they appear in May and June. The plant is one of the very few belonging to the genus that are natives of North America; by far the greatest number of the species being found wild in Siberia. It is quite hardy, and is better suited for a border flower than the preceding species, as it is larger in all its parts. It was introduced in 1818, and it is generally propagated by seeds, which it ripens sparingly.

3.—OXYTROPIS PILOSA, *Dec.* THE DOWNY MOUNTAIN MILK VETCH.

SYNONYMES.—*Astragalus pilosus*, *Lin.*; *A. villosus*, *Amm.*; *A. erectus*, *Hall.*; *Cicer montanum*, *Bauh.*

ENGRAVING.—*Bot. Mag.* t. 2483.

SPECIFIC CHARACTER.—Stem erect, beset with soft hairs, as well as

the rest of the plant; leaflets lanceolate, acute; peduncles axillary, longer than the leaves; spikes ovate-oblong; legumes erect, terete, hooked at the apex, villous. (*G. Don.*)

DESCRIPTION, &c.—This is one of the erect species with the leaves in pairs. The flowers are green, and consequently not showy, though they are pretty when closely examined. The plant is a native of Siberia, whence it was introduced in 1732.

OTHER SPECIES OF OXYTROPIS.

Many other species are mentioned in books, though I have not given any details respecting them, as they are rarely seen in gardens.

GENUS XI.

ASTRAGALUS, *Lin.* THE MILK VETCH.

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx five-toothed. Keel of flowers obtuse. Stamens diadelphous. Legume bilocular, or half bilocular, from the upper suture being bent in so much. (*G. Don.*)

DESCRIPTION, &c.—The species belonging to this genus are extremely numerous, but they bear a striking resemblance to each other in general appearance and the shape of the flowers. The name of *Astragalus* is generally said to signify Milk Star; but this meaning does not seem in any way applicable to the plants. Others derive the name of *Astragalus* from a Greek word, signifying vertebræ, and others from a kind of dice; but these explanations are as inapplicable as the other.

1.—ASTRAGALUS PROCUMBENS, *Hook.* THE PROCUMBENT MILK VETCH.

ENGRAVINGS.—*Bot. Mag.* t. 3263; and our *fig.* 5 in Plate 35.

SPECIFIC CHARACTER.—Plant clothed with hirsute tomentum in every part; stems prostrate, branched; stipules cœncrete; leaves with

11-14 pairs of elliptic, retuse leaflets; peduncles racemose, longer than the leaves; wings of flowers not half so long as the keel; legumes, in an immature state, linear, hairy, and reflexed. (*G. Don.*)

DESCRIPTION, &c.—This very pretty delicate-looking plant is a native of South America, whence it was introduced in 1831. It appears to require a slight protection during winter.

2.—ASTRAGALUS VESICARIUS, *Lin.* THE BLADDER MILK VETCH, OR WHITE ITALIAN MILK WORT.

SYNONYMES.—*A. albidus*, *Waldst. et Kit.*; *A. dealbatus*, *Pall.*; *A. glaucus*, *Bieb.*

ENGRAVING.—*Bot. Mag.* t. 3268.

SPECIFIC CHARACTER.—Plant covered with a silky pubescence. Leaves with five or seven pairs of elliptic leaflets. Peduncles much longer than the leaves. Calyx bladderly. Legumes hairy, longer than the calyx.

DESCRIPTION, &c.—This is a dwarf species, but with a long descending root, so that it requires a loose deep soil. It is a native of sandy wastes in the South of France, Russia and Hungary, whence it was introduced in 1637. The flowers are produced in tufted heads, and are of a very rich deep purple, becoming blue when they fade; and though the name of White Italian Milk Vetch, and some of the botanic names applied to this species, have induced some persons to think that the flowers are white in a wild state, the names implying whiteness appear only applied to the silky down of the leaves and stems.

OTHER SPECIES OF ASTRAGALUS.

A. SUCCULENTUS, *Spreng.*; *Bot. Reg.* t. 1324.

A very beautiful species, with pinkish lilac flowers; found by Dr. Richardson in Arctic America, and introduced in 1827. It is a decumbent plant, quite hardy, but requiring peat earth.

A. LINEARIFOLIUS, *Pers.*; A. ONOBRYCHIS, *var. ANGUSTIFOLIUS*, *Dec.*; A. TENUIFOLIUS, *Willd.*; *Swt. Brit. Flow. Gard.* t. 73.

A handsome species, with dark reddish purple flowers, and leaves with twelve or thirteen pairs of leaflets; the stem is erect, and the plant grows about two feet high, the stem and branches being covered with a dark brown or black down. The species is a native of Siberia, and it was introduced in 1780. It will grow in any common garden soil.

A. CARYOCARPUS, *Dec.*; A. CRASSICARPUS, *Fras.*; A. CARNOSUS, *Nutt.*; *Bot. Reg.* t. 176.

This species is remarkable for its pods, which resemble small walnuts; but it is more curious than beautiful, as the flowers have a pale, faded appearance. It is a native of Louisiana, whence it was introduced in 1811.

A. STIPULATUS, *Don*; *Bot. Mag.* t. 2380.

A native of Nepal; introduced in 1821. A tall weedy plant, with small, dingy flowers.

A. MONSPESSULANUS *Lin.*; *Bot. Mag.* t. 375.

A pretty little dwarf plant, with rather large pinkish flowers. A native of the south of France, where it grows in great abundance on the rocks near Montpellier. It was introduced by Dr. Pitcairn in 1776. It is very suitable for rockwork, or growing in a pot, as its flowering stems will hang down to a considerable length; but it is not at all fit for growing in a border, as the flowers lie on the ground, and get dirty and disfigured by the first shower of rain. It is propagated by seeds, or cuttings of the stem, which strike freely; but it is generally killed by any attempt to divide the root.

A. BRACHYCARPUS, *Bieb.*; *Bot. Mag.* t. 2335.

The flowers are reddish, and resemble those of *A. monspessulanus*, but the flower-stem is more erect, and the leaflets are rounder. A native of Mount Caucasus, introduced in 1820. It is propagated by seeds, and forms a very pretty little border-plant. The specific name signifies short-podded, and alludes to the pod being shorter than the calyx.

GENUS XII.

CORONILLA, *Dec.* THE CORONILLA, OR HATCHET VETCH

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, short, 5-toothed, the two superior teeth approximate, and joined together higher up than the rest. Claws of petals usually longer than the calyx. Carina acute. Stamens diadelphous. Legume nearly ternate, slender, at length separating into oblong 1-seeded joints. Seeds ovate or cylindrical. (*G. Don.*)

DESCRIPTION, &c.—Most of the species are shrubs, but there are several hardy perennials belonging to the genus, and one or two annuals. The name of Coronilla, signifies crown-flower, and alludes to the flowers being produced in tufts or crowns on the upper part of the stem.

1.—CORONILLA IBERICA, *Bieb.* THE IBERIAN CORONILLA OR EASTERN HATCHET VETCH.SYNONYME.—*C. orientalis*, *Mill.*ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 25; *Lodd. Bot. Cab. t.* 789; and our *fig. 4* in Plate 35.

SPECIFIC CHARACTER.—Plant prostrate, glabrous. Stipules distinct,

membranous, orbicular, denticulated. Leaflets obcordate, ciliated. Umbels seven or eight flowered. Legumes tetragonal, incurved. (*G. Don.*)

DESCRIPTION, &c.—A showy plant, with large golden yellow flowers and pinnate leaves. It has a creeping root, but the stem is ascending. It is a native of Asia Minor, and was introduced about 1822. It is quite hardy, and thrives so well in good soil as soon to become troublesome. Its roots indeed spread so far, as to injure those of every plant near them, and to render it extremely difficult to get rid of the plant when it has once been introduced.

OTHER SPECIES OF CORONILLA.

C. MINIMA, *Lin.*; *Bot. Mag.* t. 2179.

A hardy plant, with very small clusters of yellow flowers. A native of the south of Europe; introduced in 1658. Not very ornamental.

C. VARIA, *Lin.*; *Bot. Mag.* t. 258.

A climbing plant, which if not supported will trail on the ground; with purple flowers. It is a native of Germany, and was introduced in 1640. It is quite hardy, but grows best in a dry soil, and the colour of the flowers varies from dark purple to white, according to the situation. It is, however, a troublesome plant in a garden, from the hold its creeping roots take of the soil, and the difficulty there is in eradicating it when it has once obtained possession.

C. CORONATA, *Lin.*; *C. MONTANA*, *Scop.*; *Bot. Mag.* t. 907.

This is properly herbaceous, as though the stem becomes woody at the base it perishes every year, though the root survives without any protection, unless the season should be very wet. It is a native of the mountains of Southern Europe, and was introduced in 1776. It is generally propagated by seeds.

There are several other herbaceous species, many of which have purple or white flowers, but they are rarely seen in British gardens.

GENUS XIII.

HEDYSARUM, *Dec.* THE FRENCH HONEYSUCKLE.*Lin. Syst.* DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx 5-cleft; the segments linear-subulate, and nearly equal. Corolla with a large vexillum and obliquely truncate keel, which is much longer than the wings. Stamens diadelphous, having the stamiferous tube abruptly inflected. Legume

constantly of numerous, flat, orbicular or lenticular, regular, 1-seeded joints which are connected together in the middle, and therefore the sutures are convex on both sides. (*G. Don.*)

DESCRIPTION, &c.—All the species of this genus are very handsome, and well deserving of cultivation. The name of Hedysarum, is said to be derived from two Greek words signifying sweet perfume, a name which does not at all apply to the flowers. The species belonging to this genus are easily known by the legumes being jointed, and the flowers are always either pink, white, or purple.

1.—*HEDYSARUM CORONARIUM*, *Lin.* THE COMMON FRENCH HONEYSUCKLE,
OR GARLAND FLOWER.

SYNONYME.—*H. clypeatum*, *Ger.*

SPECIFIC CHARACTER.—Stems diffuse. Leaves with three or five pairs of elliptic or roundish leaflets, which are clothed with pubescence beneath, and on the margins. Spikes or racemes of flowers, ovate, crowded; wings of flower twice the length of the calyx. Legumes glabrous, with 2—5 orbicular prickly joints. (*G. Don.*)

DESCRIPTION, &c.—This species, though it is merely an ornamental plant in our gardens, in Italy is used for forage. In Calabria, its native country, it grows four feet high, and affords excellent nourishment to horses and cattle both green and made into hay, and it is used for the same purposes in Spain. In England it makes a handsome border flower, and it has been in cultivation since 1596.

2.—*HEDYSARUM ROSEUM*, *Steph.* ROSE-COLOURED FRENCH HONEYSUCKLE.

ENGRAVING.—Our *fig. 2* in Plate 35.

SPECIFIC CHARACTER.—Stem erect; leaves with 6—8 pairs of oblong-lanceolate leaflets, which are clothed with adpressed villi on both surfaces; when young they are canescent beneath. Spikes of flowers oblong or ovate, pedunculate; vexillum emarginate, shorter than the carina; wings length of the calyx; legumes articulated, pubescent, reticulately veined. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Siberia, whence it was introduced in 1803. It is quite hardy in British Gardens.

3.—*HEDYSARUM TAURICUM*, *Pall.* THE TAURIAN FRENCH HONEYSUCKLE.

SYNONYMS.—*H. roseum*, *Sims*; *H. fruticosum*, *Hobl.*

ENGRAVING.—*Bot. Mag.* t. 996.

SPECIFIC CHARACTER.—Stem erect; leaves with four or six pairs of lanceolate-linear leaflets, which are clothed with adpressed pubescence beneath. Spikes of flowers ovate. Vexillum emarginate, longer than the wings, but shorter than the keel; joints of legume reticulately veined, horny. (*G. Don.*)

DESCRIPTION, &c.—This species closely resembles the last, and is frequently sold for it, but the flowers are of a much more brilliant colour. The standard is of a bright rose-colour, and the keel the richest and purest carmine, while the leaves are quite glaucous. It is a native of Mount Caucasus, and was introduced in 1804. It is quite hardy, but will not live many years, and if the seeds are sown in March or April it will flower the same year, that is, about July. It grows best in calcareous soil, and the flowers are of a deeper colour in soils of that nature than in any others. It grows from six inches to a foot high.

OTHER SPECIES OF *HEDYSARUM*.

H. HUMILE, *Lin.*

A dwarf biennial species, with purplish pink flowers, which grows wild on sandy hills in the south of France. Introduced in 1640.

H. CARNOSUM, *Desf.*

The stems of this species are decumbent, and the leaves thick and fleshy. The flowers are rose-coloured, and in spreading racemes. The species is a native of Barbary, whence it was introduced in 1820. This is a most desirable species, but it is seldom to be met with.

H. VARIUM, *Willd.*

This species is a native of Armenia, and has yellowish flowers. It was introduced in 1820.

H. LASIOCARPUM, *Leds.*

The flowers are dark purple, and the pods quite woolly: a native of Siberia on the Altaian Mountains.

H. RUTIDOCARPUM, *Dec.*; H. IBERICUM, *Bieb.*; H. ALTAICUM, *Fisch.*; H. CRETACEUM, *Fisch.*;
and H. CONSANGUINEUM, *Dec.*,

Appear nearly allied to this species, and are perhaps only varieties of it.

H. OBSCURUM, *Lin.*; *Bot. Mag.* t. 282.

This species has a creeping root, and a loose raceme of pendulous pinkish flowers. There is a variety, the flowers of which are white. Introduced in 1640.

H. BRACHYSEMUM, *G. Don.*

This species is nearly allied to the last, and is probably only a variety. Introduced in 1817.

H. ALPINUM, *Lin.*

This is a tall showy plant, with dark purple pendulous flowers in an erect raceme. It is a native of Siberia; introduced in 1793. It is very ornamental, and flowers from May till August.

H. CAUCASICUM, *Bieb.* H. SIBERICUM, *Poir.*,

Are only varieties of this species.

GENUS XIV.

LATHYRUS, *Dec.* THE EVERLASTING PEA.

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, 5-cloft, the two superior lobes shortest. Corolla papilionaceous. Stamens diadelphous. Style complanate, dilated at the apex, villous or pubescent in front. Legumes

oblong many-seeded, 2-valved, 1-celled. Seeds globose or angular.	(<i>G. Don.</i>)
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DESCRIPTION, &c.—This genus is well known from the beautiful annual sweet peas that are so common in our gardens, and the splendid perennials allied to the Everlasting Pea. The name of *Lathyrus* signifies something exciting, and it alludes to the real or supposed qualities of the seeds. The species are all hardy or half hardy climbing plants, with very showy pea-flowers and they will all grow in any common garden soil. Most of them seed freely, but all the perennials may be readily increased by dividing the root.

1.—LATHYRUS MAGELLANICUS, *Lam.* LORD ANSON'S PEA.

SYNONYMES.— <i>L. Armitageanus, Westc.</i> ; <i>Pisum americanum, Michx.</i> ENGRAVINGS.— <i>Swt. Brit. Flower Gard.</i> , 2d ser. t. 344; <i>Bot. Gard.</i> t. 526; <i>Flor. Cab.</i> t. 110; and our <i>fig. I</i> in Plate 36. SPECIFIC CHARACTER.—Plant glabrous and blackish; stems a little	branched, tetragonal, but not winged; leaves with one pair of ovate or ovate-oblong leaflets; stipules broad, cordately sagittate, broader than the leaves; tendrils trifid; peduncles long, 3—4-flowered; legumes unknown.
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DESCRIPTION, &c.—This splendid plant was introduced by the cook on board Lord Anson's ship, the *Centurion*, who gathered the seeds when that vessel touched at the Straits of Magellan in 1744. Lord Anson presented some plants of it to the Botanic Garden, Chelsea, where it was grown for several years by the celebrated Miller, author of *Miller's Dictionary*, who was curator there. It is quite hardy, only requiring a pure air; but it looks best trained against a wall. As it is a maritime plant, it is said to be improved by putting a little salt occasionally in the water given to it. It is suffruticose at the base, and evergreen. It may be increased by seeds or division of the root, but the usual way of propagating it is by cuttings, which strike freely.





1 *Lathyrus magellanicus* — 2 *Lathyrus grandiflorus* — 3 *Platyphylus cyanea* — 4 *Orobus hirsutus*.
 5 *Lathyrus hirsutus* — 6 *Lathyrus atropurpureus* — 7 *Orobus aurantius* — 8 *Spurium tuberosum*.



2.—LATHYRUS LATIFOLIUS, *Lin.* COMMON EVERLASTING PEA.

ENGRAVING.—Eng. Bot. t. 1108; 2d ed. t. 1005.

SPECIFIC CHARACTER.—Plant quite glabrous; stems winged; leaves with one pair of elliptic, rather glaucous, 3—5-nerved, obtuse, and mucronate leaflets; stipules broad, ovate, semi-sagittate; peduncles many-flowered, longer than the leaves; legumes long, compressed, reticulated lengthwise. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species, if not a native of Britain, has been so long cultivated in this country as to be almost naturalised. It is quite hardy, and has bright rose-coloured flowers, of which bees are very fond, and which yield abundance of honey. It is a most valuable plant, as it will grow in any soil and situation; and its flowers, when produced in the shade, are of as brilliant a colour as those which have expanded in the sunshine. It is thus very useful for arbours, as the flowers of most other climbing plants which hang down inside are very apt to be pale. We had one at Bayswater, which climbed up a mulberry-tree, and pushing its flowers through the branches, looked like a giant nosegay. The only objection is, the flowers are not fragrant.

3.—LATHYRUS GRANDIFLORUS, *Sims.* LARGE-FLOWERED EVERLASTING PEA, OR PERENNIAL SWEET PEA.

ENGRAVINGS.—Bot. Mag. 1938; and our *fig.* 2 in Plate 36.

SPECIFIC CHARACTER.—Hairy; stems tetragonal, winged; leaves with one pair of large, ovate, obtuse, waved leaflets; stipules small, semi-sagittate, lanceolate; peduncles 2—3-flowered, longer than the leaves; teeth of calyx acute, longer than the tube; legumes long, linear, tuberculous. (*G. Don.*)

DESCRIPTION, &c.—One of the handsomest of our climbing perennials. The flowers are as large and as brilliant as the finest and largest sweet pea; but they are destitute of fragrance. It is a native of the south of Europe, where it grows freely on hedges and bushes. It is particularly abundant in Sicily, at Palermo, and on Mount Etna. In England it will grow in any garden soil, and in fact, when it has once taken possession of the soil, it is rather troublesome, on account of its creeping root, which it is very difficult to eradicate. In our little garden it has become quite a weed. It was introduced in 1814. It is generally propagated by dividing the root, as plants raised from seeds will not flower the first year.

3.—LATHYRUS GRANDIFLORUS, *Sims.* THE LARGE-FLOWERED EVERLASTING PEA, OR PERENNIAL SWEET PEA.

SYNONYME.—*L. retundifolius* var. *ellipticus*, *Ser.*

ENGRAVINGS.—Swi. Brit. Flow. Gard., 2d ser. t. 333; and our *fig.* 5 in Plate 36.

SPECIFIC CHARACTER.—Plant quite glabrous. Stems much branched. Leaves with one pair of elliptic, seven-nerved, mucronate leaflets. Stipules linear, acuminate, entire. Peduncles many-flowered, much larger than the leaves. Calycine teeth lanceolate, acuminate. Legumes oblong, many-seeded, glabrous.

DESCRIPTION, &c.—This species is well adapted for small gardens, as it does not grow to so large a size as any of the other kinds of Everlasting Pea. The flowers are of a rich deep crimson, but they die off a bright blue; they are about the size of those of the common Everlasting Pea, *L. latifolius*. It is a native of Georgia, and it was introduced in 1822. It will grow in any common garden soil and open situation, and it is increased by dividing the roots, or by seeds, which it ripens in abundance.

OTHER SPECIES OF LATHYRUS.

L. INTERMEDIUS, *Wallr.*

A plant with rose-coloured flowers, a native of Germany; introduced in 1820.

L. PRATENSIS, *Lin.*

A British species, with yellow flowers; sometimes called the Yellow Vetchling.

L. TUBEROSUS, *Lin.*; *Bot. Mag.* t. 111.

A very pretty species, with pale pink flowers, and brown tuberous roots, which are eaten in Holland. Gerard calls it the Pea Earth-nut. It was introduced before 1596.

L. ROSEUS, *Stev.*

Very like the preceding species; but with the flowers of a dark rose-colour. A native of Iberia; introduced in 1822.

L. PISIFORMIS, *Lin.*

Flowers purple. A native of Europe; introduced in 1795.

L. CALIFORNICUS, *Doug.*; *Bot. Reg.* t. 1144.

The flowers are of a deep crimson, when in the bud, but they afterwards become purple, the keel being of a somewhat lighter colour than the standard. The plant is of a robust habit, with creeping roots. It grows rapidly in peat soil, and in a sheltered situation. It is a native of California, whence it was introduced in 1826.

L. MUTABILIS, *Swi., Brit. Flow. Gard.* t. 194.

The flowers are of a purplish pink, striped with dark purplish lines, afterwards changing to a brownish green. More curious than beautiful. A native of Siberia; introduced in 1825.

L. VENOSUS, *Swi. Brit. Flow. Gard.* 2d ser. t. 37.

A very beautiful species, the flowers of which have a dark purple standard, and pure white wings and keel. The leaves are strongly veined on the lower side. It is a native of North America, and was introduced in 1823.

L. DECAPHYLLUS, *Pursh.*; *Bot. Mag.* t. 3123.

The flowers are small, purple, and not very handsome, but the leaves have from four to six pairs of leaflets. A native of North America; introduced in 1827.

L. MYRTIFOLIUS, *Muhl.*

A native of North America, with small red flowers; introduced in 1822.

L. POLYMORPHUS, *Nutt.*

A native of the banks of the Missouri; introduced in 1824.

L. HETEROPHYLLUS, *Lin.*

A native of Europe, at the foot of mountains. Flowers large, with the standard and wings pink, and the keel white. Introduced in 1731.

GENUS XV.

OROBUS, *Tourne.* THE BITTER VETCH.*Lin. Syst.* DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, five-cleft, the two superior lobes shortest. Corolla papilionaceous. Stamens diadelphous. | Style slender, linear, villous at the apex. Legume cylindrical, oblong, one-celled, two-valved, many-seeded. Seeds with a linear hylum. (*G. Don.*)

DESCRIPTION, &c.—This genus consists of very handsome hardy plants of easy culture. The name of *Orobus* signifies to excite an ox, but it is not known why it was applied to this genus. Most of the species are hardy perennials.

1.—OROBUS LATHYROIDES, *Lin.* THE LATHYRUS-LIKE BITTER VETCH.

ENGRAVING.—Bot. Mag. t. 2098.

SPECIFIC CHARACTER.—Plant smoothish. Leaflets ovate, mucronate, with divaricate nerves. Stipules semi-sagittate, a little toothed,

smaller than the leaflets. Peduncles many-flowered, axillary, about equal in length to the leaves. Calycine teeth shorter than the tube. Legumes compressed, glabrous. Two or three-seeded. (*G. Don.*)

DESCRIPTION, &c.—This species has a great number of small blue flowers crowded together, several racemes together; with broad shining leaflets, and black roots. A native of Siberia; introduced in 1758.

2.—OROBUS FISCHERI, *Swt.* PROFESSOR FISCHER'S OROBUS.

ENGRAVING.—Swt. Brit. Flow. Gard. t. 289.

SPECIFIC CHARACTER.—Stem tetragonal, almost simple, smoothish. Leaflets linear, bluntish, mucronulate, nerved lengthwise, rather silky

beneath. Stipules linear, acute, a little toothed, with one auricle at the base. Racemes pedunculate, many-flowered. Flowers secund. Legumes reticulately veined, six or seven seeded. (*G. Don.*)

DESCRIPTION, &c.—This species closely resembles *O. atropurpureus* in its flowers, but its leaves are somewhat different. It is a native of Siberia, whence it was introduced in 1827.

3.—OROBUS HIRSUTUS, *Lin.* THE HAIRY OROBUS, OR BITTER VETCH.

SYNONYME.—*O. laxiflorus*, *Desf.*

ENGRAVINGS.—Bot. Mag. t. 2845; and our *fig.* 4 in Plate 36.

SPECIFIC CHARACTER.—Plant hairy; leaflets ovate, acute, with parallel nerves; stipules unequally sagittate, lanceolate, about the size

of the leaflets; racemes axillary, few-flowered, longer than the leaves; calycine segments nearly equal, setaceous-subulate, much longer than the tube, but much shorter than the corolla; legume compressed, hairy. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this species are much larger than those of most of the other species of the genus. The leaves have each a single pair of leaflets, and the stipules are very large. The pods are very small, and hairy; indeed the whole plant is covered with soft hairs, and hence the specific name. The species is a native of the Levant, and the whole of the provinces near Mount Caucasus, whence it was introduced in 1822. It is quite hardy; and, as it ripens its seeds perfectly, it is generally propagated by them. It flowers in May.

4.—OROBUS VERNUS, *Lin.* SPRING BITTER VETCH.

ENGRAVING.—Bot. Mag. 521.

SPECIFIC CHARACTER.—Stem simple, flexuous; leaflets ovate, lanceolate, nerved lengthwise; stipules semi-sagittate. Peduncles many-

flowered, shorter than the leaves; flowers secund, nodding; legumes reticulately veined, six—seven-seeded. Style jointed. Seeds roundish, smooth.

DESCRIPTION, &c.—This species has pretty little flowers, which are of a reddish purple when they first expand, but which turn blue as they fade. The leaves have generally three pair of leaflets, which are oval, and drawn out to a long point. The species is a native of Switzerland and Germany, generally in groves. It was introduced in 1629. It is hardy, but it seldom ripens seeds in this country, as its flowers are produced in April, when they are frequently injured by spring frosts.

5.—OROBUS AURANTIUS, *Stev.* ORANGE-COLOURED BITTER VETCH.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 198; and our *fig.* 7 in Plate 36.

SPECIFIC CHARACTER.—Plant pilose; stems simple; angular; leaves with 5—6 pairs of lanceolate, bluntish leaflets, with diverging nerves;

peduncles elongated, shorter than the leaves; calyx pilose, with unequal teeth, four very short and one very long; legumes pedicellate. (*G. Don.*)

DESCRIPTION, &c.—A tall slender plant, with five or six pair of broad smooth leaflets, which are the same colour on both sides, and are attenuated at both ends. The flowers are yellow, tinged with orange. The species is a native of the western regions of Caucasus, whence it was introduced in 1818. It is quite hardy, and flowers

in June and July. It should be grown in a loamy soil, and it is increased by dividing the roots or by seeds, though it ripens them but sparingly. The flowers are distinguished from those of *O. luteus*, which they resemble, by their darker colour, and the very unequal teeth of the calyx.

6.—OROBUS ATROPURPUREUS, *Desf.* THE DARK PURPLE OROBUS.

SYNONYMES.—*O. siculus*, *Raf.*; *O. Rafinesquii*, *Prest.*

ENGRAVINGS.—*Bot. Reg.* t. 1763; and our *fig.* 6 in Plate 36.

SPECIFIC CHARACTER.—Stem nearly simple; striated. Leaves with

from one to several pair of linear-acuminate, glabrous leaflets. Stipules semi-sagittate, somewhat one-toothed. Peduncles longer than the leaves. Racemes dense, secund, many-flowered; corollas elongated.

DESCRIPTION, &c.—This very elegant species is remarkable for the very rich colour of its flowers and their singular disposition. It is a native of Algiers, Sicily, and the loamy meadows of Eastern Calabria. It flowers in May. It was introduced in 1826; and it is quite hardy in British gardens.

OTHER SPECIES OF OROBUS.

O. VARIEGATUS, *Dec.*, *Swt. Brit. Flow. Gard.*, 2d ser. t. 28.

This species bears considerable resemblance to *O. atropurpureus*.

O. FORMOSUS, *Stev.*

Flowers about the size of those of *O. vernus*, but of a rich dark purple. A native of Caucasus; introduced in 1818.

O. ALPESTRIS, *Waldst. et Kit.*

Flowers purple; the standard is veined with crimson, fading to blue. A native of Hungary; introduced in 1817.

O. MULTIFLORUS, *Sieb.*

A native of Italy, introduced in 1820. The flowers are of a pale red.

O. VICIOIDES, *Dec.*

Flowers yellow. A native of Carniola; introduced in 1819.

O. LUTEUS, *Lin.*

Flowers varying from orange to pale yellow. Found in mountainous places throughout the Continent of Europe; introduced in 1759.

O. TOURNEFORTII, *Lap.*

Flowers purple, with the wings and keel shaded off to white. A native of the Pyrenees; introduced in 1820.

O. OCHROLEUCUS, *Waldst. et Kit.*

A native of Hungary, with cream-coloured flowers; introduced in 1816.

O. NIGER, *Lin.*

A British species with purple flowers. The whole plant turns black in drying.

O. JORDANI, *Tenore*

A native of Italy, with blue flowers; introduced in 1830.

O. HUMILIS, *Ser.*

A dwarf plant, with purple flowers. A native of Dahuria; introduced in 1825.

O. TUBEROSUS, *Lin.*

A native of Britain, with changeable flowers and tuberous roots.

O. DIVARICATUS, *Lap.*

A native of the Pyrenees, with purplish spreading flowers; introduced in 1816.

O. PYRENAICUS, *Lin.*

A native of the Pyrenees, with large rich dark purple flowers, only one or two together; introduced in 1622.

O. VARIUS, *Sal., Bot. Mag. t. 675.*

A native of Italy; introduced in 1759. The flowers have the standard rose-coloured, and the heel and wings yellowish.

O. CANESCENS, *Lin.*

A beautiful species with greyish leaves, and the flowers white, tinged with blue. A native of the Pyrenees; introduced in 1816. There are several varieties of this kind, which are made separate species by some authors.

O. ALBUS, *Lin., Swt. Brit. Flow. Gard. t. 22.*

There are several varieties of this species, all with white flowers. The species is a native of Hungary; introduced in 1794.

GENUS XVI.

PLATYSTYLIS, *Sweet.* THE PLATYSTYLIS.*Lin. Syst.* DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, five-cleft, the two upper lobes shortest. Corolla papilionaceous. Stamens diadelphous. Style broad, spatulate, villous at the apex. Legumes oblong, many-seeded, seeds nearly globose. (*G. Don.*)

DESCRIPTION, &c.—This genus has been separated from *Orobus*, on account of the breadth of its style, as signified in the name.

1.—PLATYSTYLIS CYANEA, *Sweet.* BLUE-FLOWERED PLATYSTYLIS.

SYNONYME.—*Orobus cyaneus*, *Stev.*

ENGRAVING.—*Swt. Brit. Flow. Gard. t. 230*; and our *fig. 3* in Plate 36.

SPECIFIC CHARACTER.—Stem simple, striated; leaves with two—three

pair of approximate, linear lanceolate, acute leaflets; stipules about equal in length to the petioles; peduncles few-flowered, longer than the leaves; calycine segments lanceolate, hardly the length of the tube. (*G. Don.*)

DESCRIPTION, &c.—This species has bright blue flowers when they first unfold, but they become a dark purple before they fade. The species is a native of Caucasus, and it was introduced in 1823.

OTHER SPECIES OF PLATYSTYLIS.

P. SESSILIFOLIA, *Swt.*

Flowers large, and a bluish purple. Introduced from Greece, near Athens, in 1823.

P. STIPULACEA, *G. Don.*; OROBUS STIPULACEUS, *Hook. Bot. Mag. t. 2937.*

The flowers have a dark purple standard, light blue wings, and a dark purple keel. A native of Siberia; introduced in 1830.

All the species are very ornamental, and of easy culture in a light sandy soil.

GENUS XVII.

APIOS, *Boërh.* THE APIOS, OR VIRGINIAN EARTH-NUT.

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, with four almost obsolete teeth, and one acute, elongated, one under the keel. Corolla papilionaceous, with a falcate linear carina, bent back upon the top of the vexillum. Stamens diadelphous. Stipe of ovary sheathed by a little tube. Stigma emarginate. Legume many-seeded, and two-celled; the seeds intercepted by dissepiments. (*G. Don.*)

DESCRIPTION, &c.—The name of *Apios* is taken from *Apion*, a pear, in reference to the shape of the tuberous roots. There is only one species in the genus, which was formerly included in the genus *Glycine*.

1.—APIOS TUBEROSA, *Mench.* TUBEROUS-ROOTED APIOS, OR VIRGINIAN EARTH-NUT.

SYNONYMES.—*A. americanus*, *Corn.*; *Glycine Apios*, *Lin.*

ENGRAVINGS.—*Bot. Mag. t. 1198*; and our *fig. 8* in Plate 36.

SPECIFIC CHARACTER.—Roots tuberous. Leaves impari-pinnate.

Flowers in axillary racemes. Bractioles closely adpressed to the calyx, but soon falling off.

DESCRIPTION, &c.—This very elegant climber is a native of Virginia, and though frequently killed down to the root by the severity of British winters, it will shoot up again in spring, and grow to the height of ten feet or more before it flowers, which is generally in August or September. It is propagated by its tuberous roots, which are sweet and eatable, resembling those of the Jerusalem Artichoke, but they are more floury. The plant is cultivated in Germany for its tubers, which are sold in the markets. The species was introduced before 1640; but it is now rarely met with.

GENUS XVIII.

LUPINUS, *Lin.* THE LUPINE.

Lin. Syst. MONADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx profoundly bilabiate. Corolla papilionaceous, the vexillum with reflexed sides, and the keel acuminated. Stamens monadelphous, with the tube or sheath entire, five of the anthers are smaller, rounder, and earlier, and the other five, oblong, and later. Style filiform. Stigma terminal, roundish, bearded. Legume coriaceous, oblong, compressed, obliquely torulose. Cotyledons thick, but converted into leaves at the time of germination. Herbs or sub-

shrubs with digitate leaves, constantly composed of from 5—15 leaflets, very rarely simple. Leaflets complicated before expansion, and while asleep, or through the night. Stipules adnate to the petioles. Peduncles opposite the leaves or terminal. Flowers alternate or verticillate, sessile or pedicellate, disposed in racemes and spikes, with one bractea under each pedicel, and with two bracteoles adhering laterally to the calyx, which are caducous, or wanting. (*G. Don.*)

DESCRIPTION, &c.—The name of *Lupine* is derived from the word *lupes*, a wolf, because a crop of lupines was formerly supposed to destroy the fertility of the soil. But this opinion is singularly at variance with the practice of the modern Italians, who sow a crop of white lupines as a preparative for Corn. It is true that the Italians do not suffer their lupines to seed, but dig the green crop into the ground as soon as it is beginning to form

flower-buds. The seeds of the lupine were eaten by the ancients, though they are so bitter, that Virgil calls them *tristes lupini*, from the dismal faces made by those who ate them. Almost all the kinds of lupine grown in gardens are ornamental, and they are of various kinds and colours. Some are annuals, some perennials, and some shrubs.

1.—LUPINUS PERENNIS, *Lin.* THE PERENNIAL LUPINE.

ENGRAVING.—Bot. Mag. t. 202.

SPECIFIC CHARACTER.—Herbaceous; flowers alternate, pedicellate, bracteolate; upper lip of calyx somewhat emarginate, lower one entire;

leaflets 8—9, lanceolate, mucronulate, rather villous beneath; root creeping. (*G. Don.*)

DESCRIPTION, &c.—This was the first perennial lupine known, and hence its name, which has now become no distinction, as so many perennial lupines are now known. This species is a native of Virginia, whence it was introduced before 1658. It was first cultivated in the Botanic Garden, Oxford, and was greatly admired, though it would now excite little attention, as its flowers are small, and of a pale blueish purple which has rather a dingy or faded look. It is quite hardy, but it succeeds best in a dry situation, in a moderately stiff loam. It has remarkably deep and spreading roots, and is best propagated by seed.

2.—LUPINUS ARBOREUS, *Sims.* THE TREE-LUPINE.

ENGRAVINGS.—Bot. Mag. t. 682; Bot. Reg. 1838, t. 32; and our *fig. 3* in Plate 37.

SPECIFIC CHARACTER.—Suffruticose. Flowers somewhat verticillate,

pedicellate, without bracteoles; both lips of the calyx entire. Keel ciliated on the inside. Leaflets lanceolate, linear, acute, pubescent beneath. (*G. Don.*)

DESCRIPTION, &c.—This species is, properly speaking, a shrub, but it is only woody towards the base. It was formerly treated as a greenhouse plant, but it stands out quite well, and there was some years ago a bud of it in the open ground, in the botanic garden at Oxford, more than six feet high. It seldom however lives more than two or three years, unless trained against a wall. It was introduced in 1793 from South America, but it has been since found in great abundance in California. It may be propagated by cuttings, but the first plants are raised from seeds which it ripens in abundance, and seedling plants flower the second year.

3.—LUPINUS NOOTKATENSIS, *Sims.* THE NOOTKA-SOUND LUPINE.

ENGRAVINGS.—Bot. Mag. t. 1311, and t. 2136; and our *fig. 4* in Plate 37.

SPECIFIC CHARACTER.—Herbaceous; flowers rather verticillate,

pedicellate, without bracteoles; both tips of calyx entire; leaflets 7—8, obovate-lanceolate, hairy as well as the stems. (*G. Don.*)

DESCRIPTION, &c.—This lupine bears considerable resemblance to the common perennial lupine, but the flowers are larger, and of a deeper colour. It is quite hardy, and will grow in any soil or situation, but it is not suitable for small gardens, as it grows to a large size with coarse robust foliage. The whole plant is very hairy. The flowers vary considerably in different plants, and there is one distinct variety, the stem of which is quite shrubby. It is a native of the country near Nootka Sound, whence it was introduced in 1794. It is propagated by division of the root, cuttings, or seeds.

4.—LUPINUS POLYPHYLLUS, *Douglas.* THE MANY-LEAVED LUPINE.

VARIETY.—*L. p. 2 albiflorus Lindl.*

ENGRAVINGS.—Bot. Reg. t. 1096, and of the variety, t. 1377.

SPECIFIC CHARACTER.—Herbaceous; flowers rather verticillate,

without bracteoles, pedicellate; leaflets eleven to fifteen, lanceolate, hairy beneath, both lips of calyx quite entire; stems pilose. (*G. Don.*)

DESCRIPTION, &c.—This splendid lupine is now become so common that we can hardly conceive how gardens must have looked without it, though it is not yet quite twenty years since seeds of it were first sent to this

country by Douglas. It was one of the first importations from California, that country to which we are indebted for so many valuable flowers. *Lupinus polyphyllus* is quite hardy, and will grow in any common garden soil. It attains the height of three or four feet, with a long spike of rich, dark blue flowers. The variety only differs in having the flowers white, and both come true from seed.

5.—LUPINUS ARBUSTUS, *Doug.* THE HALF-SHRUBBY LUPINE.

ENGRAVING.—Bot. Reg. t. 1230.
 SPECIFIC CHARACTER.—Flowers alternate, pedicellate, bracteolate; disposed in loose racemes; upper lip of the calyx bifid, lower one entire, acute. Leaflets seven—thirteen, obovate-oblong, silky on both surfaces. Legumes three—four-seeded. Seeds small, white. (*G. Don.*)

DESCRIPTION, &c.—This very elegant species, though called half-shrubby, is a true perennial. The flowers are rather small, but of a delicate lilac, with a faint tinge of yellow, and they are disposed on the raceme in a very light and elegant manner. It is a native of North Carolina, but very local in its range, growing only in the gravelly soil near Fort Vancouver. It was introduced in 1826. It is hardy, but will only grow in gravelly soil. It flowers in May and June.

6.—LUPINUS LAXIFLORUS, *Doug.* THE LOOSE-FLOWERED LUPINE.

ENGRAVING.—Bot. Reg. t. 1140.
 SPECIFIC CHARACTER.—Plant herbaceous, pilose; flowers alternate, without bracteoles; upper lip of calyx entire; saccate at the base, lower one longer, ovate, and acuminate; keel beardless; vexillum obcordate; leaflets seven—nine, linear-lanceolate; stipules small, subulate.

DESCRIPTION, &c.—This species is also a native of California, where it is found near the great rapids of the Columbia River, in dry, open, gravelly plains, in large patches. The flowers are small, with the standard of a very deep blue, and the keel tinged with pink. This species grows freely in any light garden soil, where there is plenty of free air, but it does not succeed in close situations. Unlike most of the other species, it seldom ripens seeds, and it is therefore propagated by division of the root. It was introduced in 1826.

7.—LUPINUS LEPIDUS, *Doug.* THE PRETTY LUPINE.

ENGRAVING.—Bot. Reg. t. 1149.
 SPECIFIC CHARACTER.—Plant herbaceous; flowers alternate, pedicellate, without bracteoles; calyx villous, the upper lip bipartite, the lower one acuminate and elongated; leaflets five—seven, lanceolate, silky on both surfaces; flowers bearing stems, erect, furnished with one or two leaves; petioles long. (*G. Don.*)

DESCRIPTION, &c.—This is a dwarf species, with pretty cheerful-looking flowers of different shades of purple with the back of the standard and the wings almost white. The leaves are small, and on remarkably long stalks, which gives a peculiar character to the plant. It does not grow above six or eight inches high, and it is propagated by dividing the roots, as it seldom ripens seeds in this country. Like the two preceding species, it is only found in the gravelly plains between Fort Vancouver and the Great Falls of the Columbia, on the dry elevated banks of streams. It was introduced in 1826.

8.—LUPINUS ORNATUS, *Doug.* THE ORNAMENTAL LUPINE.

ENGRAVING.—Bot. Reg. t. 1216.
 SPECIFIC CHARACTER.—Herbaceous; flowers verticillate, appendiculate; upper lip of calyx bifid, lower one entire and elongated; leaflets seven—twelve, linear-lanceolate, clothed with silvery silky down on both surfaces; legumes four—five-seeded. (*G. Don.*)

DESCRIPTION, &c.—This is one of the most beautiful and most singular of all the beautiful Lupines sent home by Douglas from California. The flowers are of the most lovely blue, without the slightest tinge of purple, but



1 *Lupinus macrophyllus*—2. *Lupinus canaliculatus* 3. *Lupinus arboreus* 4. *Lupinus Nootkatensis*
5. *Lupinus versicolor*—6. *Lupinus aridus*

so dark as to be almost black at the margin of the petals, but softening into white at the base. The leaflets are large, and covered with a silky tomentum, which makes them shine like silver in the sun. It was found by Douglas near the Columbia River, in California, and sent home by him in 1826. It is quite hardy, and flowers from May till November, but it will only grow in very light dry soils. It is propagated by dividing the root, as it seldom ripens seeds.

9.—LUPINUS LITTORALIS, *Doug.* THE SEA-SIDE LUPINE, OR CALIFORNIAN LIQUORICE.

ENGRAVING.—Bot. Reg. t. 1198.

SPECIFIC CHARACTER.—Herbaceous; flowers verticillate, pedicellate, without bracteoles; both lips of calyx entire; leaflets five—seven, linear-spatulate, silky on both surfaces; legumes ten—twelve-seeded, furrowed transversely; root granular.

DESCRIPTION, &c.—This species is remarkable for the deep blue of the keel, and the bright pinkish purple of the standard. It is a dwarf species, with long creeping roots. In the Botanical Register is the following quotation from Douglas's account of this plant: "This species is abundant on the sea-shore, where it binds together the loose sand with its tough branching roots. It is used by the natives of the river Columbia as winter food. For this purpose it is prepared by drawing the roots through the fire until all their moisture is dissipated, when they are tied up in small bundles, and will keep for several months. For eating, the roots are roasted in the embers, when they become farinaceous. It is the liquorice spoken of by Captains Lewis and Clarke, and other navigators, who have visited the North-west coast of America." The roots, when chewed, taste sweet, like those of the true Liquorice. "The species is a hardy perennial, flowering from June to October, and propagated by cuttings, division of the roots, or seed."

10.—LUPINUS ARIDUS, *Doug.* THE ARID LUPINE.

ENGRAVINGS.—Bot. Reg. t. 1242; and our *fig.* 6 in Plate 37.

SPECIFIC CHARACTER.—Plant herbaceous, very hairy; flowers verticillate, pedicellate, bracteolate; upper lip of calyx bifid, lower one entire; leaflets five—nine, linear-lanceolate, villous; stipules subulate (*G. Don.*)

DESCRIPTION, &c.—This beautiful species is said to be only found on the sandy plains of California, exposed without the slightest shelter to the rays of the burning sun. The plant in its native country is white, with long silky hairs, but in England the hairs disappear; the flowers are also much darker in this country than in America. In England also, it seldom lives above two years, as it cannot bear the moisture of our climate. It is a native of the banks of the Columbia, whence it was introduced in 1827. It is propagated by dividing the root, or by seed.

11.—LUPINUS PLUMOSUS, *Douglas.* THE FEATHERY-PLUMED LUPINE.

ENGRAVING.—Bot. Reg. t. 1217.

SPECIFIC CHARACTER.—Plant herbaceous, very villous; flowers alternate, on short pedicels, bracteolate; upper lip of calyx bifid, lower one entire, leaflets five—seven, lanceolate, silky; legumes glabrous, three—five-seeded; bractæas longer than the flowers, villous, deciduous. (*G. Don.*)

DESCRIPTION, &c.—This species is a hardy perennial, common in North California, in gravelly soil. It is nearly related to *L. leucophyllus*, but it is distinguished from that species by its larger and less crowded flowers, and by its long, deciduous, and shaggy bractææ, which project so far beyond the unopened flowers in the upper part of the raceme, as to give it the appearance of a plume of feathers. This species, which is very distinct, will only grow in very light soil, and it appears to succeed best in peat. It was introduced in 1827, and it is propagated by dividing the root, or by seeds.

12.—LUPINUS LEUCOPHYLLUS, *Doug.* THE WHITE-LEAVED LUPINE.

ENGRAVING.—Bot. Reg. t. 1124.

SPECIFIC CHARACTER.—Plant herbaceous, very villous; flowers alternate, pedicellate, bracteolate; upper lip of calyx bifid, lower one

entire; leaflets seven—nine, oblong-lanceolate; stipules tubulate, woolly. (*G. Don.*)

DESCRIPTION, &c.—This very singular species is so completely covered with a silky tomentum, as to look quite white and silvery, all over, not a particle of the green surface of the leaves and stem being visible. The stem grows erect and branched, two or three feet high, like that of *Lupinus polyphyllus*. The white-leaved lupine is a native of the "woodless sandy deserts," which extend from the Great Falls of the Columbia to the Rocky Mountains in North America, and it was sent to England in 1825. It is propagated by seeds, or by dividing the root. It flowers from June to November, and its flowers are white or pinkish.

13.—LUPINUS SABINIANUS, *Doug.* MR. SABINE'S LUPINE.

ENGRAVING.—Bot. Reg. t. 1435.

SPECIFIC CHARACTER.—Herbaceous; flowers somewhat verticillate, without bracteoles; racemes many-flowered; calyx villous, with the

upper lip ovate and acute, lower one boat-shaped, revolute; wings rounded, size of vexillum; keel acute; leaflets seven—twelve, lanceolate, acuminate, silky. (*G. Don.*)

DESCRIPTION, &c.—This very showy plant has bright yellow flowers, which are produced on a raceme eight or nine inches long. It is a native of North California, growing on the banks of the Columbia, and it is quite hardy in British gardens. It is, however, a very difficult plant to manage, as very few of the seeds germinate, and the plants often die off, without any apparent cause, when they are in full flower. It flowers in May and June, but the spike frequently withers before all the flowers have expanded. It is propagated by seeds, which it ripens sparingly. It was introduced in 1827.

14.—LUPINUS CANALICULATUS, *Swt.* THE CHANNELLED-LEAVED LUPINE.ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 283; and our *fig. 2* in Plate 37.

SPECIFIC CHARACTER.—Suffruticose. The whole plant covered with

a silky tomentum. Flowers alternate, pedicellate, bracteolate. Calyx appendiculate, with the upper lip bifid, lower one entire, acuminate. Leaflets eight—nine, linear, deeply channelled, obtuse; ovary very hairy.

DESCRIPTION, &c.—This species is remarkable for the very deep blue of its flowers. The plant itself grows four or five feet high, the stem becoming woody near the root. It is a native of Buenos Ayres, whence it was introduced in 1828. This species, and *Lupinus arboreus*, planted alternately, would have a striking effect, from the strong contrast afforded by the dark blue and bright yellow of their flowers.

15.—LUPINUS MACROPHYLLUS, *Benth.* THE LARGE-LEAVED LUPINE.ENGRAVINGS.—Swt. Brit. Flow. Gard. 2d series, t. 356; and our *fig. 1* in Plate 37.

SPECIFIC CHARACTER.—Perennial, hairy. Leaflets numerous, 12—

15, lanceolate acute. Flowers verticillate, very numerous, crowded. Calyx with both lips entire, lower one lanceolate, acute, and twice as long as the upper one.

DESCRIPTION, &c.—A very tall robust plant, clothed with a copious pubescence. The stem is three or four feet high, straight, and cylindrical. The leaves are on long slender footstalks, but there are from twelve to fifteen leaflets, varying from one to four inches in length in the stem leaves, but longer and broader in the root leaves. The flowers are large, and from ten to fifteen in each whorl, and the racemes are from nine inches to a foot long. It is nearly allied to *Lupinus polyphyllus*, and requires the same treatment, but it is larger in all its parts.

16.—LUPINUS VERSICOLOR, *D. Don*. THE PARTI-COLOURED LUPINE.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d series, t. 12; and our fig. 5, in Plate 37.

SPECIFIC CHARACTER.—Suffruticose, erect, branched. Branches

pubescent. Leaflets six to nine; spatulate lanceolate, obtuse, slightly mucronate. Flowers sub-verticillate. Bractees caducous, spreading, ciliated, with silky hairs. Upper lip bifid; under lip entire.

DESCRIPTION, &c.—This plant is quite distinct from the *Lupinus versicolor* of Dr. Lindley, figured in the Botanical Register, t. 1979. It is rather unfortunate that Dr. Lindley and Professor Don should have given the same name to different plants; but I believe, according to the usual rules of botanists, that of Professor Don will stand, as it was applied between 1828 and 1831, while Dr. Lindley's plant was not named till 1835 or 1836. Dr. Lindley's *Lupinus versicolor* is a very handsome plant, varying very much from seed, some of the plants being dark purple, and others nearly white, with all the intermediate shades. It is a native of California, and was introduced in 1836. It is quite hardy. Professor Don's *Lupinus versicolor* (see fig. 5, in Plate 27) has small flowers and a slender stem. It is a native of Mexico, whence it was introduced in 1828. It requires protection in severe weather.

OTHER SPECIES OF LUPINUS.

These are very numerous, but they differ chiefly in colour, as the form is nearly the same in all. The following are the most ornamental of the species.

L. LATIFOLIUS, *Agardh*; Bot. Reg. t. 1109.

A pretty little plant with reddish purple flowers, a native of California; introduced in 1833. The leaflets are rather broader than in the common kinds. It is quite hardy, and flowers from July to September.

L. MEXICANUS, *Lagasca*; Bot. Reg., t. 457.

A rather tender species with light blue flowers. Introduced from Mexico in 1819.

L. RIVULARIS, *Doug.*; Bot. Reg. t. 1595.

A pale-flowered species from California; introduced in 1833.

L. ALBIFLORUS, *Lindl.*; Bot. Reg. t. 1642.

A very singular whitish-looking plant, with glaucous leaves and nearly white flowers. A native of California; introduced in 1831.

L. VILLOSUS, *Purch.*

This species is remarkable for its leaves being entire, and not divided into leaflets. It is a native of Carolina; introduced in 1787.

CHAPTER XVIII.

ROSACEÆ.

CHARACTER OF THE ORDER.—Calyx of five (or rarely three or four) united sepals, with a disk either lining the tube, or surrounding the orifice. Petals equal in number to the sepals; sometimes though rarely wanting. Stamens free, indefinite, rarely few, attached to the disk.

Ovaries superior, solitary or several, one-celled. Styles generally lateral. Fruit one-seeded nuts, or follicles containing several seeds. Leaves alternate; stipules large.

DESCRIPTION, &c.—Most of the Rosaceæ are low trees or shrubs, with ornamental flowers or fruit. The herbaceous plants have also generally large and ornamental flowers. The principal herbaceous genera in this order are *Fragaria* (the strawberry), so well known for its fruit, and *Geum*, *Sieversia*, and *Potentilla*, all remarkable for the beauty of the flowers of some of their species.

GENUS I.

POTENTILLA, *Lin.* THE CINQUEFOIL.*Lin. Syst.* ICOSANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx ten-cleft, the outer segments accessory, foliaceous, and tridentate. Petals five. Stamens numerous. Carpels numerous, dry, seated on an elevated torus. Styles lateral. (*G. Don.*)

DESCRIPTION, &c.—The *Potentilla* is very nearly allied to the strawberry, the principal difference being in the fruit, which in the strawberry is of a fine flavour and juicy, while in the *Potentilla* it is dry and insipid. The *Potentillas* have all compound leaves, like the strawberry; with the stipules adhering to the petioles. The leaves of most of the species have only three leaflets, but those of the British species have five leaflets; and hence the common English, or rather French, name of the genus, which is Cinquefoil, or five-leaved. Some of the exotic species have seven or nine leaflets. The Latin name, "*Potentilla*," signifies "power," from some powerful virtues attributed to this plant in medicine.

1.—POTENTILLA GRANDIFLORA, *Lin.* THE LARGE-FLOWERED POTENTILLA.

ENGRAVING.—*Bot. Mag.* t. 75.

SPECIFIC CHARACTER.—Stem ascending, few-flowered. Leaves ternate, leaflets obovate, connected at the base, deeply serrated, pilose. Stipules

large. Petals obovate, twice the length of the calyx. Receptacle pilose. (*G. Don.*)

DESCRIPTION, &c.—A pretty little plant, with bright yellow flowers, which are badly named, as they are much smaller than those of several other species. This plant is a native of the mountains of Europe and Siberia. It was introduced in 1640, and it is quite hardy in British gardens, where it requires only the common treatment of hardy perennials.

2.—POTENTILLA ATROSANGUINEA, *Lodd.* THE DARK RED POTENTILLA.

ENGRAVINGS.—*Lodd. Bot. Cab.* t. 786; *Bot. Mag.* t. 2689; and our *fig. 2* in Plate 38.

SPECIFIC CHARACTER.—Stem decumbent; leaves ternate; leaflets

obovate, deeply serrated, clothed with white tomentum beneath. Petals obovate, much longer than the calyx.

DESCRIPTION, &c.—This splendid *Potentilla* has flowers of the darkest and richest crimson. It is a native of Nepal, whence it was introduced in 1822. It is quite hardy, and will grow in any common garden soil. It is a decumbent plant, producing its large flowers at the extremity of its shoots. Some splendid hybrids have been produced, by fertilising the seeds of other species of *Potentilla* with the pollen of this plant.

3.—POTENTILLA GRACILIS, *Doug.* THE SLENDER CINQUEFOIL.

ENGRAVING.—*Bot. Mag.* t. 2984.

SPECIFIC CHARACTER.—Stems erect, tall, beset with soft hairs, corymbosely panicled at the apex; leaves quinate, lower ones on long petioles, upper ones almost sessile; leaflets lanceolate, deeply and

pinatifidly serrated, clothed with white tomentum beneath; stipules large, lanceolate, entire; petals obovate, longer than the calyx, which is silky. (*G. Don.*)

DESCRIPTION, &c.—This is a Californian species, with golden yellow flowers, introduced by Douglas in 1826. It is quite hardy, and grows in light sandy soil nearly two feet high.

4.—POTENTILLA ERECTA, *Lin.* THE ERECT POTENTILLA.

SPECIFIC CHARACTER.—Stem erect, pilose. Leaves with 5—7 leaflets; leaflets oblong, deeply serrated, beset with spreading pilli.

Lower stipules lanceolate, entire; upper ones broader, and jagged. Petals obovate, exceeding the calyx. (*G. Don.*)

DESCRIPTION, &c.—This species is exceedingly common on the Continent, whence it was first sent to England in 1648. The flowers are pale yellow, and in terminal corymbs; and the plant grows from one foot to two feet high.

5.—POTENTILLA LUPINOIDES, Willd. THE LUPINE-LIKE POTENTILLA.

SYNONYMES.—*P. nivalis*, Pers. ; *P. valdecia*, Vill. ; *P. lanata*, Lam. ; *P. integrifolia*, Lapeyr.

ENGRAVING.—Lodd. Bot. Cab. t. 654.

SPECIFIC CHARACTER.—Stem erect, pilose. Leaves with five or

seven leaflets; leaflets obovate, roundish, obtuse, connivently serrated at the apex, densely clothed with silky villi. Stipules large, entire. Petals obcordate, shorter than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This species has white flowers, which are produced three or six together at the extremity of the branches. It is a native of the mountains of Dauphiny and the Pyrenees, whence it was introduced in 1739.

6.—POTENTILLA COLORATA, Lehm. THE COLOURED POTENTILLA.

SYNONYMES.—*P. Nepalensis*, Hook. ; *P. formosa*, D. Don.

SPECIFIC CHARACTER.—Stems erect, purple. Lower leaves quinate, with obovate lanceolate leaflets; upper leaves ternate, with lanceolate

leaflets. Leaflets serrated, and beset with silky incumbent pill. Stipules ovate, quite entire, sheathing. Petals obcordate, veiny, longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—The petals of this species are of a beautiful and brilliant rose-colour. It is a native of Nepal, whence it was introduced in 1822.

7.—POTENTILLA HOPWOODIANA, D. Don. HOPWOOD'S POTENTILLA.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 61; Bot. Reg. t. 1833; and our fig. 1 in Plate 38.

SPECIFIC CHARACTER.—Stems ascending, clothed with villi; lower leaves with 5—6 leaflets, upper one ternate; leaflets oblong cunei-

form, coarsely-toothed, hairy on both surfaces; calycine segments ovate, acuminate; petals obcordate, imbricated, longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This very beautiful plant is a hybrid, raised by a nurseryman at Twickenham about the year 1830, between *P. formosa* and *P. erecta*: and it possesses the different colours of its two parents, both bright and clear, and yet beautifully softened into each other. This hybrid is quite hardy, and will grow in any common garden soil, though it thrives best in a warm climate, provided it has abundance of air. It is propagated by dividing the root. The flowers are generally much larger than those we have figured.

8.—POTENTILLA RUSSELLIANA, Sweet. RUSSELL'S CINQUEFOIL.

ENGRAVING.—Swt. Brit. Flow. Gard. t. 279.

SPECIFIC CHARACTER.—Villous; stems branched, diffuse; radical leaves petiolate, ternate, quaternate, or quinate; leaflets ovate or

obovate, obtuse, deeply serrated, feather-nerved, rather silky beneath; stipules adnate, ovate lanceolate, acuminate; calycine segments lanceolate, acute; petals large, obcordate. (*G. Don.*)

DESCRIPTION, &c.—A very handsome hybrid, raised between *P. formosa*, with rose-coloured flowers, and *P. atropurpurea*, with dark crimson flowers. The petals are a bright scarlet, with a dark spot at the base. This plant was raised about 1827, by Mr. Russell, a nurseryman at Battersea. It is quite hardy; and it is propagated by division of the root.

9.—POTENTILLA MACKAYANA, Swt. MACKAY'S CINQUEFOIL.

ENGRAVING.—Swt. Brit. Flow. Gard., 2d ser. t. 42.

SPECIFIC CHARACTER.—Villous; stems ascending, branched; leaves flaccid, radical ones quinate; leaflets oblong-cuneate, coarsely and

bluntly toothed; cauline leaves ternate, few-toothed; stipules ovate, acute, quite entire; petals obcordate, undulated, a little longer than the calyx. (*G. Don.*)

DESCRIPTION, &c.—This is another hybrid raised by Mr. Mackay, a nurseryman at Clapton, between *P. formosa*, which has rose-coloured flowers, and *P. opaca*, which has yellow flowers. In *P. Mackayana*, the colours are not mixed so as to make a more beautiful tint, as in *P. Russelliana*; nor softened into each other, as in *P. Hopwoodiana*; but the petals are yellow, each with a little spot of red at the base.

OTHER SPECIES OF POTENTILLA.

These are very numerous, and they are all so ornamental that it is difficult to know which to select. The following are a few from each section :

§ 1.—LEAVES TERNATE.

P. NIVEA, *Lin.*, *Bot. Mag.* t. 2982; *Lodd. Bot. Cab.* t. 460.

A native of North America, where it extends as far north as the shores of the Arctic Sea. The leaves are covered with a white down, from which it takes the name of the Snowy Potentilla, and the flowers are yellow. It was introduced in 1816. There are several species nearly allied to this, and having yellow flowers, but with green leaves.

P. VILLOSA, *Pallas.*

An American species, remarkable for the large size of its golden yellow flowers. Introduced in 1820.

P. NITIDA, *Lin.*

A very beautiful species with shining leaves, a native of Dauphiny. Introduced in 1815. The plant is only two or three inches high, and grows in tufts. The flowers are white, or of the colour of the peach-blossom.

P. atrosanguinea, and several other species with beautiful flowers, belong to this division, but very few of them have been introduced.

§ 2.—LEAVES DIGITATE OR PINNATE.

P. REPTANS, *Lin.*

The common Cinqufoil, a British plant with small yellow flowers.

P. UMBROSA, *Stev.*

A native of Russia, introduced in 1818. The petals are of a golden yellow inside and brown without.

P. OPACA, *Lin.*

A native of the northern parts of Europe and America. The flowers are yellow, disposed in a leafy corymb, and the stems purplish. It is found wild in Scotland.

P. CROCEA, *Hall.*

Flowers copper-coloured. A native of the mountains of Europe; introduced in 1816.

GENUS II.

GEUM, *Lin.* *AVENS.*

Lin. Syst. ICOSANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx ten-cleft, the five outer segments accessory. Petals five. Stamens numerous. Carpels numerous, dry, ending each in a kneed style. (*G. Don.*)

DESCRIPTION, &c.—The word *Geum* is derived from *geuo*, to give a relish, in allusion to the roots of the common *Avens*, or Herb Bennet (*G. urbanum*), which taste like cloves, and are sometimes used for flavouring gin and other spirits. There are numerous species with yellow or reddish flowers, all more or less handsome and deserving of cultivation; but the scarlet-flowered *Geum* is the only one usually found in gardens. The genus *Geum* differs from *Potentilla* in each carpel having a hooked style, while those of *Potentilla* are straight.



1. *Potentilla Hopwoodiana*. — 2. *Potentilla atrosanguinea*. — 3. *Geum coccineum*.
4. *Sieversia Potentilla*.

1.—GEUM COCCINEUM, *Lindl.* SCARLET-FLOWERED GEUM.SYNONYMS.—*G. Quellyon*, *Swt.*; *G. Chiloonse*, *Balb.*ENGRAVINGS.—*Bot. Reg.* t. 1088; *Swt. Brit. Flow. Gard.*, t. 292; and our *fig. 3.* in *Plate 38.*

SPECIFIC CHARACTER.—Radical leaves interruptedly pinnate; leaflets

crenately serrated; terminal one large, roundish, cordate, lobed and crenated; cauline leaves 3-lobed, deeply cut; stipules large, roundish, toothed. Flowers panicled, erect. Plant villous or piloso.

DESCRIPTION, &c.—This species is a native of the mountains of Chile, whence it was sent to Lyons, and communicated by M. Balbis of that city, to the London Horticultural Society in 1826. Though a native of Chile, it is quite hardy in British gardens, where it flowers from May till August, and ripens abundance of seeds. It thrives most in a light soil. It must be observed that this species is quite different from *G. coccineum* of the *Flora Græca*, which is *Sieversia*.

GENUS III.

SIEVERSLA, *Willd.* THE SIEVERSLA.*Lin. Syst.* ICOSANDRIA POLYGYNIA.

GENERIC CHARACTER.—Calyx ten-cleft, the five outer segments accessory. Petals five. Stamens numerous. Carpels numerous, dry, ending in a feathery jointless stylo or awn.

DESCRIPTION, &c.—The genus *Sieversia* has been divided from *Geum* on account of the styles, which are long and feathery, and not hooked and naked as in *Geum*. There are several species, mostly natives of the north of Europe. The flowers are of a bright yellow or reddish, and they are frequently distinctly veined.

1.—SIEVERSLA MONTANA, *Spreng.* THE MOUNTAIN SIEVERSLA.SYNONYMS.—*Geum montanum*, *Linn.*ENGRAVINGS.—*Flor. Cab.* vol. ii. t. 1; and our *fig. 4.* in *Plate 38.* under the name of *S. Potentilla*.

SPECIFIC CHARACTER.—Stem erect, one-flowered. Stolones none. Radical leaves interruptedly pinnatifid; terminal leaflet ovate, large,

oblong, obtuse, and bluntly biserrate; lateral leaflets smaller, and toothed. Cauline leaves one-lobed, and deeply toothed like the stipules. Calycine segments undivided. Petals orbiculate, longer than the calyx, styles spreading, very piloso. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of the mountainous parts of Europe, and was introduced in 1597; but, notwithstanding the great length of time it has been in this country, it is rarely seen in collections. The flowers are large and of a golden yellow, and the feathery styles are very showy when the petals have fallen. The species is quite hardy, and is propagated by dividing the roots or by seeds.

CHAPTER XIX.

ONAGRARIÆ.

CHARACTER OF THE ORDER.—Tube of the calyx adhering to the ovarium; limb two to four lobed. Petals two or four, twisted in aestivation, inserted in the upper tube of the calyx. Stamens four or

eight, free. Fruit capsular, baccate or drupaceous, two or four-celled, and many-seeded. Albumen wanting. Embryo straight, with a long radicle and two short cotyledons.

DESCRIPTION, &c.—This order is in fact a very natural one, though it embraces a great many genera, some of which are so different from each other, as the *Fuchsia* and the *Evening Primrose*. In all, however, there are four petals and four sepals; and if only two, they may be easily separated into four. The seed-vessel is also very long and below the petals, having the appearance of a part of the peduncle. The most ornamental herbaceous plants belonging to this order are included in the genus *Oenothera*. *Onagrarie* is taken from the old name of the same genus.

GENUS I.

ŒNOTHERA, *Lin.* THE EVENING PRIMROSE.*Lin. Syst.* OCTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Limb of calyx four-parted. Petals four. Capsule oblong-linear, bluntly tetragonal or clavate, four-celled. Seeds naked. (*G. Don.*)

DESCRIPTION, &c.—The name of *Œnothera* signifies an incentive to wine-drinking; and it alludes to the custom which formerly prevailed, of eating the roots of *Œnothera biennis* with wine, in the same manner as Olives are now. The perennial species, or true Evening Primroses, have all yellow or white flowers; and they all close their flowers during the middle of the day, opening them only when the sun has set, or the sky become cloudy. The species are all hardy, and most of them are natives of North America.

1.—ŒNOTHERA BIENNIS, *Lin.* THE BIENNIAL, OR COMMON EVENING PRIMROSE.

ENGRAVING.—Eng. Bot. t. 1534.

SPECIFIC CHARACTER.—Stem erect, branched; radical leaves oblong-lanceolate, cauline ones ovate-lanceolate, toothed, pubescent; petals hardy obovate, exceeding the stamens; lobes of stigma linear and thickish; capsule nearly cylindrical, thickest at the base; valves either entire or bifid, opening at the apex. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this plant are large, pale yellow, and very fragrant; the stem is strong, and grows from two feet to four feet high; and the roots are tuberous and eatable. The plant is a native of North America, and hence it is sometimes called the Virginian Tree Primrose; but it is also found wild in England, particularly in Lincolnshire. It is a biennial, and is propagated by seeds.

2.—ŒNOTHERA SPECIOSA, *Nutt.* THE SHOWY EVENING PRIMROSE.

ENGRAVING.—Swi. Brit. Flow. Gard. t. 253.

SPECIFIC CHARACTER.—Plant puberulous; stem suffruticose; leaves pinnatifid, nerved, pubescent beneath; flowers subracemose, raceme naked, at first drooping; petals obovate, equal in length to the stamens; capsule obovate, angular.

DESCRIPTION, &c.—A very handsome species, with large white flowers, which turn red as they fade. A native of North America; introduced in 1821. The plant grows two or three feet high. It is quite hardy, and is propagated by division of the root.

3.—ŒNOTHERA PALLIDA, *Lind.* THE PALE-FLOWERED EVENING PRIMROSE.

ENGRAVINGS.—Bot. Reg. t. 1142; and our *fig.* 4 in Plate 39.

SPECIFIC CHARACTER.—Roots creeping; stems ascending; branched, glabrous; leaves linear-lanceolate, acuminate, quite entire or toothed, glabrous; petals retuse, crenulate, exceeding the stamens; capsules cylindrical, twisted. (*G. Don.*)

DESCRIPTION, &c.—A beautiful species, with white flowers, delicately tinged with pink, and slightly yellow at the base. The plant is a native of North America, and it is found in great abundance in the dry sandy soil to the west of the Rocky Mountains. It was introduced in 1826, and is quite hardy in British gardens, growing about a foot high, and flowering from June to September.

4.—ŒNOTHERA TARAXACIFOLIA, *Sweet.* THE DANDELION-LEAVED EVENING PRIMROSE.

SYNONYMS.—*Œ. grandiflora*, *Ruiz et Pavon*; *Œ. acaulis* β major, *Ser.*

ENGRAVINGS.—Swi. Brit. Flow. Gard. t. 294; and our *fig.* 2 in Plate 39.

SPECIFIC CHARACTER.—Stem branched, elongated, procumbent; leaves

pubescent, alternate, interruptedly pinnatifid, sinuately toothed, but the apex entire; tube of flowers very long; petals large, obovate, entire, five-nerved; anthers and stigmas shorter than the corolla; capsules sessile, obovate, pubescent, tetragonal; angles winged. (*G. Don.*)

DESCRIPTION, &c.—This splendid species has very large white flowers, which assume a reddish hue when



1. *Enothera macrocarpa*.—2. *Enothera taraxacifolia*.—3. *Enothera glauca*.
4. *Enothera pallida*.—5. *Enothera bifrons*.

they fade; and which appear to repose on the dandelion-shaped leaves, from the shortness of the stem. The plant is a native of Chili, but it is quite hardy in British gardens, where it flowers from May to August. It was introduced in 1825. It grows best in a light soil, and it is propagated by division of the root.

5.—*CENOTHERA MACROCARPA*, Pursh. THE LARGE-FRUITED EVENING PRIMROSE.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 5; and our *fig. 1* in Plate 39.

SPECIFIC CHARACTER.—Stem simple, prostrate, downy; leaves lanceolate, quite entire, or glandularly denticulated, with the margins and

nerves covered with white silky down; petals broad, ebcordate; stamens arched, shorter than the corolla; lobes of stigma cylindrical, blunt; capsule large, sessile, oblong, four-winged. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of the banks of the Mississippi, whence it was introduced in 1811; and it is remarkable not only for the large size of its flowers, but for the great length of the tube of its calyx, which often exceeds four inches; the pollen having this distance to descend from the stamens to the ovary, which is at the base of the tube. The plant in a natural state trails on the ground, and is thus well suited for rockwork, the flowers reposing on its large broad leaves; but it may be supported by a stick so as to grow a foot or more high. It should be grown in a light rich soil, and it may be propagated by seeds, cuttings, or division of the root.

6.—*CENOTHERA GLAUCA*, Mich. THE GLAUCOUS-LEAVED EVENING PRIMROSE.

ENGRAVINGS.—Bot. Mag. t. 1606; and our *fig. 3* in Plate 39.

SPECIFIC CHARACTER.—Plant quite glabrous, decumbent, glaucous; leaves ovate, repandly denticulated; limb of calyx longer than the

tube; petals large, ebcordate, erose; stamens and stigma shorter than the corolla; capsules ovate, tetragonal, thick, short. (*G. Don.*)

DESCRIPTION, &c.—This species has yellow flowers and very glaucous leaves. It is erect, and the stem grows from one to two feet high. It is a native of North America, where it is found in woods west of the Mississippi. It was introduced in 1813. It is quite hardy in British gardens, where it flowers from June to October. It is propagated by seeds or division of the root.

7.—*CENOTHERA ANISOLOBA*, Swt. THE ERECT LARGE EVENING PRIMROSE.

ENGRAVINGS.—Swt. Brit. Flow. Gard. 2d ser. t. 105; Bot. Reg. t. 1479.

SPECIFIC CHARACTER.—Stem suffruticose, tall, straight, branched, downy. Radical leaves elliptic, entire, or few-toothed; middle ones

elliptic, sharply toothed, with the segments at the base variable, linear, acute, and divaricating; upper ones unequal, pinnatifid. Tube of the flower very long. Ovary tetragonal. Petals large, imbricate, with crenulated margins.

DESCRIPTION, &c.—The root of this species is fusiform and fleshy. The stem is erect, and woody at the base, growing to a considerable height, sometimes as much as three feet. The leaves are hairy on both sides, and very irregular in their shape. The flower is large and white, but it turns red in dying. The plant is a native of Chili, whence it was introduced in 1828. If the seeds are raised on a hotbed, it will flower the first year.

8.—*CENOTHERA CORDATA*. THE HEART-LEAVED *CENOTHERA*.

SYNONYME.—*C. bifrons*, *D. Don.*

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser. t. 386; and our *fig. 5* in Plate 39, under the name of *C. bifrons*.

SPECIFIC CHARACTER.—Stem erect, branchlog, hairy. Upper leaves cordate; stem clasping, denticulate, pubescent. Petals obovate, obtuse crenulate. Capsules cylindrical, and covered with bristly hairs.

DESCRIPTION, &c.—This species strongly resembles the common Evening Primrose; but it differs in the petals being crumpled, its leaves cordate, and its capsules covered with bristly hairs. The species is a native of Texas, whence it was introduced in 1838. It was called *C. bifrons* by Professor Don, who described it in Sweet's British Flower-Garden; but as that name was previously given to another species by Dr. Lindley, I have thought it best to call it *C. cordata*, in allusion to its heart-shaped leaves.

OTHER SPECIES OF CENOTHERA.

CE. MURICATA, *Lin.*

The stems of this species are covered with reddish warts. The flowers are yellow. The plant grows three or four feet high. It is a native of Canada, whence it was introduced in 1789.

CE. ELATA, *H. B. et Kunth.*

This species grows more than six feet high, and has pale yellow flowers. It is a native of Mexico, and was introduced in 1826.

CE. SUAVEOLENS, *Desf.*

A native of North America, with yellow, sweet-scented flowers.

CE. SIMSIANA, *Ser.*; CE. CORYMBOSA, *Sims, Bot. Mag. t. 1974.*

A very handsome species, with large corymbs of bright yellow flowers. A native of Mexico, introduced in 1816.

CE. NOCTURNA, *Jacq.*

A native of the Cape of Good Hope, introduced in 1790. The flowers are yellow, but change to red in dying.

CE. LONGIFLORA, *Jacq.*

A biennial; remarkable for the great length of the tube of the flower. A native of Buenos Ayres, introduced in 1776. It grows five feet high.

CE. ODORATA, *Jacq.*; CE. UNDULATA, *Ait.*; ONAGRA UNDULATA, *Mench. Bot. Mag. t. 2403; Bot. Reg. t. 147.*

A native of Patagonia; introduced by Sir Joseph Banks in 1790. It has yellow fragrant flowers, a succession of which appears during the whole summer, and it ripens abundance of seed. It grows about two feet high, and has undulated leaves.

CE. CÆSPITOSA, *Sims, Bot. Mag. t. 1593.*

A beautiful species, with fragrant white flowers, which turn pink in dying. The tube of the flower is very long. A native of North America, introduced in 1811.

CE. FRUTICOSA, *Lin.; Bot. Mag. t. 332.*

This is the common Tree Primrose of the old writers; but notwithstanding its name, it is perfectly herbaceous. It is a native of Virginia, and was introduced in 1739.

CE. PUMILA, *Lin., Bot. Mag. t. 355.*

A very pretty little plant, growing about a foot high, with small yellow flowers. A native of North America, introduced in 1757. There are many other species, but the above are the most distinct.

CHAPTER XX.

PORTULACÆ.

CHARACTER OF THE ORDER.—Calyx of two sepals. Petals five. | Capsules opening by three valves, or by a kind of lid. Placenta
Stamens variable, perigynous. Anthers appendiculate. Style one. | central. Seeds winged.

DESCRIPTION, &c.—This order consists chiefly of fleshy-leaved plants with small flowers, but some of the annual species have flowers of great brilliancy and beauty. The only genus which contains ornamental perennial plants, is *Claytonia*. The name of the order, *Portulacæ*, signifies "to carry milk," from some of the plants contained in it having a milky juice.



1. *Claytonia Carolinaana*.—2. *Claytonia virginica*.—3. *Sedum Sempervivoides*.
 4. *Sedum ternatum*.—5. *Sedum caeruleum* ♀

GENUS I.
CLAYTONIA, *Lin.* THE CLAYTONIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Sepals two, permanent. Petals five, un-
guiculated; claws connate at the base. Stamens five. Style one, | trifid at the apex; lobes stigmatose inside. Capsule one-celled, three-
valved, three-seeded. (*G. Don.*)

DESCRIPTION, &c.—This genus was named in honour of Dr. John Clayton, who collected the plants for the Flora Virginica of Gronovius. The stalks and leaves of these plants are less succulent than those belonging to most of the other genera of the order, and the flowers are white or rose-coloured. All the perennial Claytonias have tuberous roots.

1.—CLAYTONIA VIRGINICA, *Lin.* THE VIRGINIAN CLAYTONIA.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d ser. t. 163; and our *fig.* 2 in Plate 40.

SPECIFIC CHARACTER.—Leaves all narrow, linear, absolutely three-

nerved, with anastomosing veins; radical ones very few; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals emarginate. (*G. Don.*)

DESCRIPTION, &c.—This very elegant little plant has a large tuberous root, producing many flower-stems, and abundance of leaves, which are smooth and glossy, of a dark green above, and paler beneath. It is a native of North America, where it is found in moist woods. It was introduced in 1768. It should be grown in peat soil, and it may be increased either by seeds, or by dividing the root.

2.—CLAYTONIA CAROLINIANA, *Michx.* THE CAROLINIAN CLAYTONIA.

SYNONYMES.—*C. spathulæfolia, Salis.*; *C. Virginica, var. spathulæfolia, Dec.*

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 208; and our *fig.* 1 in Plate 40.

SPECIFIC CHARACTER.—Root tuberous; radical leaves subspatulate; cauline ones oblong; racemes solitary, nodding; pedicels elongated; lower ones bracteate; petals obovate, somewhat emarginate; sepals very blunt. (*G. Don.*)

DESCRIPTION, &c.—This species is more rare than the preceding one, and it is less elegant. It requires the same treatment. It is a native of North America, whence it was introduced in 1789.

OTHER SPECIES OF CLAYTONIA.

C. GRANDIFLORA, Swt. Brit. Flow. Gard. t. 216.

A plant with the habit of *C. Virginica*, but with larger flowers. A native of North America, introduced in 1789.

C. ACUTIFLORA, Swt.; *C. VIRGINICA, Bot. Mag.* t. 941.

Remarkable for its pointed lanceolate petals. Introduced from North America, before 1759.

CHAPTER XXI.

CRASSULACEÆ.

CHARACTER OF THE ORDER.—Calyx many-parted. Petals equal in number to the divisions of the calyx. Stamens equal in number to the petals, or double the number. Ovaries one-celled, tapering into

one stigma each. Seeds attached to the margin of the suture, in two rows, variable in number.

DESCRIPTION, &c.—The plants contained in this order are all fleshy, and succulent in their stems and leaves, the latter being entire or pinnatifid, without stipules. The flowers are usually showy, and produced in the kind

of heads called cymes. "These plants," says Mr. Don, "are found in the driest situations, where not a blade of grass nor a particle of moss can grow; on naked rocks, hot sandy plains, and old walls, alternately exposed to the heaviest dews of night, and the fiercest rays of the sun." They derive scarcely any nourishment from the soil, being furnished with innumerable pores, which absorb moisture during the night. The name of Crassulaceæ is derived from *crassus*, in allusion to the succulent nature of the leaves and stems.

GENUS I.
SEDUM, *Lin.* THE STONECROP.

Lin. Syst. DECANDRIA PENTAGYNIA.

GENERIC CHARACTER.—Calyx five-parted; sepals ovate, usually turgid, leaf-formed. Petals five, generally spreading. Stamens ten. Nectariferous scales entire, or hardly emarginate. Carpels five. (*G. Don.*)

DESCRIPTION, &c.—The name of Sedum, which signifies "to sit upon," expresses the habit of this plant, which appears in fact only to sit or rest upon the stones or rocks on which it grows. The same habit explains the English name of Stonecrop. Most of the species are quite hardy, and succeed perfectly well on rockwork in the open air. When grown in the border, it should be in very light sandy soil, or the soil where they grow should be mixed with loam and brick rubbish.

1.—SEDUM TERNATUM, *Michx.* THE TERNATE-LEAVED STONECROP.

SYNONYMES.—*S. portulacoides*, *Willd.*; *S. deficiens*, *Don*; *S. Americanum*, *Herb., Bauh.*; *S. octagonum*, *Hort.*; *Anacampseros ternata*, *Haw.*

ENGRAVINGS.—*Bot. Mag.* t. 1977; *Bet. Reg.* t. 142; and our *fig.* 4 in Plate 40.

SPECIFIC CHARACTER.—Leaves flat, glabrous, quite entire; lower leaves obovate, attenuated at the base, three in a whorl, upper ones sessile, lanceolate, inordinate; cymes trifid; flowers sessile along the branches; petals oblong, acute. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of North America, whence it was introduced by Sir Joseph Banks in 1789. It is admirably adapted for rockwork, as it forms a large thick tuft, with stems about four inches high; and it is covered with flowers, which begin to appear in June, and continue during the whole summer. It is quite hardy in the open garden, if grown in a dry situation and a sandy soil; and it looks very well in pots or boxes, if not kept too moist.

2.—SEDUM SEMPERVIVOIDES, *Fisch.* THE HOUSELEEK-LIKE STONECROP.

ENGRAVINGS.—*Bot. Mag.* t. 2474; and our *fig.* 3 in Plate 40.

SPECIFIC CHARACTER.—Leaves spatulate-ovate, acute, flat, quite entire, pubescent; lower ones collected into a circle; cauline ones

half stem-clasping; stems simple; corymb rather panicle; petals lanceolate-subulate. (*G. Don.*)

DESCRIPTION, &c.—A very hardy and handsome plant, closely resembling the houseleek when not in flower. It is a native of Mount Caucasus, whence it was introduced about 1823. It may be planted either in the open border or on rockwork; and it flowers from June to September.

3.—SEDUM CÆRULEUM, *Vahl.* THE BLUE-FLOWERED STONECROP.

SYNONYMES.—*S. azureum*, *Desf.*; Barbary Stonecrop.

ENGRAVINGS.—*Bot. Reg.* t. 520; *Bet. Mag.* t. 2224; and our *fig.* 5 in Plate 40.

SPECIFIC CHARACTER.—Stem flat on the ground at the base, ascending; leaves oblong, alternate, obtuse, loosened at the base; cymes bifid, glabrous; petals seven, obtuse. (*G. Don.*)

DESCRIPTION, &c.—This curious little plant has, notwithstanding its name, pinkish flowers, but they have the remarkable property of becoming of a brilliant blue when dry. It is a native of Barbary, whence it was introduced in 1819. It is quite hardy, and only requires to be kept dry, and grown in sand.

OTHER SPECIES OF SEDUM.

These are so very numerous, that I can only give a few of the most remarkable.

S. AIZOON, *Lin.*

The Yellow Orpine. A native of Siberia, introduced in 1757.

S. SPHERICUM, *Bieb.; Bot. Mag. t. 2370.*

A very beautiful little plant, very unlike a Sedum, with bright pink flowers. A native of Caucasus, introduced in 1822.

S. OPPOSITIFOLIUM, *Sims; Bot. Mag. t. 1807.*

A very handsome species, with white flowers and toothed leaves. Its native country and year of introduction are unknown.

S. POPULIFOLIUM, *Lin.; Bot. Mag. t. 211.*

This is the only hardy Sedum with a shrubby stalk. It is a native of Siberia, whence it was introduced in 1780.

S. ANACAMPSEROS, *Lin.; Bot. Mag. t. 118.*

The Evergreen Orpine. A very singular plant; a native of the south of France, introduced before 1597. The leaves are glaucous, and the flowers pink.

All the Sedums may be propagated by cuttings, or by dividing the roots in autumn, as they very rarely ripen seed.

CHAPTER XXII.

SAXIFRAGACEÆ.

CHARACTER OF THE ORDER.—Calyx either superior or inferior, 4 or 5-lobed. Petals five, or wanting, inserted between the lobes of the calyx. Stamens 5—10. Ovary consisting of two or five carpels. Style none; stigmas sessile on the tips of the lobes of the ovary. Seeds numerous, very minute.

DESCRIPTION, &c.—The most popular genera in this order are Hydrangea and Saxifraga; the former, however, contains only shrubs, and is therefore unsuitable to the present work. The genus Saxifraga is a very extensive one, and though it has been divided by several authors, the new genera which have been formed from it do not seem likely to be generally adopted. The name Saxifraga signifies “break-stone,” in allusion to the medicinal properties of some of the species.

GENUS I.

SAXIFRAGA, *Lin.* THE SAXIFRAGE.*Lin. Syst.* DECANDRIA DIGYNIA.

GENERIC CHARACTER.—Calyx either superior or inferior, of four or five sepals, which cohere more or less at their base. Petals five or wanting, inserted between the lobes of the calyx. Stamens 5—10, inserted either into the calyx or beneath the ovarium; therefore they are either perigynous or hypogynous; anthers 2-celled, bursting lengthwise. Disk either hypogynous or perigynous, sometimes obsolete, sometimes annular and notched, rarely consisting of five scales. Ovarium inferior, or nearly superior, usually consisting of two or five carpels or follicles, cohering more or less on the inner side, but distinct at the apex; sometimes 2-celled, with a central placenta; sometimes 1-celled, with parietal placentas, rarely 4—5-celled. Styles none; stigmas sessile on the tips of the lobes of the ovarium. (*G. Don.*)

DESCRIPTION, &c.—Perennial plants, with thick woody roots, and large fleshy leaves. The flowers are showy, and they are generally disposed in thyrsoid panicles.

1.—SAXIFRAGA CRASSIFOLIA, *Lin.* THE THICK-LEAVED SAXIFRAGE.SYNONYME.—*Megasea crassifolia*, *Haw.*ENGRAVINGS.—*Bot. Mag.* t. 196; and our *fig.* 1 in Plate 41.SPECIFIC CHARACTER.—Leaves oval or obovate, very blunt, glabrous, serrulated, oblong. Petals elliptic. (*G. Don.*)

DESCRIPTION, &c.—Mr. Curtis, in the *Botanical Magazine*, when describing this plant, observes that “the term *grandifolia* would have been more applicable to it than *crassifolia*, as it is not distinguished for the thickness so much as the largeness of its leaves.” The leaves are indeed nearly the size of those of the Dock; of a fine green on the upper surface, and red below. The flower-stem rises two or three feet high, according to the richness and moisture of the soil in which it grows. The flowers appear in April or May, and may be shielded by a hand-glass from the cold, if sharp winds should prevail, or the nights prove frosty. The plant is a native of Siberia, whence it was introduced in 1765, by Dr. Solander. It is easily increased by dividing the root in spring or autumn.

2.—SAXIFRAGA LIGULATA, *Wall.* THE LIGULATE OR NEPAUL SAXIFRAGE.SYNONYMS.—*S. Pacumbis*, *Buch.*; *Megasea ciliata*, *Haw.*; Fringed leaved Saxifrage.ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 59; *Lodd. Bot. Cab.* t. 747; and our *fig.* 2 in Plate 41.SPECIFIC CHARACTER.—Leaves obovate, subcordate, denticulated, quite glabrous on both surfaces, but ciliated on the margins. Panicle dichotomous. Petals broad, orbicular. (*G. Don.*)

DESCRIPTION, &c.—This very handsome species has the flowers large, bell-shaped, and nearly white. The leaves are large, leathery, dotted all over with small punctures, and fringed at the margin with a border of fine short hairs. The root is horizontal and woody. The species is a native of Nepaul, whence it was introduced in 1822. It should be grown in very rich garden soil, and may be protected from cold winds or frost like the preceding species. It differs from *S. crassifolia* in its facility of propagation; as it can only be increased slowly by suckers from the roots.

OTHER SPECIES OF SAXIFRAGA.

S. CORDIFOLIA, *Curtis.*

A native of Siberia, with cordate leaves; closely allied to *S. crassifolia*. Introduced in 1779.

S. UMBROSA, *Lin.* ROBERTSONIA UMBROSA, *Haw.*

London Pride. A well-known species, a native of England and Ireland, and many parts of the Continent.

S. STELLARIS, *Lin.*; our *fig.* 4 in Pl. 41.

A pretty little plant, a native of the north of Europe and America, and found wild in Scotland.

S. GRANULATA, *Lin.*

The Meadow Saxifrage. A well-known British plant, with white flowers; common in the sandy soils of England.

S. OPPOSITIFOLIA, *Lin.*; our *fig.* 3 in Plate 41.

This species is common throughout the whole of the north of Europe; and it is found in great abundance on the Welsh and Scotch mountains; also on hills in Yorkshire. It grows in short tufts, but is extremely beautiful, from the great abundance of its large purple flowers.

There are above a hundred and fifty other species of Saxifrage, but those above-mentioned are the kinds most frequently met with.



1. *Saxifraga crassifolia*. — 2. *Saxifraga ligulata*. — 3. *Saxifraga oppositifolia*. — 4. *Saxifraga stellaris*.

CHAPTER XXIII.

RUBIACEÆ.

CHARACTER OF THE ORDER.—Tube of the calyx adhering to the ovary; limb variable; lobes equal in number to the petals. Corolla gamopetalous, inserted in the calyx; usually with a 4 or 5-lobed limb; the lobes twisted or valvate in aestivation. Stamens equal in number to the segments of the corolla; alternating with them, and more or less adnate to its tube. Ovary usually two or many celled; crowned by a fleshy urceolus, or the limb of the calyx.—Style one; stigmas usually two, distinct. (*G. Don.*)

DESCRIPTION, &c.—This is a very interesting order, from its containing the Cinchona or Peruvian-bark, and the Coffee. It also contains many beautiful and well-known stove plants, the Madder, and the fragrant weed called Woodruff. Most of the species, however, require a stove in England; and of the hardy kinds the greater number are British weeds. The order is divided into twelve tribes, and contains above two hundred and twenty genera; out of which only six or seven genera contain hardy plants, and only one genus, *Crucianella*, hardy plants sufficiently ornamental for cultivating in a garden. *Rubiaceæ* is from *rubeus*, signifying red; from the colour of some of the roots.

GENUS I.

CRUCIANELLA, *Lin.* THE CROSSWORT.

Lin. Syst. TETRA-PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Limb of calyx none. Corolla tubular, elongated, funnel-shaped, 4 or 5 lobed; lobes usually drawn out into a bristle-like inflated appendage. Stamens 4—5, enclosed. Style 2-lobed at the apex. Fruit bipartite, not crowned. (*G. Don.*)

DESCRIPTION, &c.—Most of the species are annuals. The name of *Crucianella* is from *crux*, a cross, in allusion to the leaves being placed crosswise. The flowers are produced in heads or spikes, and are generally white or pinkish. The only ornamental species in *Crucianella stylosa*, and this plant Dr. Lindley thinks is not a true *Crucianella*.

1.—CRUCIANELLA STYLOSA, *Trin.* THE LONG-STYLED CRUCIANELLA, OR CROSSWORT.

SYNONYME.—*Laxmannia fasciculata*, *Gmel.*

ENGRAVINGS.—*Bot. Reg.* 1838, t. 55; *Flor. Cab.* vol. ii. p. 147; and our *fig.* 6 in Plate 42.

SPECIFIC CHARACTER.—Plant procumbent. Leaves 8—9, in a whorl, hispid, as are the stems. Heads terminal, pedunculate. Flowers pentamerous; style clavate, much exserted, bifid at the apex. (*G. Don.*)

DESCRIPTION, &c.—This very pretty and lively-looking plant is a native of Persia, where it grows naturally on rocks in the most barren places. It was introduced in 1837, and it has already become such a favourite that few gardens are now without it. The stems are square and somewhat viscid, and the leaves are in whorls. The flowers are in dense heads, and they continue in beauty nearly all the summer. The plant is quite hardy, and it is propagated by seeds or dividing the root. It should have a pure air and sandy soil.

CHAPTER XXIV.

VALERIANACEÆ.

CHARACTER OF THE ORDER.—Tube of the calyx adnate to the ovary; limb variable. Corolla tubularly funnel-shaped, usually 5-lobed. Stamens adnate to the tube of the corolla, but free at the apex, varying in number from one to five. Style filiform; stigmas two or three, free, or combined in one. Fruit membranaceous or subnucamentaceous, indchiscent; sometimes 3-celled with two of the cells vacant, and sometimes 1-celled. (*G. Don.*)

DESCRIPTION, &c.—The principal plants included in this order are the Lamb's Lettuce, and those formerly

known by the general name of Valerian. The genus Valeriana is now, however, divided into three or four new genera. The name of the order is derived from "Valerian," signifying "a cure," from the medicinal properties of the common Valerian (*V. officinalis*).

GENUS I.

PATRINIA, *Juss.* THE PATRINIA, OR YELLOW VALERIAN.*Lin. Syst.* TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Limb of calyx truncate or erect, very short, somewhat 5-toothed. Corolla regular, spurless, bluntly 5-lobed. Stamens five, adnate to the bottom of the tube of the corolla, rarely five. Stigma trigonal-capitate. Capsule 3-celled, crowned by the limb of the calyx, usually having chaff-formed bracteas adhering to it at the base, with one of the cells fertile, and two usually thick. (*G. Don.*)

DESCRIPTION, &c.—All the species of this genus were formerly included in the genus Valeriana, but they are all easily distinguished from the true Valerians by their flowers, which are of a golden yellow. The genus was formed by Jussieu, who named it Patrinia, in honour of M. Patrin, a traveller and collector of plants in Siberia. All the species are quite hardy.

1.—PATRINIA SIBIRICA, *Juss.* THE SIBERIAN PATRINIA.

SYNONYMES.—*P. coronata*, *Fisch.*; *Valeriana Sibirica*, *Lin.*; *V. S. β humilis*, *Gmel.*; *V. rutheica*, *Willd.*; *Fedia Sibirica*, *Vahl*; *Valerianella lutea*, *Mærch.*

ENGRAVING.—*Bot. Mag.* t. 2325.

SPECIFIC CHARACTER.—Stem beset with two rows of hairs; leaves

rather fleshy; primordial ones oblong, lanceolate or spatulate, undivided and obtuse, entire, toothed, serrated, or pinnatifid towards the apex; cauline leaves pinnate, with entire, usually obtuse segments; fruit adnate to the paleæ. (*G. Don.*)

DESCRIPTION, &c.—A pretty little plant, with close clusters of small golden yellow flowers, and partially pinnatifid leaves. It is a native of the Altaic Mountains, whence it was introduced in 1751. It flowers in May and June. The root is black and strong-scented.

2.—PATRINIA RUPESTRIS, *Juss.* THE ROCK PATRINIA.

SYNONYMES.—*Valeriana Sibirica*, *Willd.*; *Fedia rupestris*, *Vahl*.
ENGRAVINGS.—*Bot. Mag.* t. 714; and our *fig. 5* in Plate 42, under the name of *Valeriana Sibirica*.

SPECIFIC CHARACTER.—Stem smoothish or rather downy; leaves membranous, pinnatifid, with lanceolate segments; terminal segments large; corymbs subumbellate; fruit adnate to the paleæ. (*G. Don.*)

DESCRIPTION, &c.—This plant does not possess a peculiar Jasmine-like odour, which is very conspicuous in the preceding species, but in all other respects it is very nearly allied to it. It varies considerably in the leaves, like all the other species of the genus. It is a native of Siberia, whence it was introduced in 1801, and it is quite hardy in British gardens. It is generally propagated by seeds, which it ripens in abundance.

OTHER SPECIES OF PATRINIA.

P. INTERMEDIA, *Ræm. et Schultes.*

A native of Siberia and China, introduced in 1820.

P. SCABIOSÆFOLIA, *Link*; *Swt. Brit. Flow. Gard.*, t. 154; *Lodd. Bot. Cab.* t. 1340.

The flowers are very small. The species is a native of Dalecarlia, whence it was introduced in 1823. It grows best in a dry situation, as too much moisture rots the roots.

P. CERATOPHYLLA, *Hook.*

A native of North America, with white flowers and horny leaves. The roots are thick and fusiform, like those of a carrot, and during the spring months they are collected by the Indians, who bake them on heated stones and use them as food. In a raw state the roots are bitter, and are said to be pernicious.

GENUS II.

CENTRANTHUS, *Dec.* THE SPURRED VALERIAN.*Lin. Syst.* MONANDRIA MONOGYNIA.

GENERIC CHARACTER.—Limb of calyx involute when the flower is in blossom, but afterwards it unfolds into a deciduous pappus, composed of many plumose bristles. Corolla with an obconical tube, which is spurred at the base, and a regular 5-lobed limb. Stamen 1. (*G. Don.*)

DESCRIPTION, &c.—This genus has been divided from *Valeriana* on account of the spur at the base of the flower, which is in fact very conspicuous. *Centranthus* signifies literally Spurred-flower. The species are all natives of Europe, growing generally in chalky soil. They are mostly erect, perennial plants, with erect stems, entire leaves, and the flowers, which are either red or white, produced in corymbose panicles. They are all quite hardy, and change very little from cultivation.

1.—CENTRANTHUS RUBER, *Dec.* THE RED-FLOWERED SPURRED VALERIAN.

SYNONYMS.—*C. maritimus*, *Gray*; *C. latifolius*, *Desf.*; *Valeriana rubra*, *Lin.*

ENGRAVINGS.—*Eng. Bot.* t. 1531; 2d ed. t. 37; and our *fig.* 4 in Plate 42, under the name of *Valeriana rubra*.

SPECIFIC CHARACTER.—Leaves ovate or lanceolate; upper ones unequal at the base, toothed a little; spur one half shorter than the tube, and much longer than the ovary; stamens and pistil exceeding the corolla but a very little. (*G. Don.*)

DESCRIPTION, &c.—This species is well known to every one who has visited Greenhithe or Gravesend, as nothing can exceed the splendid masses it forms on the chalk cliffs in that vicinity. It is, in fact, one of the handsomest of the British wild flowers; though it does not display half its beauty when grown on any but a calcareous soil. The root is sweet-scented, and the stem is somewhat shrubby at the base. There is one variety with narrow leaves, and another with white flowers.

2.—CENTRANTHUS LONGIFLORUS, *Dec.* THE LONG-FLOWERED SPURRED VALERIAN.

SYNONYME.—*C. angustifolius*, *Bieb.*

SPECIFIC CHARACTER.—Leaves lanceolate, linear, quite entire. Spur of corolla about equal in length to the tube, and about twice the

length of the ovary. Stamens and pistil twice the length of the limb of the corolla. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Armenia and Persia, introduced in 1817. It is remarkable for the length of the corollas of its flowers, some of which are more than an inch long. The flowers are red. The plant should be grown in a sandy or calcareous soil; and it is propagated by seeds (which it ripens freely) or division of the root.

3.—CENTRANTHUS ANGUSTIFOLIUS, *Dec.* THE NARROW-LEAVED SPURRED VALERIAN.

SYNONYMS.—*Valeriana rubra* β *Lin.*; *V. angustifolia*, *Cav.*; *V. monandra*, *Vill.*

SPECIFIC CHARACTER.—Leaves linear-lanceolate, quite entire. Spur

one half shorter than the tube of the corolla, and about equal in length to the ovary. Stamens and pistil projecting considerably.

DESCRIPTION, &c.—This is the Spurred Valerian of France and Switzerland, where it grows on chalky cliffs and rocky places. The flowers are red, but their corollas are only half an inch long. The species was introduced in 1759.

There is another perennial species called *C. vernosum*, with white flowers, a native of Corsica, not yet introduced; and one annual species.

GENUS III.

VALERIANA, *Neck.* THE VALERIAN.*Lin. Syst.* TRIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Limb of calyx involute in the time of blossom, but it unfolds itself at last into a deciduous pappus, which is composed of many plumose bristles. Corolla, with an obconical or cylindrical tube, which is equal at the base or gibbeus, but not spurred, with a bluntly five-cleft limb, rarely three-cleft. Stamens three. (*G. Don.*)

DESCRIPTION, &c.—The common Valerian (*V. officinalis*) is well known for its medicinal properties, and the fondness cats have for the smell of its roots; it is not, however, sufficiently ornamental to be worth cultivating as a garden-flower. Of the other species, though they amount to nearly a hundred in number, the only one common in British gardens is *V. dioica*, the common Marsh Valerian.

1.—VALERIANA DIOICA, *Lin.* THE DIOECIOUS, OR MARSH VALERIAN.SYNONYME. —*V. sylvestris*, *Gray.*

SPECIFIC CHARACTER.—Plant glabrous, erect. Stems striated. Radical leaves petiolate ovate, or subsapulate, undivided; cauline leaves pinnatifid, with linear oblong lobes. Flowers dioecious, corymbs of the male flowers loose, of the female ones contracted; lobes of stigma almost combined. Fruit glabrous. (*G. Don.*)

DESCRIPTION, &c.—This plant is a native of Britain, growing freely in chalky soils, and flowering abundantly. It never thrives unless there is a degree of moisture in the soil.

CHAPTER XXV.

DIPSACEÆ.

CHARACTER OF THE ORDER.—Calyx adherent, with a variable limb. Corolla monopetalous, inserted near the top of the calycine tube, usually unequal, four or five cleft. Stamens four, epipetalous. Style one, simple. Fruit indehiscent, membranous, or subnucumetaceous, one-celled, one-seeded, crowned by the limb of the calyx. Seed pendulous, albumen fleshy. (*G. Don.*)

DESCRIPTION, &c.—Very few plants are included in this order, but they are very interesting ones. The principal is the Teazel, or Clothier's Brush (*Dipsacus*), but that plant possesses no beauty to render it deserving of cultivation. The order itself was formerly included in Valerianaceæ; but it differs widely from that order, and agrees much more nearly with Compositæ, as the florets grow in heads on a common receptacle. The plants belonging to Dipsacæ, however, differ from the Compositæ in having distinct stamens and pendulous albuminous seeds. Each flower has also a separate involucl, which has the appearance of a second calyx. *Scabiosa* is the most ornamental genus.

GENUS I.

MORINA, *Tournefort.* THE MORINA.*Lin. Syst.* DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Involucl monophyllous, tubularly campanulate, destitute of indentations spinously dentate on the margin. Calyx with an ovate tube, limb leafy two-cleft, lobes oblong entire, two-cleft. Corolla ringent, with a long tube. Stamens two or four. Stigma peltately capitate. Fruit crowned with the lobes of the calyx, and girded with the involucl.

DESCRIPTION, &c.—Only two species of this genus are known; *M. Persica*, introduced in 1740, but long lost; and *M. longifolia*, a native of the mountains of the north of India, introduced in 1838. This last is a hardy perennial, growing two or three feet high, and flowering freely from July till the end of autumn. Its habit of



1. *Scabiosa caucasica*. 2. *Scabiosa atropurpurea*. 3. *Scabiosa graminifolia*. 4. *Valeriana rubra*.
5. *Valeriana sibirica*. 6. *Crucianella stylosa*.

growth resembles that of *Acanthus mollis*, but the flowers somewhat resemble those of *Verbena Tweediana*, only they are larger and produced in whorls round the stem. The large size of the calyx and involucre, when combined with the comparatively small size of the flowers, gives this plant a coarse and weedy appearance.

GENUS II.

SCABIOSA, *Lin.* THE SCABIOUS.*Lin. Syst.* TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Involucrum of many leaves. Receptacle aggregate, upon a receptacle. Corolla four or five cleft. Stamens four. chaffy. Involucels usually subcylindrical. Limb of calyx attenuated into a neck at the base, and ending in five-awned bristles. Flowers (G. Don.)

DESCRIPTION, &c.—The plants belonging to this genus have all showy flowers, which differ from those of *Morina*, in being produced in heads or masses on a flat receptacle like the daisy, instead of being in whorls round the stem. They also show very little of the calyx and involucels. The genus was formerly very extensive; but modern botanists have separated from it two genera, which they call *Pterocephalus* and *Cephalaria*, the Feathered Scabious being the type of the one, and the Siberian Scabious of the other. There are above fifty species of Scabious, but only two or three are common in gardens.

1.—SCABIOSA CAUCASICA, *Bieb.* THE CAUCASIAN SCABIOUS.

SYNONYMS.—*S. elegans*, *Ram. et Schul.*; *S. connata*, *Horne*; *S. caucasica*, var. *elegans*, *Dec.* entire, glaucous; involucrum very villous; corollas 5-cleft, radiant; base of involucels elongated, longer than the ovate foveolæ; crown of seeds short, 25-nerved; limb of calyx sessile, with exerted bristles. (G. Don.)

ENGRAVINGS.—Bot. Mag. t. 836; and our fig. 1, in Plate 42.

SPECIFIC CHARACTER.—Radical leaves lanceolate, acuminate, quite

DESCRIPTION, &c.—This very handsome species has a tall, erect stem, with a large head of beautiful blue florets in the ray, and whitish florets in the disk, the styles and stamens of which are of a bright pink. The leaves are broad and somewhat silvery. The species is a hardy perennial, flowering in July and August. It is a native of Mount Caucasus, whence it was introduced in 1803.

2.—SCABIOSA GRAMINIFOLIA, *Lin.* THE GRASS-LEAVED SCABIOUS.

SYNONYM.—*S. argentea angustifolia*, *Bauh.*

ENGRAVINGS.—Bot. Reg. t. 835; and our fig. 3, in Plate 42.

SPECIFIC CHARACTER.—Suffruticose at the base; leaves linear, lanceolate, quite entire, of a silvery white; corollas 5-cleft, radiant, base of

involucels elongated, equal in length to the linear foveolæ; crown of seed spreading, 24-nerved; limb of calyx pedunculated; bristles of calyx 5, equal in length to the crown. (G. Don.)

DESCRIPTION, &c.—The flowers are of a light purple; those of the ray are not so numerous as in *S. caucasica*, and they are the same colour as those of the disk. The stamens and pistils are also of the same colour. The leaves are narrow, of a sea-green, and covered with a white silky down. The species is a native of the mountains of Europe, whence it was introduced in 1683. It is quite hardy.

3.—SCABIOSA ATROPURPUREA, *Lin.* THE DARK PURPLE, OR COMMON SWEET SCABIOUS.

SYNONYMS.—*S. peregrina*, *Bauh.*; *S. indica*, *Clus.*; Red-flowered Indian Scabious.

ENGRAVINGS.—Bot. Mag. t. 247; and our fig. 2 in Plate 42.

SPECIFIC CHARACTER.—Stem branched; radical leaves lanceolate-

ovate, lyrate, coarsely-toothed; cauline leaves pinnate-parted, with oblong, toothed, or cut lobes; heads ovate while bearing the fruit; corollas radiant, a little longer than the involucre. (G. Don.)

DESCRIPTION, &c.—This plant is well known in British gardens, under the denomination of the Sweet Scabious, from its honey-like smell. Its flowers are produced from June to October. It varies considerably in

colour from a dark purple to pink, and even white. It is said to be a native of the East Indies, but it was sent here from Spain before 1629. It is a biennial, and new plants should be raised every year from seed sown in May, and transplanted in autumn to flower the following year.

OTHER SPECIES OF SCABIOUS.

These are very numerous; but they are so rarely seen in British gardens, that it is only necessary to describe two or three of the most common.

S. WEBBIANA, *D. Don, Bot. Reg. t. 717.*

A small-flowered plant, of no beauty; a native of Mount Ida, introduced in 1819.

S. SUCCISA, *Lin.*

A British plant, called the Devil's Bit, from the singular appearance of its main root, which looks as though the end had been bitten off.

S. OCHROLEUCA, *Dec.*

A well-known and very handsome garden species, with cream-coloured flowers; a native of Germany, introduced in 1597.

CHAPTER XXVI.

COMPOSITÆ.

CHARACTER OF THE ORDER.—Limb of calyx wanting or membranaceous, or divided into bristles, paleæ, or hairs. Corolla five-toothed or five-lobed, tubular, ligulate, or bilabiate, inserted on the top of the ovarium. Stamens five, distinct, perigynous. Anthers combined, seldom free. Ovarium adhering to the tube of the calyx, one-celled, one-seeded. Stylo one. Stigmas two. Fruit an achenium crowned by the limb of the calyx. Albumen none. Usually herbs, rarely shrubs. Leaves exstipulate. Flowers disposed in heads on a receptacle, or surrounded by an involucre, the scales of which are sometimes mixed with the flowers, and are then called paleæ. (*G. Don.*)

DESCRIPTION, &c.—The Compositæ are so natural an order, that any person who has seen a daisy will know the greater part of them at first sight; that is to say, all that have the florets of the ray ligulate, and those of the disk tubular. The thistle-headed plants form another easily-recognised section, as their florets are all tubular; and the succory-headed plants, the florets of which are all ligulate, form another division. The Compositæ are generally free-growing, hardy plants, which require very little culture.

GENUS I.

ASTER, *Lin.* THE ASTER, OR STARWORT.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Flowers of the ray ligulate, female; those of the disk hermaphrodite, tubular. Receptacle rather convex. Involucral scales in three or four series; spreading and ciliated. Fruit obovate, compressed. Pappus double, deciduous.

DESCRIPTION, &c.—The small-flowered perennial plants included in this genus are well known as Michaelmas Daisies, and as giving a lively appearance to the flower-garden in autumn. The genus Aster is a very extensive one; and though modern botanists have made nearly twenty new genera out of it, they have still left a hundred species remaining in it. Nearly all the species are very ornamental, and well deserving of cultivation in a flower-garden.

1.—*ASTER ALPINUS*, *Lin.* THE ALPINE ASTER, OR STARWORT.SYNONYME.—*A. montanus*, *Bauh.*ENGRAVINGS.—*Bot. Mag.* t. 199; and our *fig.* 2 in Plate 43.

SPECIFIC CHARACTER.—Leaves subspathulate, hairy, entire. Stem simple, one-flowered.

DESCRIPTION, &c.—This very pretty little plant does not grow more than six inches high on its native mountains, and even in gardens does not exceed the height of six or eight inches. Its flowers are large and showy, the disk being yellow and the ray purple. It should be grown in moist, stiff soil, and if planted on rock work, it should be frequently watered. It is a native of the Alps of Austria and Switzerland, whence it was introduced in 1658. It flowers in May and June, continuing in blossom a month or six weeks. It is very well adapted for the beds in a geometrical garden, from the dwarfness of the plants and the large size and showy colours of the flowers.

2.—*ASTER AMELLUS*, *Lin.* THE ITALIAN MICHAELMAS DAISY.SYNONYMS.—*A. vulgaris*, *Bauh.*; *A. atticus*, *Dod.*ENGRAVINGS.—*Bot. Reg.* t. 340; and our *fig.* 1 in Plate 43.

SPECIFIC CHARACTER.—Leaves oblong-lanceolate, entire, scabrous. Branches corymbose. Calyx imbricated, subsquamose.

DESCRIPTION, &c.—This very handsome species has been supposed to be the Amellus of Virgil, as it is a native of Italy and other parts of the south of Europe, where it grows wild in meadows. In England it is a hardy perennial plant, flowering from August to September. It was introduced before 1596, and was one of the plants grown by Gerard in his garden in Holborn, then a suburb of London.

OTHER SPECIES OF ASTER.

All the numerous species of *Aster* bear so very strong a resemblance to each other that I have not thought it necessary to describe them in detail, but will merely mention a few of the most ornamental species below.

A. NOVÆ ANGLIÆ, *Lin.*; *Bot. Reg.* 183.

This very showy species is remarkable for the rich dark purple of the florets of the ray, all of which bend downwards. The stem, footstalks, and the tip of the bracts are all pink, and there is a variety which has the ray pink also. It is a native of North America, whence it was introduced in 1710.

A. GRANDIFLORUS, *Lin.*; *Bot. Reg.* t. 273.

As the last-mentioned *Aster* was the first species introduced from North America, this was probably the second, as it was sent home by Catesby in 1720. Since that period, more than sixty American species have been described and introduced. It is a hardy, tall-growing plant, but badly named, as the flowers are by no means large.

A. SALSUGINOSUS, *Rich.*; *Bot. Mag.* t. 2942.

A handsome species, not branched, and with single flowers. It is a native of the salt plains of the Athabosca, in North America, where it was found by Dr. Richardson, during his journey with Captain Franklin, in search of the North-west Passage. It was introduced in 1828, and it flowers in May.

A. SPECTABILIS, *Ait.*; *A. ELEGANS*, *Willd.*; *Bot. Reg.* t. 1527.

A very handsome species; a true Michaelmas Daisy, with the flowers in corymbs, and appearing in September and October. A native of North America, introduced in 1777.

A. PATENS, *Swt. Brit. Flow. Gard.* t. 234.

A rather small-flowered, and not very handsome, American species; introduced in 1773.

A. CORDIFOLIUS, *Nees*.

A very small-flowered species ; a native of North America, flowering in September ; introduced in 1759.

A. PALLENS, *Willd.* ; *Bot. Reg.* t. 1509.

A very handsome Michaelmas Daisy, with small but showy flowers. A native of North America ; introduced in 1775.

A. CÆSPITOSUS, *Hort.* ; *Bot. Reg.* t. 1571.

A dwarf compact plant, with pale lilac flowers. A native of North America, flowering in September. The year of introduction is not known.

A. EMINENS, *Nees* ; A. JUNCEUS, *Ait.* ; A. LONGIFOLIUS, *Lam.* ; A. MUTABILIS, *Hort.* ; A. LÆVIGATUS, *Pursh.* ; A. SALICIFOLIUS, *Hort.* ; *Bot. Reg.* t. 1614.

This very handsome plant, which is known by so many names, is easily distinguished by its long elegant leaves, which curve and droop gracefully, in a feathery manner, on each side. It grows five or six feet high, and bears, towards the latter end of September, a profusion of bright lilac flowers. It was introduced in 1798, from North America ; and it is quite hardy in British gardens.

A. ALBUS, *Hort.* ; A. LONGIFOLIUS, *var.* VIRGINICUS, *Lam.* ; A. VIRGINICUS, *Nees* ; A. EMINENS, *var.* VIRGINEUS, *Lindl.* *Bot. Reg.* t. 1656.

An American species, with broad leaves and white flowers ; frequently growing six or seven feet high. Introduced in 1826.

A. ACUMINATUS, *Michx.* ; DIPLOSTEPHIUM ACUMINATUM, *Dec.* ; *Bot. Mag.* t. 2707.

An American species, with broad pointed leaves, and small white flowers. Introduced in 1807.

A. CORDIFOLIUS, *Lin.* ; *Bot. Reg.* t. 1597.

A North American species, with heart-shaped leaves and small pale flowers. Introduced in 1800.

A. CONCINNUS, *Willd.* ; *Bot. Reg.* t. 1619.

A very neat plant, growing about three feet high, and covered with clusters of small neat flowers which appear in September and October. It was introduced in 1800.

A. LÆVIGATUS, *Willd.* ; *Bot. Mag.* t. 2995.

A singular-looking plant, from the length and narrowness of the florets of the ray, which grow widely apart in a star-like manner. The leaves are broad, and winged down the petiole. The species is a native of North America, whence it was introduced in 1794.

A. CORIDIFOLIUS, *Michx.* ; *Bot. Reg.* t. 1487.

A very curious-looking plant, with very small leaves and very small flowers, growing near New York, whence it was introduced in 1822. It does not flower till October.

A. CYANEUS, *Hoff.* ; *Bot. Reg.* t. 1495.

An American species, with glaucous leaves and blue flowers. Introduced in 1789.

A. LÆVIS, *Lin.* ; *Bot. Reg.* t. 1500.

Nearly allied to the preceding species, but with very green leaves and very pale blue flowers. Introduced from America in 1753.

A. FRAGILIS, *Willd.* ; *Bot. Reg.* t. 1337.

An American species, of no beauty ; introduced in 1800.



1 *Aster amellus* 2 *Aster alpinus* 3 *Erigeron glabellum* 4 *Senecio speciosa*
 5 *Leptostelma maxima* 6 *Dipterocarpus incurvus* 7 *Bellium Bellidioides*

A. AMYGDALINUS, *Lam.*; A. UMBELLATUS, *Ait.*; DIPLOSTEPHIUM AMYGDALINUM, *Dec.*; CHRYSOPSIS UMBELLATUM, *Nees*; *Bot. Reg. t. 1517.*

A very handsome plant, with white flowers growing in a compact head. It is a native of North America, whence it was introduced in 1699. It grows about six feet high, and flowers in September.

A. CORYMBOSUS, *Ait.*; A. CORDIFOLIUS, *Michx.*; EURYBIA CORYMBOSA, *Nees*; BIOTIA CORYMBOSA, *Dec.*

The flowers are white, with a large yellow disk, and are produced in loose corymbs. A dwarf American species, introduced in 1765.

A. PUNCTATUS, *Wald. et Kit.*; A. DESERTORUM, *Fisch.*; A. ACRIS, *Lin.*; A. HYSSOPIFOLIUS, *Cav.*; GALATELLA PUNCTATA, *Nees*; G. INTERMEDIA, *Cass.*

A native of the salt marshes of Hungary, &c., whence it was introduced in 1683. It grows a compact bush about two feet high, and flowers in July. The florets of the ray are long and recurved, and their purple hue forms a fine contrast with the golden yellow projecting stamens.

GENUS II.

DIPLOPAPPUS, *Cass.* THE DIPLOPAPPUS.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—The ray flowers in one series, feminine. Disk hermaphrodite. Pappus in two series. Corollas of the disk flowers regular. Achenium rough.

DESCRIPTION, &c.—This genus has been separated from the genus *Aster*, on account of the pappus being in two rows; and hence the name, which signifies Double-pappus. Most of the species are greenhouse shrubs.

1.—DIPLOPAPPUS INCANUS, *Lindl.* THE HOARY CALIFORNIAN ASTER.

ENGRAVINGS.—*Bot. Reg. t. 1693*; and our *fig. 6*, in Plate 43.

SPECIFIC CHARACTER.—Suffruticose. Leaves linear, obtuse, glau-

consly hairy, somewhat stem-clasping. Stem corymbose; branches one-flowered. Involucre squarrose.

DESCRIPTION, &c.—This very handsome plant is a native of California; introduced in 1832. Like all the Californians, it requires a dry, open situation, and is killed by much wet. It was at first supposed tender, but it is now found to be more injured by wet than frost.

GENUS III.

ERIGERON, *Willd.* THE FLEABANE.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre imbricated. Receptacle naked. Florets of the ray very narrow. Pappus hairy; hairs rough.

DESCRIPTION, &c.—This genus contains several British plants which, under the name of Fleabane, are well known to persons residing in the country; and which were formerly in much repute, as their smell, when dried, was supposed to drive away fleas, and other noxious insects. The British species have no beauty to recommend them; but some of the American species are well deserving of cultivation. The generic name of *Erigeron* is said to be derived from the Greek, and to signify To-grow-old-soon; but this name does not appear very applicable, as some of the flowers are remarkable for the long time they continue in perfection.

1.—ERIGERON SPECIOSUM, *Dec.* THE SHOWY FLEABANE.

SYNONYME.—*Stenactis speciosa*, *Lindl.*

ENGRAVINGS.—*Bot. Reg.* t. 1577; and our *fig. 4*, in Plate 43, under the name of *Stenactis speciosa*.

SPECIFIC CHARACTER.—Stem erect, corymbose at the apex, and

many-flowered, glabrous. Leaves ciliated, acute, entire; radical ones spatulate, cauline ones ovate-lanceolate, slightly stem-clasping. Florets of the ray twice as long as the involucre.

DESCRIPTION, &c.—This splendid plant is sometimes grown as an annual, because, when raised from seeds, the plants will flower the first year. It is, however, a true perennial, as it will live an indefinite number of years under favourable circumstances, and it may be propagated by dividing the root. It is a native of California, whence it was introduced in 1830. It is generally propagated by seeds, which are sold in the seed-shops under the name of *Stenactis speciosa*, the name given to the plant by Dr. Lindley.

2.—ERIGERON GLABELLUM, *Nutt.* SMOOTH-LEAVED FLEABANE.

ENGRAVINGS.—*Bot. Mag.* t. 2923; and our *fig. 3* in Plate 43.

SPECIFIC CHARACTER.—Leaves lanceolate, entire, smooth, ciliated; radical ones subspathulate, nerved. Stem and involucre pubescent.

Flowers subcorymbose. Florets of the disk numerous, linear and extremely narrow.

DESCRIPTION, &c.—This plant, though very inferior in beauty to the preceding species, is yet useful in a flower-garden, from its flowers appearing in autumn, and remaining till Christmas. Dr. Richardson found it between the latitudes 54° and 64° North; and Nuttall discovered it in the plains of the Missouri. It was introduced in 1827.

OTHER SPECIES OF ERIGERON.

E. BELLIDIFOLIUM, *Pursh*; *E. PULCHELLUM*, *Michx.*; *Bot. Mag.* t. 2402.

This is a very handsome species, with pale bluish-lilac flowers, and broad radical or root leaves. It is a native of North America, where it is called Poor Robin's Plantain. It was introduced in 1790.

E. PULCHELLUM, *Dec.*; *ASTER ALWARTENSIS*, *Lodd.*; *Bot. Mag.* t. 2321.

A very showy dwarf species, with broad, radical leaves, and flowers resembling those of *E. speciosum*, but having the florets of the ray of a bright rose colour. It was introduced in 1807, by seeds sent from Moscow, as it is a native of Caucasus; but it was soon lost, and is not now in the country.

E. VILLARSII, *Dec.*; *Bot. Reg.* t. 583.

A native of Piedmont, with small purple flowers; introduced in 1804.

GENUS IV.

LEPTOSTELMA, *D. Don.* THE MEXICAN DAISY.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucre equal, hemispherical. Receptacle chaffy. Florets of the ray feminine, and of the disk hermaphrodite. Pappus hairy, hairs long and fine.

DESCRIPTION, &c.—This plant was separated from the genus *Erigeron* by the late Professor Don, on account of its chaffy receptacle, the receptacle in *Erigeron* being naked. The name of *Leptostelma* signifies "slender crown," in allusion to the length and delicacy of the hairs of the pappus.

1.—LEPTOSTELMA MAXIMA, *D. Don.* THE GREAT MEXICAN DAISY.SYNONYME.—*Erigeron maximum*, *Otto.*ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser. t. 38; and our *fig.* 5 in Plate 43.

SPECIFIC CHARACTER.—Stem erect, fistulose, branching at the apex. Leaves stem-clasping, dentately serrated. Flowers terminal, corymbose.

DESCRIPTION, &c.—This very showy plant grows seven feet high, and makes a magnificent appearance when covered with its large panicles of flowers, which appear from the beginning of September to the end of November. In severe winters it requires a slight protection. It is a native of Mexico, whence it was introduced in 1828.

GENUS V.

BELLIUM, *Lin.* THE LESSER DAISY.*Lin. Syst.* SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucre many-leaved, in two series. Receptacle conical, naked. Florets of the ray feminine, and those of the disk hermaphrodite. Achenium wedge-shaped, compressed. Pappus paleaceous, double.

DESCRIPTION, &c.—The three species contained in this genus bear so much resemblance to those belonging to the genus *Bellis*, the Daisy, that the name of *Bellium*, or Daisy-like, has been given to them. They have been separated from *Bellis* on account of their chaffy pappus. They are all hardy perennials, natives of Europe.

1.—BELLIUM BELLIDIODES, *Lin.* THE COMMON LESSER DAISY.SYNONYMS.—*Bellis droseræfolia*, *Gouan*; *B. maritima*, *Bocc.*ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser. t. 175; and our *fig.* 7 in Plate 43.

SPECIFIC CHARACTER.—Leaves spatulate, entire. Florets of the disk four-toothed, and with four stamens. Stigmata lanceolate-acute. Pales of the pappus truncate.

DESCRIPTION, &c.—This very pretty little plant is a native of Corsica and the Balearic Isles, in dry maritime pastures, where it grows in dense tufts, sending up its flower-stalks early in May, and continuing in flower all the summer. It is quite hardy in dry situations, but it is easily killed by wet.

OTHER SPECIES OF BELLIUM.

There are only two other species of *Bellium*, viz. *B. minutum*, a dwarf plant with white flowers, a native of the Levant, introduced in 1772; and *B. crassifolium*, so named from its thick, fleshy leaves, also with white flowers. This last species is a native of Sardinia, introduced in 1832; and it is figured in Sweet's *British Flower-Garden*, second series, t. 278.

GENUS VI.

INULA, *Lin.* THE ELE CAMPANE.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucrum imbricated, the scales spreading, more or less leafy, especially the outer ones. Receptacle naked. Anthers with two bristles at the base. Pappus simple. (*Smith.*)

DESCRIPTION, &c.—All the species of this genus have showy yellow flowers; but they are seldom grown in gardens on account of their rough coarse foliage. The name of *Inula* is supposed to be a corruption of *Helenium*, and the latter name to be derived from Helen, in allusion to the beauty of Helen, and the cosmetic properties

attributed to the Elecampane, the plant to which the name was originally applied. All the species are said to possess medicinal qualities, and the common Elecampane is highly aromatic. There are many species, but only one is common in gardens.

1.—*INULA GLANDULOSA*, *Bieb.* THE GLANDULOUS ELECAMPANE.

SYNONYMS.—*I. orientalis*, *Lam.*; *I. grandiflora*, *Willd.*; *Aster orientalis*, *Tourn.*

ENGRAVINGS.—*Bot. Mag.* t. 1907; and our *fig. 2*, in Plate 44.

SPECIFIC CHARACTER.—Leaves sessile, oblong, obsolete serrated, serratures glandulose. Stem hairy, one-flowered. Calycine scales lanceolate, billose.

DESCRIPTION, &c.—This species has large golden-yellow flowers, which have a star-like appearance from the long, curved florets of the ray. The leaves are also remarkable, particularly those of the stem, for being set round the margin with dark brown or black spots, which are the glands from which the species takes its name. These glands are, however, wanting in the root-leaves. The species is a native of Georgia and Mount Caucasus, whence it was introduced in 1804. It is propagated by dividing the roots, or by seeds which ripen freely.

GENUS VII.

TELEKIA, *Less.* THE TELEKIA.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Florets of the ray in one series. Achenium linear, elongated, many-sided. Pappus dentated, and crown-shaped. Subcartilaginous, and uniform.

DESCRIPTION, &c.—Showy plants, natives of Europe. The origin of the name is not known.

1.—*TELEKIA SPECIOSA*, *Less.* THE SHOWY TELEKIA.

SYNONYMS.—*Molpadia suaveolens*, *Cass.*; *Bupthalmum speciosum*, *Schreb.*; *B. cordifolium*, *Waldst. et Kit.*, *Inula Caucasica*,

Pers.; *I. macrophylla*, *Bieb.*

ENGRAVINGS.—*Bot. Mag.* t. 3466; and our *fig. 1*, in Plate 44.

DESCRIPTION, &c.—This magnificent plant generally grows six or eight feet high, with most luxuriant foliage. The leaves, Sir W. J. Hooker tells us in the *Botanical Magazine*, are "often a foot in length," and proportionately broad. The flowers are very large, and of a golden-yellow. It is a native of the provinces near the Black Sea, whence it was introduced in 1739. It is quite hardy, and will flower in any common garden soil. It flowers in July and August; and it is propagated by seeds or division of the root.

GENUS VIII.

SILPHIUM, *Lin.* THE SILPHIUM.

Lin. Syst. SYNGENESIA NECESSARIA.

GENERIC CHARACTER.—Receptacle chaffy. Pappus two-cleft. Involucre squarrose.

DESCRIPTION, &c.—The derivation of the name of this genus is not known with certainty. The species have all yellow flowers, and they are all natives of America.

1.—*SILPHIUM TRIFOLIATUM*, *Lin.* THE TRIFOLIATE SILPHIUM.

SYNONYME.—*S. tenuifolium*, *Michx.*

ENGRAVINGS.—*Bot. Mag.* t. 3355, and our *fig. 3* in Plate 44.

SPECIFIC CHARACTER.—Stem angular, glabrous. Leaves broadly

lanceolate, spreading, and three or four disposed in a whorl round the stem. Panicle branched.

DESCRIPTION, &c.—A native of the southern states of North America, whence it was introduced in 1755.







1. *Helicium speciosa*. 2. *Inula glandulosa*. 3. *Silphium trifoliatum*. 4. *Ratibida columnaris*.
 5. *Rudbeckia pinnata*. 6. *Rudbeckia triloba*. 7. *Chrysostemma tripteris*

The stem is five or six feet high, and the flowers, which somewhat resemble those of the perennial sunflower, appear in July and August. The species is quite hardy.

S. PERFOLIATUM, *Lin.*; Bot. Mag. t. 3354.

This species differs chiefly in the leaves, which are not verticillate, but grow two together embracing the stem. It is also a native of the southern states of North America, and was introduced in 1766.

GENUS IX.

RUDBECKIA, *Lin.* THE RUDBECKIA.

Lin. Syst. SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Florets of the ray neuter. Involucre many-leaved, scales in nearly equal series, spreading. Achenium angular, crowned with a four-toothed pappus. Receptacle chaffy, conical.

DESCRIPTION, &c.—This well-known genus was named in honour of the celebrated Swedish botanist Rudbeck, who was the predecessor of Linnæus in the professor's chair at Upsal. All the species are very handsome, and they are all distinguished by the projecting conical receptacle. Several new genera have been formed out of the Linnæan genus Rudbeckia, but I have only adopted one, viz. Echinacea, which embraces all the purple-flowered kinds; and I have retained all the yellow-flowered species in the old genus.

1.—RUDBECKIA TRILOBA, *Lin.* THE THREE-LOBED RUDBECKIA.

SYNONYMS.—*Centrocarpha aristata*, *D. Don*; *R. aristata*, *Sol.*;
R. subtomentosa, *Pursh.*

ENGRAVINGS.—Bot. Reg. t. 525; and our *fig. 6*, in Plate 44.

SPECIFIC CHARACTER.—Plant hairy. Lower leaves three-parted; upper ones undivided, broadly lanceolate.

DESCRIPTION, &c.—This species is remarkable for the number of florets which it has in its ray, being only eight, and for the distance they are apart from each other. It is a native of Carolina, whence it was introduced before 1699, and it is quite hardy in British gardens, only requiring to be grown in tolerably good soil. It is propagated either by division of the root, or by seeds.

2.—RUDBECKIA PINNATA, *Lin.* THE PINNATED RUDBECKIA.

SYNONYME.—*Obeliscaria pinnata*, *Dec.*

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 146; and our *fig. 5*, in Plate 44.

SPECIFIC CHARACTER.—Stem furrowed, hispidly pubescent. Radical

leaves pinnate; stem leaves lobate or ternate, undivided at the apex. Leaflets lanceolate, acute, subserrated. Receptacle elongated, chaffy. Pappus entire.

DESCRIPTION, &c.—This species has also only eight florets in the ray, but the florets are broad and toothed at the tip. The receptacle is elongated and chaffy, the chaff enclosing the seed. The plant grows about five feet high, and is very handsome. It is quite hardy in dry soil, but is easily killed by too much moisture. It is increased by dividing the root, as the seeds seldom ripen. It is a native of Carolina, and was introduced in 1803. It flowers from June to October.

3.—RUDBECKIA COLUMNARIS, *Pursh.* THE COLUMN-BEARING RUDBECKIA.

SYNONYMS.—*R. columnifera*, *Fras.*; *R. Tagetes*, *James*; *Ratibida columnaris*, *D. Don*; *R. sulcata*, *Raf.*; *Obeliscaria columnaris*, *Dec.*

ENGRAVINGS.—Bot. Mag. t. 1601; Swt. Brit. Flow. Gard. 2d. ser.

t. 361; and our *fig. 4*, in Plate 44, under the name of *Ratibida columnaris*.

VARIETY.—*Ratibida columnaris pulcherrima*, *D. Don*; *Obeliscaria pulcherrima*, *Dec.*

DESCRIPTION, &c.—The stem and leaves are of a greyish green, and rough with short bristly hairs. The stem

is two or three feet high, wiry, angular, and furrowed; and though slender, it is perfectly erect from its rigidity. The leaves of the variety are distantly alternate, and deeply pinnatifid; the florets are generally only five in number, but they are very broad and handsome. In the species there are generally eight florets. Professor Don made this species a separate genus under the name of *Ratibida*, from the seeds having a slight fringe-like membrane, and the pappus being in the form of a short ciliated crown. The flowers are sweet-scented, and they appear in August and September.

GENUS X.

ECHINACEA, *Mœnch.* THE PURPLE RUDBECKIA.

Lin. Syst. SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Involucre many-leaved in several rows, squamose. Receptacle conical, chaffy; chaff acuminate, rigid deciduous. Florets of the ray ligulate, neuter; those of the disk hermaphrodite, funnel-shaped, five-toothed, tube very short, mouth abruptly dilated. Stigmata elongated, acuminate, recurved, and papillosely hispid. Achenium quadrangular, with a membranaceous crown, acuminate, bristly.

DESCRIPTION, &c.—This genus was first proposed by *Mœnch*, and it was adopted by *Cassine*, and it is chiefly distinguished by the structure of its pappus, and by the shorter tube of the florets of the disk. The name of *Echinacea* is from *Echinos*, a hedge-hog, in allusion to the thorniness of the involucre. This genus comprises all the *Rudbeckias* which have purple flowers.

1.—ECHINACEA PURPUREA, *Dec.* THE COMMON PURPLE RUDBECKIA.

SYNONYMES.—*Rudbeckia purpurea*, *Lin.*; *Dracunculus Virginianus*, *Moris.*

ENGRAVINGS.—*Bot. Mag.* t. 2; and our *fig. 1*, in Plate 45.

SPECIFIC CHARACTER.—Leaves lanceolate-ovate, alternate, entire. Florets of the ray bifid.

DESCRIPTION, &c.—This species is easily distinguished by the great length of the florets of the ray, which are pendulous and recurved at the point. It is a native of Carolina and Virginia, whence it was introduced in 1699.

2.—ECHINACEA SEROTINA, *Dec.* THE LATE-FLOWERING PURPLE RUDBECKIA.

SYNONYMES.—*Rudbeckia serotina*, *Lin.*; *R. purpurea*, *var. serotina*, *Nutt.*; *R. speciosa*, *Link.*

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 4; and our *fig. 4*, in Plate 45.

SPECIFIC CHARACTER.—Stem hispid. Lower leaves broadly ovate, attenuated at the base, remotely dentated, rough; stem leaves lanceolate-ovate, and acuminate, nearly entire. Florets of the ray spreading, three-toothed at the apex.

DESCRIPTION, &c.—This species is a native of North America, whence it was introduced in 1816. It begins flowering in July, and continues producing a succession of blossoms till November.

3.—ECHINACEA HETEROPHYLLA, *D. Don.* THE VARIOUS-LEAVED ECHINACEA.

SYNONYMES.—*Coreopsis heterophylla*, *Cav.*; *Simsia heterophylla*, *Pers.*; *Ximenesia Cavanillesii*, *Spreng.*; *Helianthus glutinosus*, *Sesse et Moc.*

ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser. t. 32; and our *fig. 2*, in Plate 45.

SPECIFIC CHARACTER.—Radical leaves fiddle-shaped. Palea membranaceous, longer than the florets.

DESCRIPTION, &c.—This species is a native of Mexico. As it does not flower till October, it does not ripen its seeds, but is propagated by dividing its large tuberous root.

4.—ECHINACEA DICKSONII, *Lindl.* MR. DICKSON'S ECHINACEA.

ENGRAVINGS.—*Bot. Reg.* for 1838, t. 27; and our *fig. 3*, in Plate 45.

SPECIFIC CHARACTER.—Radical leaves fiddle-shaped, subtrilobate, and subdentate; cauline ones ovate-lanceolate. Palea shorter than the florets.

DESCRIPTION, &c.—This species grows about a foot high, and flowers from the beginning of August to the end of September. It has tuberous roots, like the dahlia.







1. *Echinacea purpurea*. — 2. *Echinacea heterophylla*. — 3. *Echinacea Duboisi*. — 4. *Echinacea serotina*.

GENUS XI.

CHRYSOSTEMMA, *Less.* THE GOLDEN CROWN.*Lin. Syst.* SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Head many-flowered, heterogamous. Florets of the ray neuter, in one series, ligulate; those of the disk hermaphrodite, tubular, five-toothed. Involucre in two series, scales leafy, adhering at the base; external ones few, slender, and spreading, internal ones erect, oval-oblong, subscabrous at the margin. Receptacle flat, palea linear, very narrow or thread-like. Style branched, and divided into filiform segments. Achenium flatly compressed, obvate, elliptic, angles winged at the margin. Pappus crown-shaped, lacinated.

DESCRIPTION, &c.—This genus contains only one species. The name of *Chrysostemma* is, literally, golden crown, in allusion to the colour of the flowers.

1.—CHRYSOSTEMMA TRIPTERIS, *Less.* THE TRIPARTITE-LEAVED CHRYSOSTEMMA.SYNONYME.—*Coreopsis tripteris*, *Lin.*ENGRAVINGS.—*Bot. Mag.* t. 3583; and our *fig. 7* in Plate 44.

SPECIFIC CHARACTER.—Leaves opposite, subpedate, pinnatifid. Upper ones trisected, segments entire.

DESCRIPTION, &c.—This plant was introduced into English gardens in 1737 from North America. It is a showy plant, growing five or six feet high, and producing abundance of flowers from August till the stems are killed down to the ground by the frost. It is propagated by dividing the root.

GENUS XII.

DAHLIA, *Cav.* THE DAHLIA.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre double; exterior many-leaved; interior eight-parted. Receptacle flat, chaffy. Flowers of the disk tubular, hermaphrodite; those of the ray ligulate, female or neuter. Achenium naked.

DESCRIPTION, &c.—Few flowers are now better known, or more generally cultivated, than the Dahlia; but, notwithstanding its present popularity, its early history is not generally known. The first printed account of the Dahlia is said to be in Hernandez's *History of Mexico*, published in Madrid in 1651; in which two species are figured under the name of *Acocotli*. Both of these are single flowers, and one appears to be *D. crocata*, and the other *D. variabilis* or *superflua*. There was, however, an Italian work on the Natural History of Mexico, published at Rome about the same time, which had not only a single but a double Dahlia figured in it, under the truly Mexican-sounding name of *Cocoxochill*. In both works the plants are described as having tuberous roots, which have a strong and bitter taste; and Hernandez says that the Mexicans used these roots medicinally as a tonic. The next notice of the plant was by M. Thiery Menonville, who was sent to Mexico in 1787 by the French government to endeavour to steal the cochineal insect and its plant from the Spaniards. This botanist only saw some Dahlias growing in a garden near Guaxaca, and he describes them as having large aster-like double flowers, stems as tall as a man, and leaves like those of the elder. In 1789, *D. variabilis* was discovered in a wild state in Mexico by Baron Humboldt, and sent by him to the Abbé Cavanilles, then Professor of Botany of the Botanic Garden at Madrid. The Marchioness of Bute was at that time a great patroness of floriculture in England, and being in correspondence with the Professors at the different botanic gardens in Europe, Cavanilles sent her some of the seeds the same year that he received them. One of the seedlings raised by Cavanilles produced semi-double flowers in October 1790, and a figure of it was published in the following January in Cavanilles' *Icones Plantarum*, in which the genus was named *Dahlia*, in honour of Andrew Dahl, a Swedish botanist; and the plant figured, which is the same as that now called *D. variabilis*, was christened *D. pinnata*.

Cavanilles afterward figured in the same work two other Dahlias, which he called *D. rosea*, and *D. coccinea*. Tubers and seeds of these three kinds were sent to Paris in 1802, under the idea that the tubers would be eatable; but they were found so bitter and pungent, that they "disgusted both man and beast." In the mean time Lady Bute had raised, from the seeds sent her by Cavanilles, some young plants, which she kept in pots in a greenhouse; but in the course of two or three years afterwards they all died without ripening seeds. In 1802, an English nurseryman named Fraser happening to be in Paris, obtained some of the seeds sent from Madrid of *D. coccinea*, but the flowers produced by his seedlings were bright orange instead of scarlet. Mr. Fraser's plants were kept in a greenhouse, and died without ripening seed. In 1803, Mr. Woodford, a gentleman residing near Vauxhall, procured *D. rosea* from Paris, and it flowered with him in the autumn. In 1804, M. Thouin published a paper on the Dahlia in the *Annales d'Histoire Naturelle*, in which he suggested propagating the plant by dividing its fascicles of tuberous roots; keeping the roots in a state of rest during winter, and allowing the plants to have large pots full of rich earth. In the spring of the same year (1804), Lady Holland sent some seeds of *D. variabilis*, *D. rosea*, and *D. coccinea* from Madrid to England, having been very much struck the previous autumn with the beauty of their flowers in the Madrid Botanic Garden. These seeds were confided to the care of Mr. Buonaiuti, Librarian to Lord Holland, by whose directions they were sown in May on a hotbed in the garden at Holland House, Kensington, where some of the seedlings flowered in the autumn of the same year. Mr. Buonaiuti was very fond of flowers, and knowing that the seeds of the Dahlia had never ripened in England, he took great pains with those of the Holland House seedlings; and by constantly pressing out the moisture which is collected among the florets after the calyx closes, a number of seeds were ripened in 1805, which produced new plants in the following year. In 1807, Mr. Salisbury tried some Dahlias for the first time in the open ground in his garden at Mill Hill. About this time Professor Willdenow attempted to change the name of Dahlia into Georgina, in honour of a Russian botanist named Georgi, under pretence of a similar name to Dahlia having been previously given to another plant by Thunberg. Thunberg's plant was, however, named in honour of an English botanist, Mr. Dale, and was called Dalea (see vol. i. p. 143). In 1808, Count Lelieur began to pay some attention to the culture of the Dahlia in the neighbourhood of Paris; and he introduced into the garden at St. Cloud, from Malmaison, three varieties, from which he raised numerous others. About the same time, M. Otto, curator of the Botanic Garden at Berlin, obtained numerous varieties by hybridization, some of which were very beautiful. When the Continent was thrown open in 1814, the British amateurs and florists who visited it were quite astonished at the beauty of the Dahlias in the French gardens; and since that period, many hundreds of Dahlias have been raised in Great Britain of great beauty of form and brilliancy of colour.

The Dahlia, in its native state, is one of the radiate-flowered Compositæ, having eight ligulate florets in the ray, and numerous tubular ones in the disk. The ray florets are vulgarly called the petals, and the flower becomes double when these ray florets are greatly increased in number, and those of the disk disappear. When this is not the case, the flower is considered imperfect, and cannot be exhibited, as it is said to show its eye or disk. Sometimes the ray florets become tubular, when they are said to be quilled. Each floret has a membranous, half transparent bract, and when the florets are carefully picked out so as to leave all the bracts remaining, the Dahlia appears changed into a kind of everlasting flower of considerable delicacy and beauty. In judging of a flower exhibited at a show, the attention is directed to three points, viz. form, colour and size; and of these form is considered by far the most important. The form of a show Dahlia should be as nearly round as possible,

with the largest florets at the edge, and decreasing gradually towards the centre, where frequently they are raised into what is called a crown. The outer florets should be broader and flatter than the inner ones, which are always more or less tubular, preserving the character of disk florets, though of the same colour as those of the ray. When there is a crown, the florets composing it should be placed quite close together, so as entirely to hide the disk; as, if either green or yellow be seen in the centre of any Dahlia, it is disqualified from becoming a prize flower. The colour is of no consequence, provided it be clear and bright; and the size is also of little importance, unless the Dahlia be naturally one with large-sized flowers.

The greater number of Dahlias now grown in gardens, have been raised from *D. variabilis*, which varies so much from seed, that dark and light crimson, dark and light scarlet, salmon-coloured, lilac, dark purple, and striped flowers, have been raised from the seeds taken out of one single head of florets.

D. coccinea or *frustanea* only varies from scarlet to orange and yellow, and rarely produces double flowers. It is said not to hybridize with *D. variabilis*. The most common colours among Dahlias are purple and crimson in various shades. A pure scarlet was at first rare, but it is now tolerably frequent. There are now also many yellows and oranges, but a perfectly pure white, or bright light rose, is rarely met with. No blue Dahlia has yet been seen, and even the dark purples have always a reddish tinge. The outer florets are sometimes so much recurved as to make the flowers look ball-shaped, and these are called Globe Dahlias. Sometimes there is only a single row of broad flat florets, while the inner ones are erect and tubular; and these are called Anemone-flowered.

For several years after the rage for double flowers commenced, the only species of Dahlia cultivated in British gardens were *D. variabilis*, or *superflua*, and *D. coccinea*, or *frustanea*; the kind called by Cavanilles *D. rosea* having disappeared. Within the last few years, however, several new species have been introduced; and it is probable more will be discovered as the Flora of Central America becomes better known.

THE CULTURE OF THE DAHLIA requires great care and attention. The soil should be composed of equal parts of sand and loam, enriched with part of an old hotbed, some very rotten cow-dung, or decayed leaves. Fresh stable dung is unsuitable, as it will produce strong stems and large leaves rather than fine flowers. The ground should be well drained, as, though Dahlias require plenty of moisture, they are soon killed if their roots have access to stagnant water. Many cultivators put a deep layer of stones and brickbats at the bottom of the bed, so as to prevent the possibility of water accumulating about the roots. The tubers, having been kept in a dry moderately cool place during winter, are generally planted in pots in February or March, and plunged into a slight hotbed to start them, as the florists term it. They are afterwards removed to the open ground, when they have begun to grow. Or the tubers may be planted at once in the open ground without starting; the tall kinds in May or June, and the dwarf early flowerers in April. The tubers should be planted in rows, about two or three feet apart every way; or in quincunx, about five feet apart in the row, and the rows three feet apart. The situation of the bed should be open and exposed to the sun; and if the weather prove dry, the young plants should be frequently and regularly watered. In planting, care should be taken to arrange the tubers so that the colours may harmonise agreeably. Thus the purples and crimsons, and the crimsons and scarlets, may be separated by yellow, white, or buff, and the salmon-coloured and buff may be separated by white. Dahlias will degenerate if grown more than one year in the same bed without fresh soil or manure. When Dahlias are planted, that have been started in pots, all the earth in the pot should be turned into the hole made to receive it

without breaking the ball; and the empty flower-pot should be turned over the young plant, to prevent too much evaporation from the leaves. As the plants grow, they should be carefully trained, so as to admit the sun and air to the centre of the plant; and this is done by tying the stems to stakes fixed in the ground. Sometimes only a single stake is used, to which is tied the main stem of the plant. In whatever way stakes may be used, they should be driven a foot and a half or two feet into the ground before the Dahlias are planted; as, if this be not done, there is danger of wounding the tubers in driving the stakes into the ground. The stems are tied rather loosely at first to the stakes with bast matting, which is frequently taken off and replaced, as the stems increase, till they have attained their full size. Sometimes, particularly with dwarf Dahlias, the stems are pegged down to the beds, and this plan, when the soil is dry, produces a brilliant effect. Where the object is to produce fine flowers, either for exhibition or seeds, part of the buds and the tips of the shoots are occasionally removed. Where numerous small but early flowers are wanted, the soil should be sandy or gravelly, mixed with a very little leam. Many cultivators shade their flowers when they are intended for exhibition, as both sun and rain will injure the delicacy of the colours.

The plants will generally continue to produce flowers till their leaves and stems become blackened by frost; and as soon as this is the case, they should be cut down nearly to the surface of the ground; and, the first fine dry weather that occurs, the tubers should be taken up in the morning and left exposed to the sun during the day. In the evening they must be taken to a dry airy place where they will be safe from frost, and kept there till they are dry enough to have all the soil removed from them, which may be done with a soft brush. They must then be buried in sand, sawdust, or some similar material, and deposited in a dry cellar, a garret, or under the stage of a greenhouse, provided they can be kept dry there; the great objects to be kept in view being dryness, security from frost, and a moderately cool temperature, which should never rise above 45°, nor sink below 36°. Labels with the name of each Dahlia should be affixed to each fascicle of tubers when it is removed from the ground; and these labels are generally of zinc, attached by wire.

Dahlias are propagated either by dividing the fascicles of tubers, by cuttings, or by seeds. By the first mode, the roots are planted either in the ground, or in pots plunged in a hotbed, till they are started—that is, till they begin to grow; they are then taken up, and the tubers cut or pulled asunder, taking care that there is a bud or eye to each. Those which have no buds are termed blind tubers, and they may have buds inserted from other plants, either by cleft or peg grafting. The cuttings are either slipped off from started tubers with a portion of the tuber attached, or made like cuttings of other plants, by taking off part of a shoot in summer. In both cases, they require what is called bottom heat, that is, plunging the pot into a hotbed, to make them strike. Summer cuttings are rarely made, unless it be of some new and very choice sort, as the stems are too succulent to strike easily. The seeds should be sown on a slight hotbed, in February or March, or in a warm border in the open garden. The seedlings must be transplanted into beds, as soon as they have four or six leaves, or they will be drawn up and become weak.

1.—DAHLIA VARIABILIS, Dec. THE VARIABLE DAHLIA.

SYNONYMES.—*D. superflua*, *Ait.*; *D. pinnata*, *Cav.*; *D. sambucifolia*, *Sal.*; *Georgina purpurea*, *Willd.*; *Dahlia pourpre*, *Thouin.*
ENGRAVINGS.—*Bot. Mag.* t. 1885, A & B; *Bot. Reg.* t. 55; and

our Plate 46, in which it is called *D. superflua*.

SPECIFIC CHARACTER.—Stem not hoary. Flowers of the ray fertile, as well as those of the disk.

DESCRIPTION, &c.—This species is the origin of nearly all the numerous Dahlias now in cultivation. The wild flower had a purple ray of eight nearly flat florets, and a yellow disk. The varieties are, however, single,







1 *Dahlia superflua*. (the origin of all the garden varieties) - 2. the Sir Robert Peel. - 3. Harris: "Inimitable" - 4. Lewis: "Incomparable".

double, and semi-double; and of every shade of purple, crimson, scarlet, salmon-coloured, buff, orange, yellow, and white. It is said that the colour of the stems of seedlings gives some indication of that of the future flower; the scarlet, crimson, and purple varieties having dark reddish stems, and the white and yellow pale ones. Some florists assert that it is only the Dahlias that have smooth shining florets, that are the true descendants of *D. variabilis*; and those of a velvety texture spring from *D. rosea*; but this assertion does not appear to admit of proof, as all certain traces of the kind called by Cavanilles *D. rosea* have long vanished, and it probably was only a variety of *D. variabilis*. In many of the modern varieties, the flower-heads are nearly flat; but in the Globe Dahlias the florets are so much recurved as to make the flowers appear quite round. The seeds of this species ripen freely; and the varieties may be easily hybridized with each other. *D. variabilis* is a native of the sandy plains of Mexico, whence it was first introduced in 1789.

2.—DAHLIA COCCINEA, Cav. THE SCARLET DAHLIA.

SYNONYMS.—*D. frustranea*, Ait.; *D. bidentifolia*, Sal.; *D. ponceanu*, Thoun; *G. coccinea*, Willd.; *G. frustranea*, Dec. ENGRAVINGS.—Bot. Mag. t. 762; and our fig. 2 in Plate 47. SPECIFIC CHARACTER.—Stem hoary. Florets of the ray barren.

DESCRIPTION, &c.—This species is of a much more slender habit of growth than *D. variabilis*; and it is more tender. The flowers are small, the seeds do not ripen freely, and the only colours that have been produced are scarlet, orange, and yellow; the colour of the species being of a dull red. Some persons suppose the scarlet, yellow, and other light or yellowish varieties of *D. variabilis*, to be hybrids between that species and *D. coccinea*; but others assert that the two species will not hybridize with each other; a very remarkable circumstance, if the assertion should prove correct. The first double flower of this species was raised in the Deptford Nursery in 1818; but double flowers of it are by no means common. It was discovered by Baron Humboldt at the same time as *D. variabilis*, but it was not introduced into England till 1802, when a nurseryman named Fraser procured seeds of it from France. Fraser only appears to have raised one plant, which died soon after flowering in 1803; but the species was re-introduced by Lady Holland in 1804, and it has kept its place in our gardens.

3.—DAHLIA CROCATATA, Sesse. THE SAFFRON-COLOURED DAHLIA.

SYNONYMS.—*D. fulgens*, Hort.; *Georgina crocata*, D. Don. ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 282; and our fig. 1 in Plate 47. SPECIFIC CHARACTER.—Stem erect, fleshy, hollow, branched in the upper part. Lower leaves bipinnate or tripinnate; leaflets ovate, acuminate, obtusely serrated. Achenia linear.

DESCRIPTION, &c.—This species is easily distinguished from *D. coccinea*, by its hollow stems (which are exceedingly tall and strong, and only branch at top), and its bipinnate leaves. It was raised from Mexican seeds, in the garden of Mrs. Hatch, at Claybury Hall, Essex, about 1812. The flowers are of a most brilliant scarlet, with a yellow disk; and there are twelve or more florets in a single series in the ray. A sandy soil seems to suit it best, and it must be tied to a tall stake.

4.—DAHLIA SCAPIGERA, Link et Otto. THE WHITE-FLOWERED DWARF DAHLIA.

ENGRAVINGS.—Flor. Cab. t. 118; Botanist, t. 161; and our fig. 5 in Plate 47. SPECIFIC CHARACTER.—Stem very short, procumbent at the base, bearing numerous flower-stems, some of which bear only flowers, and others flowers and a single pair of leaves. Leaves pinnately divided; leaflets oval, irregularly toothed, and unequally contracted at the base. Florets of the ray fertile.

DESCRIPTION, &c.—This very elegant little plant is generally only about a foot high, and never exceeds two feet. The flowers are white, and the petals are more fleshy than those of the common kinds. It is called scape-

bearing, because the flowers appear to rise on scapes from the root, on account of the shortness of the stem. The roots are not so fleshy as those of the common kinds, and some of them are quite fibrous. This species, like the others, is a native of Mexico, whence it was sent to Berlin; and seeds of it were sent by M. Otto to Mr. Cameron, curator of the Birmingham garden, in 1838. The plant flowers in July and August, and seeds freely; and if the seeds are sown on a hotbed in February, it will flower the same year. In most cases, the roots may be taken up in the ordinary manner; or left in the ground, and protected with a mat, or a covering of straw or dead leaves. No double flowers have as yet been raised of this species.

5.—DAHLIA GLABRATA, *Lindl.* THE SMOOTH DWARF DAHLIA.

ENGRAVINGS.—*Bot. Reg.* for 1840, t. 29; and our *fig. 4*, in Plate 47. cut, ciliated. Florets of the ray fertile. Involucre with the outer leaflets linear and spreading.

SPECIFIC CHARACTER.—Stem hollow, very smooth. Leaves bipinnate, and smooth, with a winged rachis. Leaflets ovate-acute, coarsely

DESCRIPTION, &c.—This species differs from *D. scapigera* in growing about three feet high, and having bipinnate leaves, and a hollow stem. The flowers also are lilac and semi-double; and the roots, though fleshy, are slender and uniform in size; instead of being partly tuberous and partly fibrous. This species is also a native of Mexico, whence it was introduced in 1840. It flowers in July, and ripens abundance of seeds. Its culture is the same as that of the preceding species.

6.—DAHLIA EXCELSA, *Benth.* THE TALL DAHLIA.

SYNONYMS.—*D. gigantea*, *Bull.*; Tree Dahlia. petioles obscurely connate. Heads of florets sub-corymbose. Florets of the ray neuter.

ENGRAVINGS.—*Botanist*, t. 88; and our *fig. 3* in Plate 47.

SPECIFIC CHARACTER.—Stem hoary, hollow. Leaves bipinnate;

DESCRIPTION, &c.—The history of this species is rather remarkable. In 1830, Messrs. Loddiges, having received a basket of orchideous plants from Mexico, perceiving that the stakes fastened across the basket showed signs of life, planted them in the open ground, where they soon grew about ten feet high, but they were killed by the frost in winter. In 1834, a Mr. Bates introduced both roots and cuttings, and from these plants were raised in the Liverpool Botanic Garden, and in Skirving's nursery. In both cases, the plants have been planted in the free ground of a conservatory, and flowered when about twelve feet. The plant rises with an erect stem, generally without branches, but with widely-spreading leaves, which extend about five feet from side to side; and the flowers form a kind of crown at the summit. One of the plants in the Liverpool Botanic Garden attained a height of twenty feet in three years; and in its native country it becomes thirty feet high. Mr. Bates has specimens of both double and single flowers of this species; but the only kind yet seen in England is anemone-flowered, with all the florets of the disk become semi-ligulate, and changed into the same colour as those of the ray. The plants have produced no seeds in England, as all their florets are neuter; but they are readily propagated by cuttings. The stem is woody at the base, and marked with rings from the remains of fallen leaves. It is hollow, and frequently emits a number of fibrous roots.

OTHER SPECIES OF DAHLIA.

D. CERVANTESII, *Lagasca*; GEORGINA CERVANTESII, *Swt. Brit. Flow. Gard.*, 2nd, ser. t. 22.

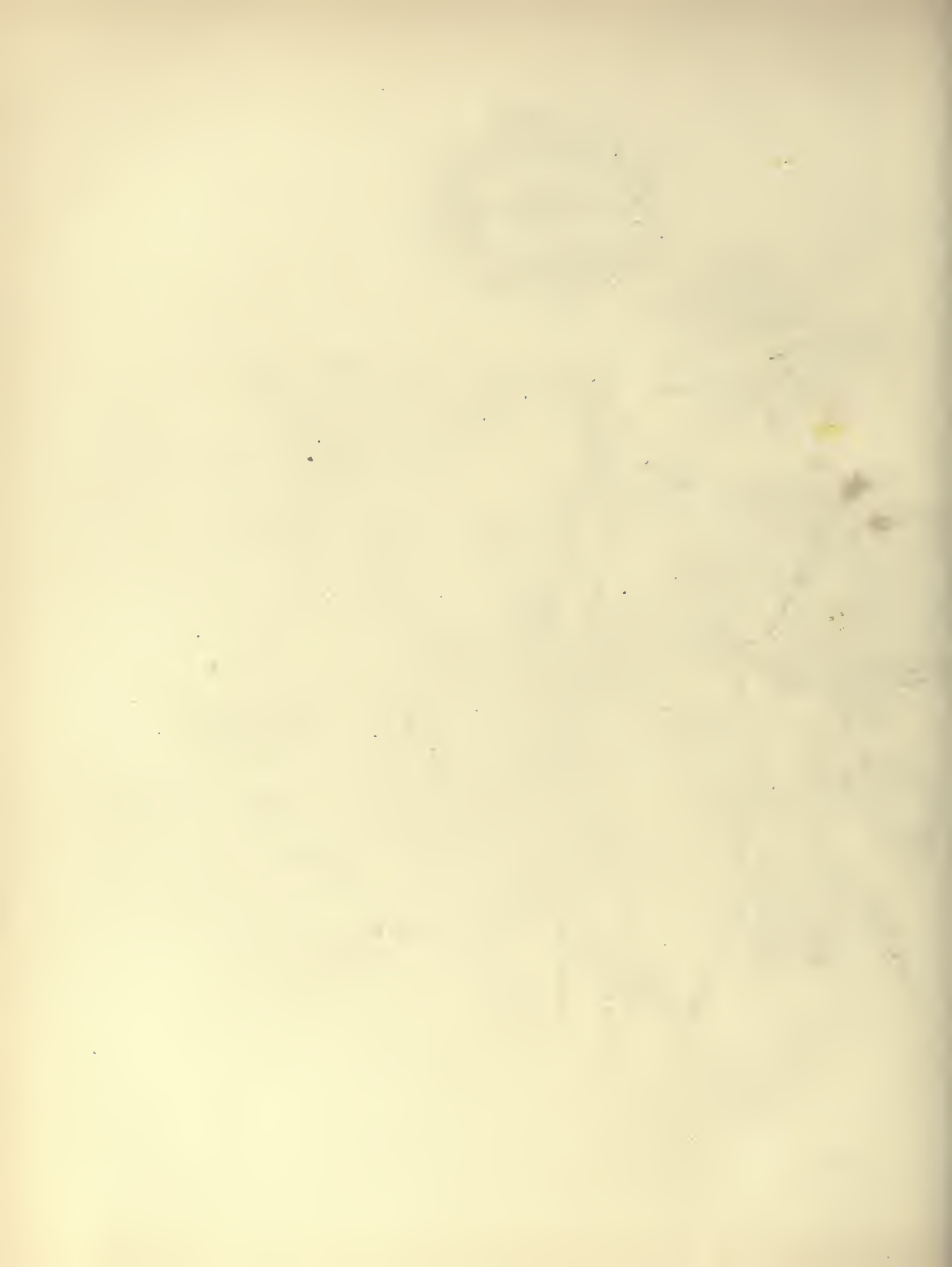
This species is very nearly allied to *D. crocata*; but the stem is solid, very much branched, and covered with numerous small, glossy, light purple warts. The lower leaves are bipinnate, and the flowers are of an







1. *Dahlia crocata*—2. *Dahlia coccinea*—3. *Dahlia excelsa*—4. *Dahlia glabrata*
 5. *Dahlia scapigera*



orange scarlet, with about nine florets in the ray. A very beautiful variety of this, called *Aurera*, has been raised, but the species does not hybridize with *D. variabilis*. It was introduced in 1820.

D. ROSEA, *Cav.*

This species, according to some botanists, is the parent of all the velvet-like Dahlias; and if this is the case, it certainly hybridizes and varies freely. Its progeny are also said to be easily distinguished by their bipinnate leaves; but many botanists think that the species now called *D. rosea* is not the same as that of Cavanilles. Introduced in 1804.

D. ASTRANTIÆFLORA, *Cav.*

This species is said to be the parent of all these anemone-flowered Dahlias, which are generally supposed to be varieties of *D. variabilis*. It was introduced in 1812.

D. BARKERII, *West et Know., Flor. Cab.*

Very nearly allied to *D. glabrata*, but having a rough, hairy stem, and not flowering till October. Introduced in 1837.

GENUS XIII.

HELIOPSIS, *Pers.* THE HELIOPSIS.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucre many-leaved, imbricated. Re-
ceptacle conical, paleaceous. Florets of the disk tubular, hermaphro-
dite, those of the ray ligulate, femi-
ninee. Achenia naked at the
apex.

DESCRIPTION, &c.—The word *Heliopsis* signifies Resemblance to the sun; and the genus was established by M. Persoon upon *H. lævis*, which is a very showy, sun-like looking flower. The other species are less brilliant, and not so well deserving of the name. All the species are perennial plants, with opposite leaves, and terminal yellow flowers.

1.—HELIOPSIS LÆVIS, *Pers.* THE SMOOTH-LEAVED HELIOPSIS.

SYNONYMS.—*Helianthus lævis*, *Lin.*; *Buphtalmum helianthoides*,
L'Herit.; *Silphium solidaginoides*; *Rudbeckia oppositifolia*.

ENGRAVINGS.—*Bot. Mag.* t. 3372; and our *fig.* 6 in Plate 48.

SPECIFIC CHARACTER.—Stem very smooth. Leaves smooth, ovate-
acuminate, serrated. External scales of the involucre lanceolate,
subserrated.

DESCRIPTION, &c.—This plant is a native of Mexico, whence it was introduced in 1714. The stem is erect, much branched, and somewhat angular; and the flowers are large and showy. It is quite hardy, and it is propagated either by seeds or dividing the roots.

OTHER SPECIES OF HELIOPSIS.

H. CANESCENS, *Kunth*; H. SCABRA, *Dec., Bot. Reg.* t. 592.

Very inferior to the preceding species. This species is a native of Peru, whence it was introduced in 1820.

H. BUPHTHALMOIDES, *Dec.*; ANTHEMIS BUPHTHALMOIDES, *Jacq.*

A native of Peru, introduced in 1798. This species is more tender than the others, and requires protection during winter.

GENUS XIV.
COREOPSIS, *Gart.* THE COREOPSIS.

Lin. Syst. SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Involucre many-leaved; scales of the outer series, leaf-like; inner ones membranaceous. Receptacle flat, or slightly raised. Florets of the disk, hermaphrodite and fertile; those of the ray, barren. Pappus with two or three bristles. Seeds flat, slightly winged.

DESCRIPTION, &c.—The name of *Coreopsis* is taken from two Greek words signifying Like a bug, in allusion to the shape of the seeds, which are flat, and resemble that disgusting insect. The species are American perennial plants, with erect stems, generally opposite leaves, and yellow flowers.

1.—COREOPSIS GRANDIFLORA, *Hogg.* THE LARGE-FLOWERED COREOPSIS.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 175; and our *fig. 2*, in Plate 48. | opposite, connate, nearly sessile, fringed with hair at the base. Peduncles elongated, one-flowered. Florets of the ray five-toothed.

SPECIFIC CHARACTER.—Stem erect, branched, furrowed. Leaves

DESCRIPTION, &c.—An elegant plant, three or four feet high, with deeply cut leaves, the leaflets of which are fleshy and linear, elongated and spreading. The flowers are of a brilliant yellow, and the florets of the ray are so deeply toothed, as to give them a fringe-like appearance. The species is a native of North America, whence it was introduced in 1826. It is quite hardy, and will grow in any common garden soil; flowering in autumn. It is propagated by seeds, cuttings, or dividing the root, and it takes readily in all these ways.

2.—COREOPSIS LANCEOLATA, *Willd.* THE LANCEOLATE-LEAVED COREOPSIS.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 10; and our *fig. 3* in Plate 48. | into a petiole at the base. Peduncles elongated, naked. Florets of the ray, four-toothed. Seeds slightly winged, with rough edges. Pappus of two short fringed teeth.

SPECIFIC CHARACTER.—Leaves lanceolate, entire, ciliated, attenuated

DESCRIPTION, &c.—This species is rather more tender than the other kinds of *Coreopsis*, and it is easily killed by moisture as well as frost. It is a native of North America, where Pursh found it growing in hilly situations in Carolina and Virginia. It requires a light, rich, dry soil, and an open, airy situation exposed to the sun. It grows about two feet high, with numerous branching stems, several rising from the same root, and lanceolate leaves. It flowers from August till October, but it seldom ripens its seeds in this country; and consequently, it is generally propagated by division of the root. It may also be increased by cuttings, which should be taken off before midsummer, and planted in a pot which should be plunged in a hotbed, and covered with a hand-glass to make them strike.

3.—COREOPSIS SENIFOLIA, *Mich.* THE SIX-LEAVED COREOPSIS.

ENGRAVINGS.—*Bot. Mag.* t. 3484; and our *fig. 4* in Plate 48. | segments lanceolate, entire. Florets of the ray not toothed. Pappus nearly obsolete.

SPECIFIC CHARACTER.—Leaves opposite, sessile, deeply tripartite;

DESCRIPTION, &c.—This species closely resembles *Chrysostemma* (see vol. i. p. 88) to which at first sight it appears much more nearly allied than to *Coreopsis*. It is a native of Carolina and Georgia, whence it was introduced in 1812. It has small flowers, which are produced in great abundance; and it is easily distinguished by its leaves, which being opposite, and each deeply cut into three lanceolate segments, appear to be in whorls of six each. Though a native of the warmest part of North America, this species is quite hardy in British gardens. It is propagated either by seeds or dividing the root.



1 *Coreopsis aurea* — 2 *Coreopsis grandiflora* — 3 *Coreopsis lanceolata* — 4 *Coreopsis senifolia*
5 *Coreopsis verticillata* — 6 *Helianthus laevis*.



4.—*COREOPSIS VERTICILLATA*, *Lin.* THE WHORL-LEAVED *COREOPSIS*.

SYNONYMS.—*C. delphinifolia*, *Dec.*; *C. tenifolia*, *Pluk.*
ENGRAVINGS.—*Bot. Mag.* t. 156; and our *fig. 5* in Plate 48.

SPECIFIC CHARACTER.—Leaves opposite, connate, deeply cut; segments linear. Florets of the ray entire.

DESCRIPTION, &c.—This very handsome species produces its showy flowers from July to October. It has a slender stem and leaves, but it grows three or four feet high, and sometimes more. It is a native of North America, introduced in 1759, and it is propagated by dividing its roots. It is quite hardy, and will grow in almost any soil and situation.

5.—*COREOPSIS AUREA*, *Ait.* THE GOLDEN *COREOPSIS*.

SYNONYME.—*C. trichosperma*, *var. aurea*, *Nutt.*
ENGRAVINGS.—*Bot. Reg.* t. 1228; and our *fig. 1* in Plate 48.
SPECIFIC CHARACTER.—Leaves deeply serrated, opposite; three or

five-parted; segments lanceolate-linear, elongated at the point. Florets of the ray eight, oblong, entire, three times as long as the scales of the involucre.

DESCRIPTION, &c.—A very showy species, growing about three feet high, with the stem very little branched. The flowers are large, of a rich golden yellow, and very handsome. It is a native of North America, whence it was first introduced in 1789, by Lord Tankerville, but it was soon lost. It was re-introduced about 1826. It is a biennial, and quite hardy in British gardens. It is propagated by seeds.

OTHER SPECIES OF *COREOPSIS*.*C. TRICHOSPERMA*, *Nutt.*

A native of Carolina, with pinnate leaves; introduced in 1822. It is a rather tender biennial.

C. DISCOLOR, *Lin.*

A handsome species, the florets of which have a spot at the base. A native of North America; introduced in 1818.

C. AURICULATA, *Lin.*

A native of North America; introduced in 1699.

C. CRASSIFOLIA, *Ait.*; *C. LANCEOLATA*, *var. VILLOSA*, *Dec.*

The leaves are entire and fleshy. A native of Carolina; introduced in 1786.

C. GLADIATA, *Dec.*; *C. DICHOTOMA*, *Michx.*

Leaves alternate, ensiform. A native of North America; introduced in 1827.

C. ANGUSTIFOLIA, *Lin.*

Leaves alternate, very narrow. A native of North America; introduced in 1778.

GENUS XV.

HELIANTHUS, *Lin.* THE SUNFLOWER.*Lin. Syst.* SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Involucre many-leaved, imbricated. Receptacle flat, chaffy. Florets of the disk, tubular, hermaphrodite; those of the ray ligulate, neuter. Seeds compressed, and crowded with two or more bristle-shaped deciduous scales.

DESCRIPTION, &c.—The annual Sunflower is so well known, that it would be useless to give any description of the flowers of the genus, were not some of these flowers extremely unlike those of the common species. All the kinds, but one, are natives of America; and they are all quite hardy and of easy culture in British gardens.

The Jerusalem artichoke (*H. tuberosus*) is used as an esculent vegetable. Several new genera have been made out of the Linnæan genus *Helianthus*; but the differences are only trifling. *Helianthus* signifies literally, Sunflower. The species are generally tall, coarse-growing annual or perennial plants, very rarely becoming shrubby at the base. The leaves are opposite or alternate, generally entire and rough. The flowers are terminal, and generally produced singly. They are always yellow, and in most cases large and showy.

1.—HELIANTHUS DECAPETALUS, *Lin.* THE TEN-PETALED SUNFLOWER.

SYNONYME.—*H. frondosus*, *Pursh.*

ENGRAVINGS.—*Bot. Mag.* t. 3510; and our *fig. 2*, in Plate 49.

SPECIFIC CHARACTER.—Leaves opposite, except the upper ones, and

the bracts sub-rhomboid-ovate, acuminate, grossly serrated; rough and somewhat three-nerved. Leaflets of the involucre linear-acuminate. Chaff scabby. Florets of the ray entire, never exceeding ten.

DESCRIPTION, &c.—The stem is four or five feet high; much branched, and rough. The leaves are rough on both sides, of a lively green above, but paler below. The flowers are rather small and drooping, and of a pale yellow. The florets of the ray never exceed ten. The anthers are of a purplish black. The species is a native of Canada, and the northern parts of North America, whence it was introduced in 1759. It is quite hardy in British gardens. There is a variety in which the scales of the involucre become leafy.

2.—HELIANTHUS PUBESCENS, *Vahl.* THE DOWNY SUNFLOWER.

SYNONYMES.—*H. tomentosus*, *Michx.*; *H. Hookeri*, *G. Don*;
H. doronicoides, *Dec.* The Illinois sunflower.

ENGRAVINGS.—*Bot. Mag.* t. 2778; and our *fig. 1*, in Plate 49.

SPECIFIC CHARACTER.—Leaves opposite, sessile, half-stem clasping, ovate-lanceolate, creately serrated, hirsute. Stem hairy, rough. Scales of the involucre linear-lanceolate, pubescently ciliated.

DESCRIPTION, &c.—This species is a hardy perennial, frequently growing eight feet high, with a rough stem, divided at the summit into a panicle of flowers. The leaves are thick and rigid, placed opposite to each other, except the upper ones, and they generally partially sheath the stem at their base. Two of the side ribs in each leaf, are much longer and stronger than the others, but as they do not spring from the base, the leaf can scarcely be properly called three-nerved. A native of the Southern States of North America; but quite hardy in British gardens. It was introduced in 1795.

3.—HELIANTHUS SPECIOSUS, *Hook.* THE SHOWY SUNFLOWER.

SYNONYMES.—*Leighia speciosa*, *Cass.*; Mexican Sunflower.

ENGRAVINGS.—*Bot. Mag.* t. 3295; and our *fig. 3*, in Plate 49.

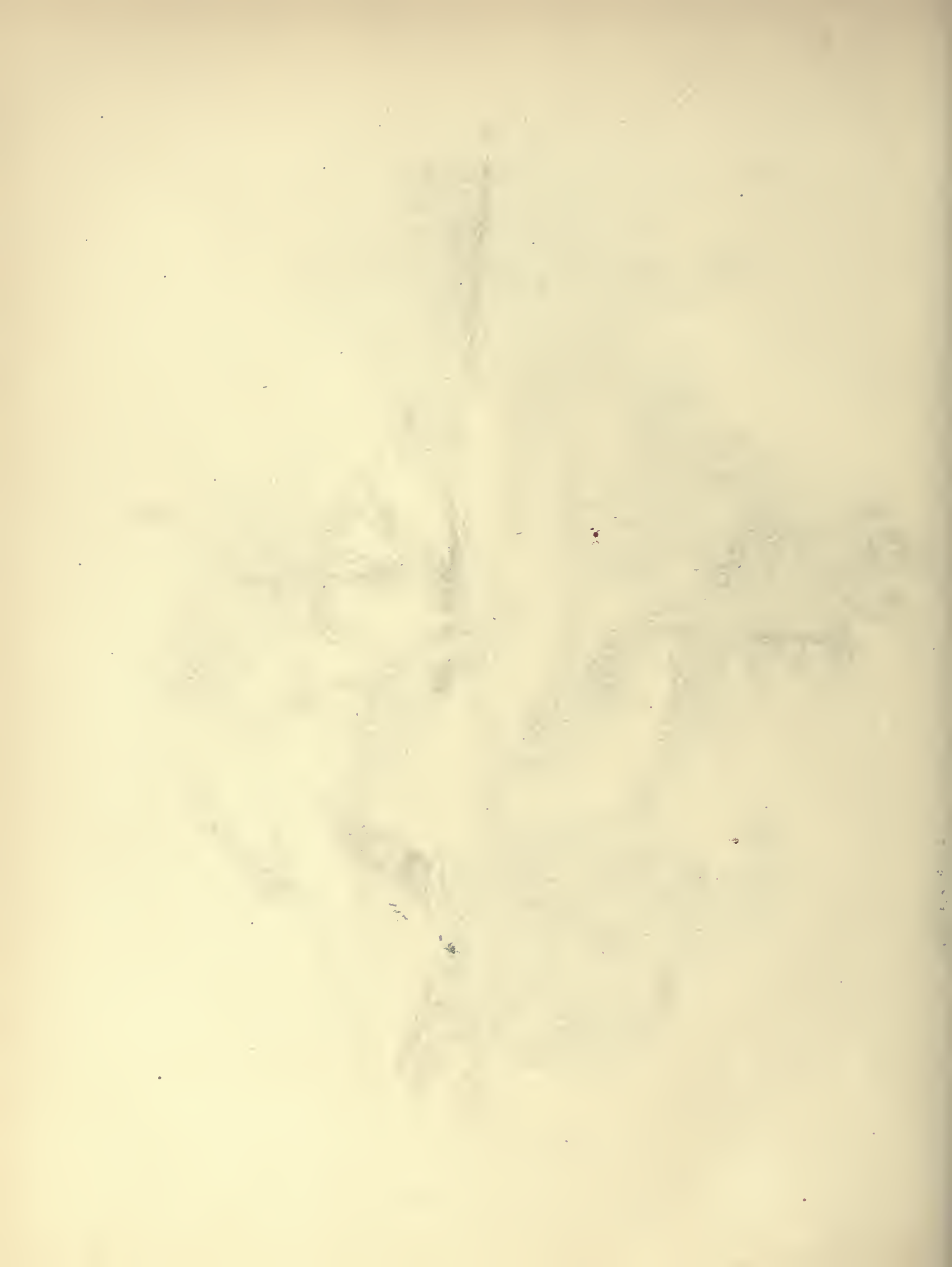
SPECIFIC CHARACTER.—Leaves cordate, entire, or three-lobed. Pe-

ducle fleshy. Scales of the involucre leafy. Chaff much longer than the tube of the flower. Pappus in two very long fringed bristles.

DESCRIPTION, &c.—This very showy plant bears so very slight a resemblance to a Sunflower, that Sir. W. J. Hooker, to whom a specimen was shown, was quite at a loss where to place it. Its flowers in shape approach very nearly to those of the Marigold, or of the genus *Tithonia*; and its seeds were sent from Mexico to Manchester in 1833. The following description of this species is taken from the *Botanical Magazine* for 1834, vol. 61:—"Only one seed vegetated. The label on the paper was *Composita speciosa*, and it was said to come from Jorullo. The plant came up to the length of about eighteen inches, very much like a common Sunflower, the outer and lower leaves being large, and the inner ones smaller, and very close together at the top, as in the common Sunflower, with all the leaves entire. It then threw out lobed leaves, and became a very different looking plant. It rose to the height of about five feet, beset with branches very thickly all the way from the bottom to the top, the lower ones projecting nearly horizontally from the plant, turning up at the ends, and about eighteen inches long; the rest gradually decreasing in length up to the top, and forming a complete cone. The



1. *Helianthus pubescens*. - 2. *Helianthus decapetulus*. - 3. *Helianthus speciosus*



first flower which appeared was at the termination of the main branch, and quite erect; and afterwards each lateral branch threw out a flower at its termination, rather in a horizontal direction, the end of the flowering stalk inclining upwards. The stem is round, and covered with a fine silky substance, but the leaves are rather coarse, and subject to be infested with aphides." I have given a detailed account of this fine species, which is now lost to our gardens, in the hope that, now the communication is so frequent between Britain and Mexico, that it may be re-introduced.

OTHER SPECIES OF HELIANTHUS.

H. LINEARIS, *Cav., Bot. Reg., t. 523*; H. SQUARROSUS, *Thunth*; LEIGHIA LINEARIS, *Cass.*

This plant is very nearly allied to the last-mentioned species, and, with it, forms the genus *Leighia* of Cassine, which differs from the true Sunflower in its pappus; in the leafy appearance of the scales of the involucre; and in the fleshiness of the flower stalk just below the flower. The florets of the ray have no pappus, but those of the disk have six small serrated scales, besides two long, awl-shaped, and opposite bristles. The species is a native of Mexico, whence it was introduced in 1823. The plant is quite hardy, but dwarf; and its flowers are smaller than those of any other kind of Sunflower, not exceeding an inch in diameter.

H. MULTIFLORUS, *Lin. Bot. Mag., t. 227.*

This species is the perennial Sunflower, so frequently found in gardens. There is a double-flowered variety. The species is a native of North America, whence it was introduced in 1597. It is quite hardy, and will bear the smoke of London and other large towns, better than the generality of flowers. It flowers from June to September, and is propagated by dividing the roots.

H. TUBEROSUS, *Lin.*

This is the Jerusalem Artichoke, so called from the Italian name for the Sunflower, *Girasole* (signifying, to turn to the sun), being corrupted into Jerusalem. The fact is, however, that none of the Sunflowers do turn to the sun; and, that they only derive their name of Sunflower, from their resemblance to the vulgar notion of the sun's disk. Thus a gold Sunflower was worn by the Priests and Virgins of the Sun in Peru; as affording a kind of image of the god they worshipped. The Jerusalem Artichoke is a native of Brazil, whence it was introduced in 1617; and it was long thought a very superior vegetable to the potato—both being at first dressed with sack and sugar.

H. DIFFUSUS, *Bot. Mag. t. 2020*; H. ATRORUBENS, *Dec.*

The stem is purplish, with widely-spreading branches, each bearing a terminal flower on a very long peduncle. The whole plant is clothed with stiff stringing hairs; and though it does not grow above two feet high, it spreads widely. A native of the banks of the Missouri, introduced in 1732. It is quite hardy in British gardens; and, though it has a rambling habit of growth, which renders it unsuitable for small gardens, unless its branches are pegged down to the ground, its flowers have the property of remaining unchanged a long time in water, after they are cut.

H. ANGUSTIFOLIUS, *Willd.; Bot. Mag. t. 2051.*

A weedy-looking plant, with very narrow leaves, and long slender florets to the ray. It is a native of Carolina, whence it was introduced in 1789. It requires protection during winter, but is not worth the trouble of cultivating, as the flowers have no beauty to recommend them.

H. MOLLIS, Willd. ; *Bot. Mag.* t. 3689.

This species, though frequently confounded with *H. pubescens*, is in fact much more nearly allied to *H. decapetalus*, from which it is chiefly distinguished by the softness of its leaves, while those of *H. decapetalus* are rough. The species called *H. pubescens* in the Botanical Register is alike different from this species and the *H. pubescens* of Vahl. It is probably *H. strumosus*, its root being carrot-shaped, as in that species.

There are several other kinds of Helianthus, but they are seldom seen in British gardens.

GENUS XVI.

TAGETES, Cav. THE ERECT MARIGOLD.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Scales of the involucre combined into a campanulate cup, which is toothed at the apex. Receptacle honeycombed. Achenium elongated, tapering to the base. Pappus composed of unequal palea.

DESCRIPTION, &c.—The French and African Marigolds, both annual flowers, give a good idea of this genus; but the perennial species have smaller and less showy flowers. All the species are natives of Mexico or Brazil, and most of them are rather tender in British gardens. The name of Tagetes is derived from Tages, a demi-god, celebrated for his beauty, who was the grandson of Jupiter, and son of Genius, and who is fabled to have taught the Tuscans the art of divination.

1.—TAGETES CORYMBOSA, Swt. THE CORYMB-FLOWERED TAGETES.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 151.

VARIETIES.—*T. c.* 2 *lutea*, *T. tenuifolia*, Sw. Brit. Flow. Gard. t. 141. *T. c.* 3 *maculata*; *T. corymbosa*, *Bot. Mag.* t. 3830; and our *fig.* 2 in Plate 51.

SPECIFIC CHARACTER.—Stem erect, angular, crowned at the apex with a corymb of many flowers. Leaves pinnate; leaflets lanceolate, and sharply serrated. Scales of the pappus three; one twice as long as the others, awl-shaped, and fringed.

DESCRIPTION, &c.—These very handsome plants are generally called annuals; but the fact is they never ripen their seeds till the second year after sowing; and if preserved from frost they will continue in flower all the winter, producing a succession of blossoms, till spring, when they begin to ripen their seeds. In the warmer parts of the west of England, the variety we have figured becomes a true perennial, living several years without renewing. The species is a strong-growing plant, with a rather coarse stem, three or four feet high, and the florets of the ray orange, but nearly covered with a deep purple spot. This plant is a native of Mexico, introduced in 1825. The yellow variety has a slender stem, and very beautifully cut leaves. It was also introduced from Mexico in 1825. It is well deserving of cultivation, and it succeeds best when its seeds are sown in May, in the open ground, and the plants taken up and potted in autumn, so as to be kept in a cool frame all the winter, and replanted in the open ground in May, when they will flower splendidly all the summer. The spotted kind, which we have figured, was sent from Mexico in 1838, and it requires exactly the same treatment as the yellow-flowered variety.

2.—TAGETES FLORIDA, Swt. THE BRIGHT-FLOWERING TAGETES.

ENGRAVINGS.—Swt. Brit. Flow. Gard. 2d ser. t. 35; and our *fig.* 1 in Plate 51.

SPECIFIC CHARACTER.—Stem erect, branched. Leaves opposite,

simple, somewhat stem-clasping; oblong-lanceolate, sharply serrated. Corymb many-flowered.

DESCRIPTION, &c.—This is the hardiest of all the species, as turning a flower-pot over the root will be sufficient to protect it during winter, even if the weather be severe; and when it is not, the plant may remain uncovered. It grows best in a light rich soil, or peat will suit it very well, and make the flowers of a darker orange. The species is a native of Mexico, whence it was introduced in 1828.



1. *Tagetes flouida* — 2. *Tagetes corymbosa* — 3. *Eriophyllum caespitosum*.

TAGETES LUCIDA, *Cav., Bot. Mag. t. 740; & Bot. Rep. t. 359.*

The sweet-scented Tagetes, or Chilian Marigold. This species, though a native of Chili, will live in the open ground in Britain with very slight protection. It will grow in any soil, but thrives best in a strong loam. Its flowers are small, and of rather a dingy orange, but they smell like honey. The species was introduced in 1798.

GENUS XVII.

ERIOPHYLLUM, *Lagasea.* THE ERIOPHYLLUM.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre one-leaved, campanulate, eight-toothed, woolly. Florets of the ray feminine, those of the disk hermaphrodite. Receptacle conical, honeycombed. Pappus palaceous, four-toothed.

1.—ERIOPHYLLUM CÆSPITOSUM, *Doug.* THE TUFTED ERIOPHYLLUM.

SYNONYMES.—*Actinella lunata, Pursh; Trichophyllum lunatum, Nutt.; Hilenium lunatum, Spreng.; Bahia lunata, Dec.*

ENGRAVINGS.—*Bot. Reg. t. 1167; and our fig. 3, in Plate 51.*

DESCRIPTION, &c.—A showy plant, producing great abundance of yellow flowers in the months of May and June. It is a native of North-West America, where it was found and sent home by Douglas in 1827. It is a decumbent plant, growing in tufts, and spreading over the rocks and banks bordering the rivers. It is quite hardy in England, and only requires to be grown in a dry open situation. Hence, it is admirably adapted for rockwork, as it will soon form a large dense patch, ornamental from its glaucous leaves, even when the plant is not in flower. The whole plant is covered with a soft whitish wool; and it has been observed that these plants look better than any others on rockwork. As it flowers early, it ripens its seeds freely; and hence, it may be propagated either by them or by dividing the roots. In either case all the particular culture it requires is to let the soil in which it grows be neither too moist, nor too rich. It is well adapted for a bed in a geometrical flower-garden, from the closeness with which it covers the ground.

GENUS XVIII.

ACHILLEA, *Lin.* THE MILFOIL.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucrum ovate, imbricated. Receptacle narrow, flat, chaffy. Pappus wanting. Florets of the ray few.

DESCRIPTION, &c.—The common Milfoil or Yarrow is well known from its curiously cut leaves, and close corymbs of flowers. This plant was formerly supposed to possess certain mystical properties to protect the wearer against witchcraft, particularly in battle; and it was esteemed an excellent vulnerary. It was called in Scotland Knight's Milfoil, or Soldier's Woundwort, because it was supposed to be a "sovereign remedie" against all wounds made with a spear. The same feeling respecting its virtues appears to have prevailed among the Greeks, as it was called Achillea, from Achilles having learnt its virtues when a pupil of the Centaur Chiron, and having used the juice of the crushed leaves medicinally to cure the wounds of his friends. In more modern times the common Milfoil was called Old Man's Pepper, from its fleshy roots possessing pungent qualities; and it is still frequently called Hundred Leaves from the numerous divisions of its bipinnatifid leaves. The Sneeze-wort,

and its allies, which were formerly included in the genus *Achillea*, are now placed in a separate genus called *Ptarmica*; and of the species of Milfoil, very few are grown in gardens. Nearly all the species are natives of Europe; and the few that are not, are found in Asia. None have yet been discovered in Africa, America, or Australia. All the species are hardy, and some of them are rather pretty.

1.—*ACHILLEA TOMENTOSA*, *Lin.* THE YELLOW MILFOIL, OR GOLDEN YARROW.

ENGRAVINGS.—*Bot. Mag.* t. 498; and our *fig. 2*, in Plate 50.

SPECIFIC CHARACTER.—Leaves woolly, bipinnatifid; segments crowded, linear, acute. Corymbs repeatedly compound.

DESCRIPTION, &c.—This very pretty little plant, which is admirably adapted for rockwork, seldom grows more than six inches high. The whole plant is covered with a soft woolly down, which looks nearly white at a little distance, and contrasts prettily with the bright yellow of the flowers. The species is a native of Spain and the South of France, whence it was introduced in 1658. In Sowerby's *English Botany*, it is said to be found occasionally in dry hilly pastures in Scotland and Ireland; but it can only be of very rare occurrence. It will grow in any dry soil; and it is propagated by dividing the root.

2.—*ACHILLEA CLAVENÆ*, *Lin.* CLAVENA'S SILVERY-LEAVED MILFOIL.

SYNONYMS.—*Ptarmica Clavennæ*, *Dec.*; *P. incana*, *Boerh.*; *Ab-sinthium alpinum*, *Clus.*; *A. umbelliferum*, *Clav.*; *A. latifolium*, *Bauh.*; *A. album*, *Lob.*; *Antabsinthium Clavennæ*, *Spec.*; *Dracunculus alpinus*, *Mor.*

ENGRAVINGS.—*Bot. Mag.* t. 1287; and our *fig. 3* in Plate 50.

SPECIFIC CHARACTER.—Leaves woolly, pinnatifid; segments linear, obtuse, slightly dentated at the tip. Corymbs simple.

DESCRIPTION, &c.—This very pretty plant, bearing considerable resemblance to the English Sneeze-wort, has been replaced by De Candolle in the genus *Ptarmica*; in which it was put by Boerhaave above a hundred years ago, though it was considered by Linnæus to belong to the genus *Achillea*, and is generally placed there in botanical collections. It is a native of Styria, and it was first discovered in that country by Clusius, who found it growing on steep rocks, where it was obliged to send its roots down through the fissures in search of nourishment. It was afterwards found on Mount Serva, by Nicolas Clavena, an apothecary at Belluna, in the Venetian territory. Clavena wrote a treatise on the virtues of the plant, and procured a kind of patent for selling it; that is, permission to prepare a sort of conserve from it, which should be sold only by himself. This occasioned warm disputes; as some of the medical men of Venice asserted that Clavena had no right to any exclusive privileges respecting a plant which had been first discovered and described by Clusius. However, there is no doubt that the plant was named by Linnæus in honour of Clavena, and that consequently the specific name should be *Clavennæ*, and not *Clavennæ*, as it is spelled by Hale, Linnæus, and other botanists. The species was introduced from Austria in 1656; and it is of the easiest culture in British gardens, only requiring a dry soil.

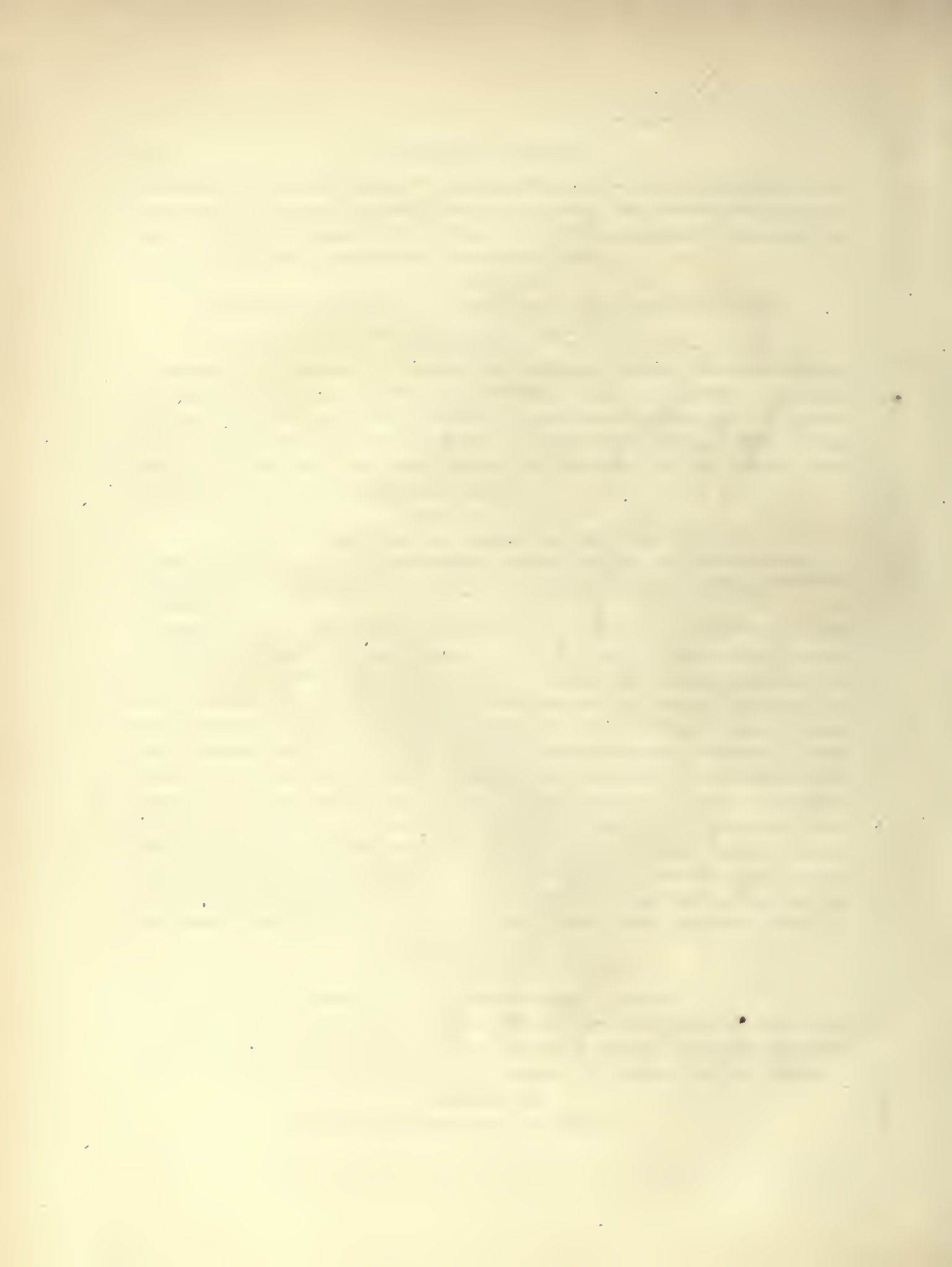
OTHER SPECIES OF *ACHILLEA*.

A. *MILFOLIUM*, *Lin.*, var *RUBRA*, *Dec.*, and our *fig. 1*, in Plate 50.

This is only a pink-flowered variety of the common Milfoil or Yarrow; but it is really a very pretty garden flower, and well deserving of cultivation, as it will grow in any soil or situation. It is a British plant, having been accidentally raised from seed of the Yarrow, which is common by the road-side in every part of Britain.

A. *PTARMICA*, *Lin.*

The Sneeze-wort is another British plant, well deserving of cultivation.





1. *Achillea millefolium* - 2. *Achillea tomentosa* - 3. *Achillea Clavona*.
 4. *Marshallia caespitosa*.

GENUS XIX.

MARSHALLIA, *Nutt.* THE MARSHALLIA.*Lin. Syst.* SYNGENESIA ÆGNALIS.

GENERIC CHARACTER.—Involucre generally in two series. Scales linear, lanceolate, equal. Receptacle convex, palea linear, acute. Corollas tubular, five-toothed, hairy on the outside. Achenium turbinate, hairy. Pappus consisting of five equal elliptic, acuminate, entire palea.

DESCRIPTION, &c.—Natives of North America, with entire, alternate leaves, and a head of flowers somewhat resembling that of clover. The genus, we are told, in the Botanical Magazine (Vol. 65) was “named in 1791, in compliment to Mr. H. Marshall, who wrote a history of the trees and shrubs of North America,” to which country, and Mexico, the species are entirely confined.

1.—MARSHALLIA CÆSPITOSA, *Nutt.* THE TUFTED MARSHALLIA.ENGRAVINGS.—Bot. Mag. t. 3704; and our *fig.* 4 in Plate 50.

SPECIFIC CHARACTER.—Smooth, tufted. Stem simple, without leaves, and with only one head of flowers. Leaves elongated, lanceolate, entire. Scales of the involucre oblong, linear, obtuse. Palea of the receptacle linear.

DESCRIPTION, &c.—A singular-looking plant, which, when many heads are grown near together, has very much the appearance of Gigantic Thrift. It is a native of Texas, whence it was introduced in 1837. It is not quite hardy in British gardens, being killed by severe frosts; and it is hardly worth the trouble of protecting. I have, however, mentioned it as a curious plant, and to give my readers an idea of what kind of plant it is, if they should see its name. Besides, it may please many persons, though it does not happen to take my fancy. It is propagated by seeds, and should be grown in light soil.

M. LANCEOLATA, *Dec.*

A native of Carolina, introduced in 1812. It has lilac flowers, which appear in August and September, about a month later than those of *M. cæspitosa*.

M. LATIFOLIA, *Dec.*

A native of Carolina, with lilac flowers and broad leaves. Introduced in 1806. It was on this species that the genus was founded. Micheaux had called it *Persoonia*, but another genus having been called *Persoonia* by Sir J. E. Smith, Persoon called it *Trattinickia*. This name having been also appropriated by Willdenow, it was lastly called *Marshallia*, a name which now seems to be generally adopted.

M. ANGUSTIFOLIA, *Dec.*

This species has never been introduced. It has narrow leaves, as the name imports.

GENUS XX.

ANTHEMIS, *Lin.* THE CHAMOMILE.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Florets of the ray ligulate, lanceolate, numerous. Calyx imbricate, subequal, hemispherical. Leaves much cut, flowers terminal.

DESCRIPTION, &c.—The common Chamomile is only grown in gardens for medicinal purposes, but the Chinese Chamomile is so elegant a plant that it well deserves culture. The word *Anthemis* signifies covered with flowers.

I.—ANTHEMIS APIIFOLIA, *R. Br.* THE PARSLEY-LEAVED CHINESE CHAMOMILE.

SYNONYMES.—*A. parthenoides*, *Dec.*; *Matricaria parthenoides*,
Desf.; *Pyrethum Chrysanthifolium*, *Hort.*

ENGRAVINGS.—*Bot. Reg.* t. 527.

SPECIFIC CHARACTER.—Leaves very smooth, pinnatifid; lobes wedge-shaped, trifidly cut. Flowers solitary. Leaflets of the involucre linear, rough at the tip.

DESCRIPTION, &c.—This very pretty little plant has very much the appearance of a double white Daisy, and it bears such a profusion of flowers as well to merit the name of Anthemis, or flower-covered. From the profusion of flowers, plants of this species are very suitable to cover a bed in a formal flower-garden, where they will form a mass of snow-white blossoms. They are also well adapted for rockwork. The species is a native of the South of Europe, whence it was introduced in 1764. It is quite hardy in British gardens, but it grows best in light rich soils. It is propagated by dividing the root.

2.—ANTHEMIS PYRETHRUM, *Lin.* THE PELLITORY OF SPAIN.

SYNONYMES.—*Anacylus Pyrethrum*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 462; and our *fig. 5*, in Plate 52.

SPECIFIC CHARACTER.—Stem simple, decumbent, one-flowered. Leaves pinnate; leaflets much cut.

DESCRIPTION, &c.—The Pellitory of Spain is frequently mentioned in the older herb books, on account of its efficacy in cases of tooth-ache. The root being very hot and pungent, was supposed to expel the cold which had taken possession of the teeth—such very odd ideas had our forefathers on the subject of medicine. The Pellitory of Spain was cultivated in England before 1570, and for about half a century it appears to have been a favourite garden flower; and, even when for a time it had been lost, it was recovered by the celebrated Miller, picking out some seeds of it from a box of raisins, in 1732. It is now seldom seen in gardens, though it well deserves cultivation from its delicate little leaves, and large snow-white flowers, the florets of the ray of which are pinkish on the under side. It is propagated by dividing the root; and though it is a native of Spain and Portugal, it does not ripen its seeds in this country, and, indeed, is killed by a severe winter. A very little protection, however, would be sufficient; and it deserves some little care, either as a plant for covering a bed in a flower-garden; or, for rockwork, on which it is extremely ornamental.

OTHER SPECIES OF ANTHEMIS.

A. MORSCHALLIANA, *Dec.*

This is a very handsome species, with yellow flowers, a native of Caucasus, when it was introduced in 1828. There is a variety of this species called *A. M. Rudolphiana*.

A. NOBILIS, *Lin.*

Is the common Chamomile, a decoction of the flowers of which is very frequently used as a tonic in domestic medicine. The flowers are white, with a yellow disk.

A. AUREA, *Dec.*; ANACYCLUS, *Lin.*

Has yellow flowers, and was introduced before 1570 from the South of Europe.

There are many other species, most of which are dwarf plants well suited to rockwork.







1. *Gaillardia bicolor*. — 2. *Gaillardia aristata*. — 3. *Pyrethrum uliginosum*.
 4. *Pyrethrum carneum*. — 5. *Anthemis Pyrethrum*.

GENUS XXI.

CHRYSANTHEMUM, *Lin.* THE CHRYSANTHEMUM.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Flowers radiate. Calyx hemispherical, imbricated, scales with a membranaceous lining.

DESCRIPTION, &c.—The plants contained in the genus *Chrysanthemum* have frequently changed their names; and all, with the exception of the annual species, have been removed to *Pyrethrum*, a genus formerly restricted to the feverfew and a few other similar plants, which were called *Pyrethrum*, from the Greek word for fire, because they have a hot fiery taste. The word *Chrysanthemum* signifies “Golden flower;” and it was given to the genus by Linnæus, from the first species described happening to have yellow flowers. I have retained all the Linnæan species in the genus, as they have most of them become popularly known by their botanic name.

1.—CHRYSANTHEMUM COCCINEUM, *Willd.* THE SCARLET CHRYSANTHEMUM.

SYNONYMES.—*Pyrethrum carneum*, *Dec.*; Dwarf rose *Chrysanthemum*.

ENGRAVINGS.—*Bot. Mag.* t. 1080; and our *fig.* 4, in Plate 52,

under the name of *Pyrethrum carneum*.

SPECIFIC CHARACTER.—Leaves glabrous, pinnate; leaflets pinnatifid; segments acute. Peduncle fleshy.

DESCRIPTION, &c.—This very pretty little plant is a native of Mount Caucasus, whence it was introduced in 1804. It is quite hardy, and it does best in a poor soil; as, when the soil is rich, the plant grows too much to stems and leaves, and the flowers are small and pale. The flowers appear in the beginning of August, and they continue till the latter end of September. The plant is increased by dividing the roots. It is badly named, as the colour of the flowers is pink rather than scarlet.

2.—CHRYSANTHEMUM ULIGINOSUM, *Pers.* THE LARGE MARSH OX EYE.

SYNONYMES.—*Pyrethrum uliginosum*, *W. et K.*; *C. lacustre*, *Brot.*
ENGRAVINGS.—*Bot. Mag.* t. 2708; and our *fig.* 3, in Plate 52, under the name of *Pyrethrum uliginosum*.

SPECIFIC CHARACTER.—Stem erect, branched in the upper part. Leaves sessile, lanceolate, irregularly, but deeply serrated. Flowers corymbose.

DESCRIPTION, &c.—This plant though described in the *Botanical Magazine* as an annual, is in fact a perennial; though its plants when sown very early in spring will produce flowers the following October. Sometimes it is treated as a biennial, its seeds being sown in August and the young plants kept in a cool frame during winter, to be planted out again in spring, when they will flower in May or June. If the plants are kept in the open ground, instead of being removed to a cold frame, they will not flower till August or September.

3.—CHRYSANTHEMUM ROSEUM, *Adan.* THE ROSE-COLOURED CHRYSANTHEMUM.

SYNONYMES.—*Pyrethrum roseum*, *Bieb.*; Pink *Pyrethrum*.
ENGRAVINGS.—*Bot. Reg.* t. 1024.

SPECIFIC CHARACTER.—Leaves glabrous; pinnatifid and bipinnatifid; segments acute, diverging. Stem erect, one-flowered; calyx glabrous.

DESCRIPTION, &c.—This very handsome species is a native of Caucasus, whence it was introduced in 1818. It is quite hardy in British gardens, in which it flowers in May and June. It is propagated by dividing the root. Each plant has numerous stems, every stem bearing a large handsome pink flower; the leaves are of a rich green, and very finely cut.

4.—CHRYSANTHEMUM SINENSE, *Sab.* THE CHINESE CHRYSANTHEMUM.

SYNONYMES.—*Anthemis grandiflora*, *Ram.*; *A. artemisiaefolia*, *Willd.*; *A. stipulacea*, *Mœnch.*; *Matricaria japonica*, *Brey.*; *Matricaria indica*, *Mill.*; Kiko no Fanna, and Kikokf, *Thun.*; and Kikf or Kikku, *Kœmp.*

ENGRAVINGS.—*Bot. Mag.* t. 327, 2042, and 2556; *Bot. Reg.* t. 4, t. 455, and t. 616; *Swt. Brit. Flow. Gard.* t. 7 and t. 14; *Hort.*

Trans., vol. iv., pl. 14; vol. v., pl. 3; and pl. 17* and 17**; and our *fig.* 1 to 3, in Plate 53.

SPECIFIC CHARACTER.—Stem suffruticose. Leaves petiolate, ovate, sinuately pinnatifid, villose, three or five-lobed, mucronately dentate. Flowers corymbose.

DESCRIPTION, &c.—The well-known flowers called Chinese Chrysanthemums are described in many catalogues as greenhouse shrubs, but they are hardy perennials for all practical purposes, and as such merit a place in this work. It is true that the stems die down to the ground every autumn, but the roots will survive the severest frosts, and young shoots will appear the following spring. The flowers are never quite so beautiful in the open air as in a greenhouse; but any one who has seen the Chrysanthemums trained against the houses in the suburbs of London, will allow that they are highly deserving of cultivation. Some kinds are much more hardy than others, and will stand the open air much better.

The first account we have of the Chinese Chrysanthemum occurs in a book on the Plants of Malabar, published in 1678; but only one species is mentioned, and a very slight account is given of it. We next find the Chinese Chrysanthemum described by Kœmpfer under the name of *Matricaria*, in his very interesting work on the Plants of Japan, published in 1712. Kœmpfer describes thirteen varieties of the plant, ten of which have been introduced from China; the three which have not reached us are a procumbent plant, with clusters of small, very double, cream-coloured flowers; another a tall plant, with large pale-blue flowers, and the third a plant, growing with a round, compact head, like a dwarf box-tree, and very fragrant, golden-yellow flowers. Instead of these three, others have been introduced, which are not mentioned by Kœmpfer.

In 1753, Linnæus obtained a specimen of the little yellow Chrysanthemum, still called *Chrysanthemum indicum*, the name given to it by Linnæus. This plant was at first supposed to be the parent of all the Chinese Chrysanthemums now in our gardens, but it has been since discovered that they belong to quite a different species, which Mr. Sabine has called *C. sinense*. In 1789, the purple Chinese Chrysanthemum, now called the Old Purple, was introduced into France, and this is supposed to have been the first Chinese Chrysanthemum that flowered in Europe. It was sent to England in 1790. It is true that a plant, under the name of *Matricaria indica*, flowered in the Chelsea Botanic Garden in 1764; but from the description given of it in Miller's Dictionary it appears not to have been a Chrysanthemum. The old white, or changeable white, was a sport from the old purple. This white is still common in our gardens, where it is frequently called the Changeable Chrysanthemum, from its flowers varying very much in different situations. Where the climate is cold, or the situation very open, the florets are generally a pure white; but where they have less air, the backs of the inner florets, and sometimes the whole of the outer florets, are of a pale purple; occasionally in gardens each floret is striped purple and white, and hence the plant is sometimes called the Magpie Chrysanthemum; and lastly, in a south border near the wall, the centre floret is often purple, and the outer florets white. This variety is supposed to have originated in 1802, in the garden of the Bishop of London at Fulham. The first quilled Chrysanthemum was the early white (see *fig.* 3, plate 53). The flower is nodding, and looks like a close tassel; the florets are perfectly tubular, and rather long, though of an unequal length. This variety was introduced from China in September 1808, and first flowered in the garden of Sir Abraham Hume. The flowers appear early, and when

they first open have a pale yellow cast; and sometimes, when the weather is cold, they take a tinge of purple on the outside before they fade.

For many years after the Chrysanthemum became a favourite garden flower, we had no varieties but those that had been introduced from China, with the exception of the changeable white; but about 1820, some seedlings were introduced from France. Still no seed ripened in this country till 1832, when a Mr. Wheeler, a nurseryman at Oxford, was so fortunate as to obtain some, from which he reared several beautiful seedlings; since then others have been raised at Jersey, which are so much handsomer than the original Chinese varieties, that the latter are almost thrown out of cultivation. About 4000 Jersey varieties are now grown by the different nurserymen and seedsmen, and of course it is impossible to give a list of their names; but in 1833 Mr. Haworth published a list of Chrysanthemums in the *Gardeners' Magazine*, in which he attempted to class all the kinds in the following seven divisions:—1. Ranunculus-flowered; 2. Incurved or cup-shaped; 3. China aster-flowered; 4. Marigold-flowered, with flat florets; 5. Clustered; 6. Tasselled; 7. Quilled. It is, however, very difficult to place the numerous new varieties in any of these divisions. As a general remark, it may be observed that the old Chinese kinds are generally the best for flowering in the open air; and that perhaps the hardiest are the tasselled yellow, the superb-clustered yellow, the quilled white, the incurved pink, the old purple, and the Spanish brown. The paper-white also, in some situations, flowers well in the open air. All these flower in November, and are consequently less liable to be injured by frost than the Jersey varieties, many of which remain in flower in a greenhouse till the middle of January.

The culture of the Chrysanthemum is, generally speaking, very simple; the plants may be propagated in March, April, and May; the suckers should be separated from the parent plant, each with a portion of the root attached, and put into flower-pots, three or four in a pot or separately, in a loamy soil. No other care is requisite, but to keep the suckers moist, taking care that the pot was well drained with broken crocks at the bottom. As soon as they have rooted, which they will do in a very short time, they should be transplanted into the border of a south wall, against which they may be trained.

The plants should be six inches apart, and only one stem should be allowed to rise, which should be two feet high before it is permitted to branch out. Where a south wall cannot be obtained, those kinds should be chosen which would best bear the privation of a full sun light. The great tasselled yellow and the incurved pink will flourish even on a north wall. The soil should be always loamy, and tolerably rich. In dry weather the plants should be abundantly watered, particularly when the flower-buds are swelling. In many cases liquid manure and soap-suds have been applied with very great advantage to Chrysanthemums in the open air, and the flowers and plants thus treated have been remarkably fine.

5.—CHRYSANTHEMUM INDICUM, *Lin.* THE INDIAN CHRYSANTHEMUM.

ENGRAVING.—Hort. Trans., vol. iv., p. 12, 13.

SPECIFIC CHARACTER.—Leaves tapering to the base, three-lobed, tubed; stem branched, branches one-flowered.

DESCRIPTION, &c.—This plant, which was for a long time confounded with the Chinese Chrysanthemum, was described by Linnæus in 1753, from two dried specimens, one single, and the other double-flowered. It appears evident, however, that the plant described by Linnæus had very small flowers, and was so different from the common Chrysanthemum, that it was judged Linnæus must have had another plant in view, although it was not decided what that plant could be till 1821. In that year, Mr. Sabine, examining a collection of Chinese flowers, of plants belonging to the East India Company, found two, which represented the double and single state of the Chrysanthemum, previously described by Linnæus; and Mr. Sabine, in consequence, gave our common Chrysanthemum the name of *Chrysanthemum sinense*. This Indian Chrysanthemum is a greenhouse plant, and very seldom grown, as its flowers are but small.

6.—CHRYSANTHEMUM TRIPARTITUM.

SYNONYME.—*Chrysanthemum indicum*, *Pers.*

ENGRAVINGS.—Swt. Brit. Flower Garden, t. 193.

SPECIFIC CHARACTER.—Stem erect; leaves petiolate, three-parted, subcordate at the base. Flowers in terminate corymbose panicles; florets of the ray three-toothed, twice as long as the involucre.

DESCRIPTION, &c.—The leaves of this plant are handsomer than its flowers; it is a hardy perennial, growing about three feet high, and the leaves are of a bluish green. Persoon supposed this to be the plant which Linnæus described under the name of *Chrysanthemum indicum*, but it is evidently quite distinct.

There are some other species of perennial Chrysanthemums, but they are very seldom grown in gardens.

GENUS XXII.

GAILLARDIA, *Willd.* THE GAILLARDIA.*Lin. Syst.* SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Receptacle chaffy, hemispherical. Pappus chaffy, leafy, many-cut. Involucre many-leaved. Florets of the ray divided into tufts.

DESCRIPTION, &c.—The genus Gaillardia is well known for the beauty of its flowers, but most of the species are annuals; the two that are perennials are very short-lived, seldom lasting more than three, or at most four years. Both the perennial species are natives of North America. The name was given in honour of M. Gaillard de Charentonneau, a French botanical amateur.

1.—GAILLARDIA BICOLOR, *Willd.* THE TWO-COLOURED GAILLARDIA.SYNONYMES.—*Gaillardia lanceolata*, *Mich.*; *G. pulchella*, *Foug.*; *Calonnea pulchella*, *Buch.*; *Virgilia holioides*, *L'Herit.*

ENGRAVINGS.—Bot. Mag. t. 1602; and our fig. 1, Plate 52.

SPECIFIC CHARACTER.—Stem branching. Stem-leaves lanceolate, slightly toothed. Root-leaves pinnatifid. Chaff of the pappus bristly.

DESCRIPTION, &c.—This plant is very handsome, and has fragrant flowers; it is extremely showy, and well deserving of cultivation. It is a native of the Carolinas and Florida. It flowers from May to July. It was introduced in 1787.







Chrysanthemum sinense
1. The early Crimson. 2. The quilled Orange. 3. The quilled White.

2.—GAILLARDIA ARISTATA, *Pursh.* THE BRISTLY GAILLARDIA.SYNONYME.—*G. bicolor*, *var.*, *Nutt.*ENGRAVINGS.—*Bot. Mag.* 2940; *Bot. Reg.* 1186; and our *fig. 2*,
Plate 52.SPECIFIC CHARACTER.—The whole plant pubescently hirsute.
Leaves oblong, lower ones sinuately pinnatifid, attenuated towards the
petiole; upper ones sessile, entire. Florets of the ray one colour.

DESCRIPTION, &c.—A tall branching plant, with hairy leaves and stem. The leaves are four or six inches long, and of a bluish green, and the flowers are large and very showy. It grows abundantly in dry soils, in California, and along the whole of the west coast of North America, whence it was introduced in 1812. It is quite hardy, and will grow in almost any soil and situation. It is propagated by seeds, the plants from which vary considerably in size, some being not more than eight or ten inches high, while others in the same border reach the height of 3 or 4 feet.

GENUS XXIII.

CINERARIA, *Lin.* THE CINERARIA.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre deeply cut into many parts; segments nearly equal, receptacle naked. Florets of the disk tubular, | hermaphrodite; florets of the ray ligulate, feminine. Anthers naked
at the base. Pappus hairy, sessile.

DESCRIPTION, &c.—*Cineraria* is one of those genera which has been completely cut up by modern botanists, and its species so distributed among other genera that very few have been left under their original name. Thus the beautiful greenhouse plants, that are called *Cineraria* even in English, are no longer included in that genus by botanists, but have been removed to *Senecio*. Many of the hardy species have shared the same fate, and others have been removed to many new genera formed to receive them. The name of *Cineraria* itself seems extremely ill applied to a genus which contains so many splendid flowers, as it signifies ashes; but it alludes to the powdery appearance of the leaves.

1.—CINERARIA AURANTIACA, *Willd.* THE ORANGE-COLOURED CINERARIA.SYNONYME.—*Senecio aurantiaca*, *Dec.*ENGRAVINGS.—*Sweet's Brit. Flower Gard.*, t. 256; and our *fig. 2*,
in Plate 54.SPECIFIC CHARACTER.—Stems simple. Leaves and stem woolly.
Radical leaves elliptic, repandly dentate, decurrent. Stem-leaves lance-
olate, entire. Corymb few-flowered, involucre leafy.

DESCRIPTION, &c.—The whole of this plant, except the flowers, is covered with long white wool, which appears as if laid on in flakes. The stem grows from one to two feet high, and is quite erect. The leaves are various in their form, but all are of a bluish green. The flowers are of a singular appearance, from their varying in colour considerably in the same corymb. Some are of a bright orange-brown, with a reddish tinge; others are bright orange; others golden-yellow; and others of a paler but still brilliant yellow, all of them being sweet-scented. The plant is a native of the Alps of Switzerland, and is very liable to rot in winter, unless planted in a very dry, sandy soil. It does very well on rock-work, if grown in very poor soil, to prevent it becoming too large; but the flowers of the plants grown on rock-work are neither so large nor so numerous as those of plants grown in the open garden. It was introduced about 1818.

2.—CINERARIA SPECIOSA, *Lindl.* THE SHOWY CINERARIA.

ENGRAVINGS.—Bot. Reg. t. 812; and our *fig. 1*, in Plate 54.

SPECIFIC CHARACTER.—Racemes simple. Leaves kidney-shaped, crenate. Petiole inflated. Stem furnished with simple leaves; bracts in the middle of the peduncle. Flowers radiate; florets of the ray sometimes three-toothed.

DESCRIPTION, &c.—This species is a hardy herbaceous plant, a native of Siberia; but it is distinguished from the species usually called the Siberian Cineraria by its kidney-shaped leaves; whereas those of the other plant are oblong and cordate. There are other differences, but this distinction is the most easily observed. The plant will grow in any soil or situation; and the flowers are of a golden-yellow and very showy. It was introduced in 1818. De Candolle has formed a new genus for this plant and some others, which he has called *Ligularia*, from the tongue-like shape of the ray florets.

3.—CINERARIA SIBERICA, *Waldst. et Kit.* THE SIBERIAN CINERARIA.

ENGRAVING.—Bot. Mag. 1869.

SPECIFIC CHARACTER.—Racemes simple. Lower leaves cordate, obtusely denticulate, smooth. Stem-leaves entire, lanceolate.

DESCRIPTION, &c.—A hardy perennial, frequently growing three feet high, with one simple undivided stem, which is curiously fluted. The flowers are much smaller than those of the preceding species, and are of a more dingy colour. The plant is quite hardy, and will grow in any soil or situation; but it is only suitable for a shrubby. It is a native of Siberia, and was introduced in 1784.

There are some other species of *Cineraria* with yellow flowers, and one (*C. viscosa*) with white flowers; but they are seldom seen in British gardens.

GENUS XXIV.

SENECIO, *Lin.* THE GROUNDSEL, OR RAGWORT.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Flowers radiate, florets of the ray ligulate and feminine. Involucre simple, sometimes almost monophyllous; erect, conical, with calycine scales at the base. Pappus hairy.

DESCRIPTION, &c.—The genus *Senecio* contains a great variety of plants, very different in their appearance, and in the estimation in which they are held. The common groundsel (*Senecio vulgaris*) is well known as a most troublesome weed in gardens; and the yellow ragwort (*Senecio jacobæa*), though much more showy and brilliant in its appearance, is equally annoying to farmers, particularly in Scotland. The purple *Jacobæa* (*Senecio elegans*) is a well-known garden annual, of great beauty; and the shrubby *Cinerarias*, which are now included in the genus *Senecio*, are among our most cheerful-looking and useful greenhouse plants. The name *Senecio* is derived from *Senex* (old), and it alludes to the hoary appearance of the leaves.

1.—SENECIO SPECIOSUS, *Willd.* THE SHOWY SENECIO.

ENGRAVINGS.—Bot. Reg. t. 41; and our *fig. 3*, in Plate 54.

SPECIFIC CHARACTER.—Flowers radiate. Stems simple, naked. Radical leaves petiolate, oblong, sinuately pinnatifid.

DESCRIPTION, &c.—This very handsome species, though frequently kept in the greenhouse, will grow well and flower freely in the open air. The foliage has an unpleasant smell, like that of the dead nettle; but the flowers



1. *Cineraria speciosa*. — 2. *Cineraria aurantiaca*. — 3. *Senecio speciosus*.
 4. *Doronicum caucasicum*. — 5. *Arnica montana*.

are slightly fragrant ; the stem grows from one foot to two feet high. It was supposed at first to be a native of China, but it is now said to be from Siberia. It was introduced in 1789. It is generally propagated by dividing the roots.

2.—*SENECIO VENUSTUS Willd.* THE HANDSOME SENECIO.

ENGRAVING.—Bot. Reg. t. 901.

SPECIFIC CHARACTER.—Flowers radiant. The whole plant glabrous. Leaves pinnatifid ; segments linear, acute.

DESCRIPTION, &c.—This very handsome species, though generally called a perennial, seldom lives more than three or four years, and frequently dies as soon as it has flowered, and ripened its seed. It is nearly related to the purple Jacobæa of the gardens, but the leaves are much more finely cut. It is a native of the Cape of Good Hope, whence it was introduced in 1774.

3.—*SENECIO AMPULLACEUS, Lindl.* THE FLASK-FLOWERED AMERICAN GROUNDSEL.

ENGRAVING.—Bot. Reg. t. 3487.

SPECIFIC CHARACTER.—Herbaceous, erect, very smooth, striated. Leaves oblong, obtuse, fleshy, somewhat stem-clasping at the base.

Panicle of flowers corymbose. Involucre flask-shaped, naked. Flowers of the ray few, spreading. Achenium cylindrical, attenuated towards the apex, furnished with a long, silky-pubescent pappus.

DESCRIPTION, &c.—A very handsome plant, with showy golden-yellow flowers ; the leaves are peculiarly thick and fleshy, with a pinkish midrib ; the stem is also pinkish. The seeds are easily known by the abundance of their white silky pappus. There are many other handsome species of Senecio, but they are generally too tender to be grown in the open ground without great care.

GENUS XXV.

ARNICA, Lin. THE ARNICA.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Receptacle naked. Pappus simple. Scales of the involucre equal. Florets of the ray narrow, spreading ; many times longer than those of the disk.

DESCRIPTION, &c.—The plants contained in the genus Arnica were separated by Linnæus from Doronicum, or Leopard's-bane. The word Arnica is said to be derived from a Greek word, signifying a lamb's skin, in allusion to the woolliness of the leaves.

1.—*ARNICA MONTANA, Lin.* THE MOUNTAIN ARNICA.

SYNONYMS.—*Doronicum oppositifolium, Lam.* ; *Caltha alpina, Tab.* ; *Parnica montana, Dal.* ; *Chrysanthemum latifolium, Dod.*

ENGRAVINGS.—Bot. Mag. 1749 ; and our fig. 5, in Plate 54.

SPECIFIC CHARACTER.—Leaves ovate, entire, opposite. Branches of the stem opposite.

DESCRIPTION, &c.—This is a very showy plant, which, if grown in a moist, shady situation, will attain a large size, and produce great abundance of its brilliant yellow flowers. It was formerly in high repute for its medicinal properties ; and, as it is said to clear the head by exciting sneezing when reduced to powder, it was called Mountain Snuff. It is now seldom grown, though it would be a very useful plant for shrubberies. It is a native of Germany, and other parts of middle Europe, whence it was introduced in 1731.

There are several other species of Arnica, all of which are hardy perennials, but they are seldom grown in gardens.

GENUS XXVI.

DORONICUM, *Lin.* THE LEOPARD'S-BANE.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Receptacle naked, pappus simple; scales of the involucre in two rows, equal, longer than the disk; seeds of the ray florets destitute of pappus.

DESCRIPTION, &c.—These are very showy flowers, some of which are natives of England, and all of which have been found in Europe, and the North of Asia. Some derive the name of *Doronicum* from an Arabic word signifying poison; but others trace its origin from two Greek words, signifying a gift and a victory: because wild beasts, particularly leopards, are said to be very fond of its leaves and fleshy root, the juice of which has a stupifying effect upon them, and thus makes them fall an easy prey to their enemies. Hence also the English name of Leopard's-bane.

1.—DORONICUM PLANTAGINEUM, *Borr.* THE GREATER LEOPARD'S-BANE.

ENGRAVINGS.—Eg. Bot. t. 630; 2d ed. t. 1169.

SPECIFIC CHARACTER.—Leaves toothed, radical ones on naked stalks,

ovate, or slightly cordate; stem-leaves sessile, except the lowest, which has a winged stalk.

DESCRIPTION, &c.—One of the most showy of British wild flowers, and frequently cultivated in gardens, where its large yellow blossoms produce a brilliant appearance in May and June. It is often confounded with the Common Leopard's-bane; but modern botanists make it a distinct species, and it is certain that its flowers are not only much larger, but are produced much earlier. It is propagated by seeds and dividing the root.

2.—DORONICUM PARDALIANCHES, *Smith.* THE COMMON LEOPARD'S-BANE.

ENGRAVINGS.—Eng. Bot. sup. 2654; 2nd edit. 1169*.

SPECIFIC CHARACTER.—Leaves cordate, toothed; the lower ones on long naked petioles; the intermediate leaves on petioles, dilated

into stem-clasping auricles at the base. The uppermost leaves are sessile and stem-clasping.

DESCRIPTION, &c.—The flowers of this plant are much smaller than those of the preceding species, and they do not appear till the latter end of June. The leaves are soft and hairy on both sides, and the whole plant is somewhat clammy to the touch. The roots are fleshy, and form at intervals small tubers about the size of a bean, from each of which a flowering stem proceeds, and grows to the height of two or three feet. From this peculiarity it is very difficult to eradicate the plant when once it has been introduced into a garden; and, at the same time, it is impossible for any plant to be more easy to propagate, as all that is required is to separate one of the flowering stems with its attached tuber from the rest, and to transplant it into another place. It also ripens seeds freely. It is said to grow best in damp shady places, but it generally succeeds in any soil or situation.

3.—DORONICUM CAUCASICUM, *Bieb.* THE CAUCASIAN LEOPARD'S-BANE.

ENGRAVINGS.—Bot. Mag. t. 1343; and our *fig. 4*, in Plate 54.

SPECIFIC CHARACTER.—Leaves cordate, dentate; radical leaves on long petioles; stem-leaves sessile, and stem-clasping.

DESCRIPTION, &c.—The flowers of this plant are rather small, but very pretty; the root is an oblong creeping tuber, or rhizoma; the stems grow about a foot high; and the leaves are small and quite heart-shaped. The plant is a native of Mount Caucasus, whence it was introduced in 1815. It is quite hardy in British gardens, and flowers in April.

There are few other species of *Doronicum*, all with yellow flowers, but they are seldom seen in British gardens.

GENUS XXVII.

GRINDELIA, *Kunth.* THE GRINDELIA.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre with numerous imbricated scales; of the ray ligulate, feminine. Anthers, naked at the base. Achenium receptacle naked. Flowers of the disk tubular, hermaphrodite; those obliquely ovate, pappus bristly, deciduous.

DESCRIPTION, &c.—This genus of very handsome flowers was originally called *Donia*, in honour of Mr. Don, the curator of the Botanic Garden at Edinburgh; but it was united by Mr. Brown to the genus *Grindelia*, which had previously been established and named in honour of a German botanist named Grindel. The first species, named *Donia glutinosa*, is a greenhouse half-shrubby plant; but most of the other species are hardy perennials, which flower freely in the open air. Most of the species were formerly included in the genus *Doronicum*.

1.—GRINDELIA INULOIDES, *Lindl.* THE INULA-LIKE GRINDELIA.SYNONYME.—*Aster spatularis*, *Brouss.*ENGRAVINGS.—*Bot. Reg.* t. 248

SPECIFIC CHARACTER.—Leaves oblong, and sometimes fiddle-shaped,

deeply serrated. Stem and leaves both pubescent; pappus simple, and consisting of two or more fine bristles.

DESCRIPTION, &c.—This very showy plant is not half so much cultivated as it deserves to be, from an idea that it requires a greenhouse to bring it to perfection. It is true it is better if slightly protected during the winter, by putting a little straw over the roots, or turning a flower-pot over them during severe weather; but, under favourable circumstances, it flowers better in the open air than in a greenhouse. The flowers are yellow, the florets of the ray rolling back as they fade; and the involucre produces a white glutinous juice, which, indeed, is found more or less in all the species of the genus. The stem generally grows about two feet high, and the leaves are rough and hairy. This species is propagated by seeds, cuttings, or division of the root. It is a native of Mexico, and was introduced in 1815.

2.—GRINDELIA ANGUSTIFOLIA, *Kunth.* THE NARROW-LEAVED GRINDELIA.SYNONYME.—*G. Arguta*, *Dec.*ENGRAVINGS.—*Bot. Reg.* 781, t. 29; and our *fig. 4*, in Plate 55.

SPECIFIC CHARACTER.—Stems simple, unbranched. Lower leaves spatulate; upper ones linear, oblong, serrated, very slightly nerved.

DESCRIPTION, &c.—This very handsome species grows in large bushes of single stems, each from three to four feet high, and in the beginning of August it produces its large and showy flowers, which continue till the stems are killed down to the ground by the frost. The plants are quite hardy in the open ground, but they thrive best in a free soil and an open situation. The species is a native of Mexico, and grows on the Table-land at an immense elevation above the level of the sea. It was introduced in 1822. It is propagated by seeds, and by dividing the roots; and it is well deserving of cultivation in any garden where there is plenty of room.

3.—GRINDELIA SQUARROSA, *Dec.* THE SNAKE-HEADED GRINDELIA.SYNONYME.—*Donia squarrosa*, *Pursh.*ENGRAVING. *Bot. Mag.* t. 1706.

SPECIFIC CHARACTER.—Herbaceous. Leaves oblong, stem-clasping, serrated. Scales of the involucre thread-like, and curved backwards.

DESCRIPTION, &c.—This species is a herbaceous perennial, a native of the open meadows on the banks of the Missouri, where it was discovered in August, 1804. The involucre and the back of the flower produce a glutinous liquid, which has a strong resinous smell. It flowers from August to November, and is propagated by seeds or division of the roots.

G. VILLOSA, *Dec.*

Is also a hardy perennial, with yellow flowers and hairy leaves. It is a native of the banks of the Colombia in California, whence it was introduced in 1827.

GENUS XXVIII.

DIPLOCOMA, *D. Don.**Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre with many imbricated scales; receptacle honey-combed and chaffy. Florets of the ray feminine and ligulate; those of the disk hermaphrodite and tubular. Anthers mutic

at the base. Achenium cleft at the apex. Pappus double; the outer row very short and chaffy, and the inner row long and hairy.

DESCRIPTION, &c.—The two species which compose this genus were separated from *Doronicum* by the late Professor Don, on account of their honeycombed receptacle, double pappus, and hornless anthers. Professor Don called this genus *Diplocoma*, from two Greek words, signifying a double lock of hair, in allusion to the seeds being furnished with a double row of pappus; but Professor De Candolle has changed its name to *Heterotheca*, which signifies a double sheath, though we are not told how it is applied.

1.—DIPLOCOMA VILLOSA, *D. Don.* THE HAIRY DIPLOCOMA.

SYNONYMES.—*Doronicum villosum*, *Sesse. et Moc.*; *Doronicum Mexicaquum*, *Cav.*; *Heterotheca isuloides*, *Dec.*

ENGRAVINGS.—Sweet's Brit. Flower Gard. t. 246.

SPECIFIC CHARACTER.—Leaves alternate, sessile, stem-clasping or petiolate. Flowers on long petioles, subcorymbose.

DESCRIPTION, &c.—A hardy perennial, growing from a foot to eighteen inches high, "branched, and terminating by a loose corymb of flowers, striated with numerous longitudinal stripes, some of which are tinged with purple, and densely clothed with spreading hairs that are unequal in length." The leaves are hairy on both sides, and fringed at the margin; some of them are fiddle-shaped, and others tapering gradually to the point: the stem leaves are sessile, and stem-clasping a little at the base; but the radical leaves are on tolerably long petioles. The whole plant is covered with hair. The species is a native of Mexico, whence it was introduced in 1827. The plants flower during the summer, and ripen abundance of seed. The stems die down to the ground towards the latter end of autumn, and the roots should be slightly protected during very severe frosts.

GENUS XXIX.

ARCTOTIS, *Lin.* THE ARCTOTIS.*Lin. Syst.* SYNGENESIA POLYGAMIA NECESSARIA.

GENERIC CHARACTER.—Flowers radiate. Receptacle honeycombed, bristly. Seeds doubly furrowed on the back; pappus chaffy. Involucre imbricate; scales rough at the margin.

DESCRIPTION, &c.—The species belonging to this genus are all somewhat tender, though they will flower well in the open air if slightly protected through the winter. They are all remarkable for the size and beauty of their flowers, which are frequently tinged with a kind of reddish orange, which harmonises admirably with green. In situations where it is not convenient to protect the plant during winter, cuttings should be made in the summer, which will strike easily if planted in a border of light earth, and which may be potted in autumn, in





1. *Anisotus tricolor*. — 2. *Anisotus maculata*. — 3. *Anisotus speciosa*. — 4. *Gundelia argutaefolia*.

order that they may be protected in a frame during the winter, till they can be planted out in spring; or the cuttings may be struck at once in pots early in autumn, and protected during the winter for planting out in the spring. Plants of this genus do much better with this treatment in the open ground than they do in greenhouses, as in the latter situation old plants are very apt to become mouldy, and the leaves to decay. In the open ground, on the contrary, the plants grow freely and produce abundance of handsome leaves and flowers of good size and brilliant colour. They should all be grown in dry light soil, and supplied with abundance of water during the growing season. All the species are natives of the Cape of Good Hope. The name *Arctotis*, signifies bear's ear, and alludes to the double furrows of the seeds.

1.—ARCTOTIS ACAULIS, *Lin.* THE DWARF ARCTOTIS.

SYNONYME.—*Arctotis speciosa*, *Jacq.*

ENGRAVING.—*Bot. Reg. t. 122.*

SPECIFIC CHARACTER.—Radical leaves lyrate. Flowers pedunculate.

DESCRIPTION, &c.—A dwarf species, very suitable for growing in boxes, or in the beds of a flower-garden close under the windows of a breakfast parlour, as the plants require a warm sunshiny situation. The flowers have a remarkably gay and brilliant appearance; and they are produced in succession from April to June, or longer. The florets of the ray are yellow and reddish on the outside; and the florets of the disk are of so dark a puce colour as to look almost black. The species is a native of the Cape of Good Hope, whence it was introduced in 1759. It is propagated by dividing the roots.

2.—ARCTOTIS MACULATA, *Willd.* THE SPOTTED ARCTOTIS.

SYNONYME.—*A. caulescens*, *Thunb.*

ENGRAVINGS.—*Bot. Reg. t. 130*; and our *fig. 2* in Plate 55.

SPECIFIC CHARACTER.—Florets of the ray fertile. Stem suffruticose.

Leaves pinnatifidly lyrate, angularly dentate; woolly below.

DESCRIPTION, &c.—A very handsome species with whitish flowers, the tips of the florets of the ray being tinged with orange, and the back of the florets being of the same colour. The leaves are remarkable for their sharp teeth, and the species is easily distinguished from the preceding one by them, as well as by its having a stem. The plant generally grows about two feet and a half high, and it is covered all over with a short white down, which when seen in the sun looks like frosted silver. It is very nearly hardy, but it requires a great deal of water during the summer months to make it flower well. It is generally increased by cuttings, which will strike without any difficulty in the open ground. It is supposed to be a native of the Cape, but the year of its introduction is not known; and some florists appear to think that it may have been originated in this country from the seed of *A. aspera*. It is very nearly hardy, and only requires protection during hard frosts. It should be grown in a light, somewhat sandy soil, and open situation.

3.—ARCTOTIS ASPERA, *Lin.* THE ROUGH-LEAVED ARCTOTIS.

SYNONYME.—*A. arborescens*, *Jacq.*

ENGRAVING.—*Bot. Reg. t. 34.*

SPECIFIC CHARACTER.—Suffruticose. Leaves indented, or deeply

pinnatifid; the upper ones somewhat cobwebbed; the lower ones rough and hairy, or villose. Appendages to the scales of the involucre revoluate and hairy.

DESCRIPTION, &c.—This very handsome plant is rather too shrubby for the present work; but I have mentioned it as it has been supposed to be the parent of the preceding species, which is a true perennial. The flowers are white, with a yellow centre and a pink back, and they have a slightly bitter smell. The following

passage from the *Botanical Register*, relating to this flower, may be amusing to such of my readers as have a taste for botany, as it applies more or less to all the species of the genus.

“On a bright warm day, under the shelter of a greenhouse, the stigmas of the various florets may be perceived to emerge from within the tube of the concealed anthers, carrying up the pollen parted with to them by those organs, and which is seen to adhere in a thick coat of yellow powder, to afford it from this new position the means of an access necessary to the otherwise unprovided stigmas of the surrounding ray, a task to which the proper organ is evidently here incompetent. By and by the same are seen to retreat gradually within the cavity of the now empty anthers. When recently emerged and charged with pollen, they bend and incline themselves with a lively motion on the slightest touch, but always in the direction whence the impulse came; and in so doing necessarily part with a portion of the pollen that covers them. And as the honeyed liquid which attracts the insect to the flower is deposited in the ray that surrounds the disk, the impulse will be the more certainly given by that means, probably the only one, from the side towards which it is requisite that the pollen should be carried. The style, by the extension and contraction of which the stigma is made to advance and withdraw, seems to consist of a substance resembling elastic gum (caoutchouc), and may be repeatedly drawn out to a considerable extent, like that contracting to its former dimensions when left to itself, with the same elastic force.”

The species is a native of the Cape of Good Hope, and was introduced in 1710.

A. AUREOLA, *Lin.*

Closely resembles the above species, excepting the colour of its flowers, which are of a brilliant reddish orange.

4.—ARCTOTIS TRICOLOR, *Jacq.* THE THREE-COLOURED ARCTOTIS.

ENGRAVINGS.—*Bot. Reg.* t. 131; and our *fig. 1*, in Plate 55. | linear, sometimes club-shaped; covered with white tomentum, with
 SPECIFIC CHARACTER.—Stemless. Leaves lyrate, spreading; upper | a recurved mucro at the tip.
 surface slightly hairy, lower one tomentose. Scales of the involucre

DESCRIPTION, &c.—This is a dwarf species, remarkable for the beauty of its flowers (which are white, and dark purple on the under side,) and for its leaves, the veins of which are strongly marked on both sides, and whitish. The disk of the flower is of a deep shining blackish brown. The plant has no stem, but the peduncles of the flowers are from six inches to a foot high. It is a native of the Cape, whence it was introduced in 1794. It should be planted in a mixture of peat and loam, and it is easily propagated by suckers. It flowers from May to July.

5.—ARCTOTIS SPECIOSA, *Willd.* THE SNOWY ARCTOTIS.

SYNONYME.—*A. breviscapa*, *Thunb.* | nescent on the lower surface, three-nerved. Scape cylindrical, striated.
 ENGRAVINGS.—*Bot. Mag.* t. 2182; and our *fig. 3*, in Plate 55. | Scales of the involucre linear, recurved.
 SPECIFIC CHARACTER.—Stemless. Leaves lyrate pinnatifid; ca-

DESCRIPTION, &c.—This species appears to be a biennial, or at most not lasting longer than three years. It requires scarcely any protection during winter. It is propagated by seeds, which it ripens freely. It is supposed to be a native of the Cape, but the year of its introduction is not known, and some think it a seedling variety of the *A. acaulis*. It will grow in almost any soil and situation.





1 *Gazania pavonia*.—2 *Gazania rigens*.—3 *Gazania uniflora*.

GENUS XXX.

GAZANIA, *R. Brown.* THE GAZANIA.*Lin. Syst.* SYNGENESIA POLYGAMIA FRUSTRANEA.

GENERIC CHARACTER.—Flowers radiate. Receptacle naked, or honey-combed. Seeds very hairy; pappus chaffy. Involucre tubular at the base, with the limb divided into numerous imbricate segments.

DESCRIPTION, &c.—The very handsome plants which compose this genus are, like the preceding kinds, only half hardy; but when treated in the same manner they may be grown easily in the open air, and certainly are splendid additions to a flower-garden. Their flowers are generally of a reddish orange. The word *Gazania* signifies treasure, in allusion to the splendour of the flowers.

1.—GAZANIA PAVONIA, *R. Brown.* THE PEACOCK GAZANIA.

SYNONYMS.—*Gorteria pavonia*, *And.*; Hazel-ringed *Gazania*.

ENGRAVINGS.—*Bot. Reg.* t. 35; *Bot. Rep.* t. 523; and our *fig. 1*, in Plate 56.

SPECIFIC CHARACTER.—Leaves pinnatifid, hairy above and woolly below; segments oval-lanceolate. Scape one-flowered. Stem decumbent.

DESCRIPTION, &c.—This splendid plant only expands its flowers in broad daylight; but as soon as the sun withdraws its light, each of the florets of the ray rolls itself upwards towards the middle, and remains in this state till it expands again the following morning as soon as the sun appears. It is sometimes considered as a biennial, but it will live three or four years, and it is increased by dividing the root-stock. It should be grown in light dry soil, and plentifully supplied with water. It is a native of the Cape, whence it was introduced in 1804.

2.—GAZANIA RIGENS, *R. Brown.* THE STIFF-LEAVED GAZANIA.

SYNONYME.—*Gorteria rigens*, *Linn.*

ENGRAVINGS.—*Bot. Mag.* t. 90; and our *fig. 2*, in Plate 56.

SPECIFIC CHARACTER.—Leaves lanceolately pinnatifid. Stem depressed. Scape one-flowered.

DESCRIPTION, &c.—This very handsome plant has the same peculiarity of rolling up its ray florets when the sun withdraws its light, as the preceding species; but when they are expanded, they are uncommonly brilliant, from their large size and the singularity of their colour, which is of a deep orange-red. The flowers appear in June, and contrast strongly with the leaves, which are of a dark green above, and a silvery white below; they are also remarkably rigid. The plant is only a short-lived perennial, and it is propagated by cuttings, as it seldom ripens its seed in this country. It requires protection during winter. It is a native of the Cape, and was introduced in 1755.

3.—GAZANIA UNIFLORA, *Sims.* THE GOLDEN-FLOWERED GAZANIA.

SYNONYME.—*Gorteria uniflora*, *Thunb.*

ENGRAVINGS.—*Bot. Reg.* t. 2270, and our *fig. 3*, in Plate 56.

SPECIFIC CHARACTER.—Stem suffruticose, decumbent. Leaves spatu-

late-lanceolate, tomentose below. Involucre smooth. Flowers one-coloured.

DESCRIPTION, &c.—This is a very pretty little plant, with golden yellow flowers, which are extremely unlike all the other species of the genus, as the disk is the same colour as the ray. The leaves, however, bear considerable resemblance to those of the last species. It is a native of the Cape of Good Hope, where it is found near the sea-coast, and whence it was introduced in 1816. It flowers in July and August, and is propagated by cuttings.

G. SUBULATA, *Lin.*

This species has yellow flowers like those of *G. uniflora*, and awl-shaped leaves. It is a native of the Cape, whence it was introduced in 1792, and it requires the same culture as the other species of the genus.

G. HETEROPHYLLA, *Willd.*

The flowers of this species resemble those of *G. rigens*, and the leaves are of the same kind, but vary more in form. The species is a native of the Cape, whence it was introduced in 1812.

GENUS XXXI.

ECHINOPS, *Juss.* THE GLOBE THISTLE.*Lin. Syst.* SYNGENESIA SEGREGATA.

GENERIC CHARACTER.—Involucre wanting. Florets hermaphrodite, all tubular. Receptacle bristly. Pappus obsolete.

DESCRIPTION, &c.—The name of Echinops is taken from two Greek words, which signify literally “like a hedgehog;” and the name is certainly very appropriate to the heads of the Globe Thistle, which look like a hedgehog curled up. The species are all natives of cold countries, and consequently they are all hardy in British gardens; they are, however, seldom cultivated, on account of the great space they take up, though in a shrubbery or any other place where there is room, their broad, luxuriant-looking leaves have a handsome and even a noble appearance.

1.—ECHINOPS STRICTUS, *Sims.* THE UPRIGHT GLOBE THISTLE.

SYNONYMES.—*E. exaltatus*, *Dec.*; *E. Ritro*, *Schk.*

ENGRAVINGS.—*Bot. Mag.* t. 2457.

SPECIFIC CHARACTER.—Stems simple, upright, one-flowered. Leaves crosely pinnatifid, spinously dentate; upper part glabrous, under part tomentose.

DESCRIPTION, &c.—The stem of this plant grows three or four feet high, quite erect, and without any branches. The leaves are alternate, and half stem-clasping; they are unevenly pinnatifid, and irregularly toothed. The florets are tubular, with a spreading limb; the tube being white, and the limb of a brilliant blue. The anthers are first blue, but afterwards become brown, and the stigmas are of a very dark blue. The contrast of these colours makes the upright globe thistle as handsome as any plant of the genus can possibly be; but the long, stiff, naked stem, and ball-like heads of flowers, will prevent any of the species from ever becoming favourites in the flower-garden. The species is a native of Russia, whence it was introduced in 1822; and, as it is only a biennial, it is propagated by seeds.

2.—ECHINOPS RITRO, *Lin.* THE SMALL GLOBE THISTLE.

ENGRAVINGS.—*Bot. Mag.* t. 932.

SPECIFIC CHARACTER.—Flower-head globose. Leaves pinnatifid, glabrous above, and tomentose beneath, spiny.

DESCRIPTION, &c.—This very pretty little species is still more decidedly blue than the preceding one; as the calyx to each separate flower is blue also. The stem of the flower and the under side of the leaves are quite white, being clothed with a silvery tomentum. The margin of the leaves is armed with strong spines. The stem is quite short and branched. The species is a native of Siberia, whence it was introduced about 1570; it is also found occasionally in the south of Europe. It is quite hardy, and it is easily propagated, either by dividing its creeping roots, or by seeds. It is a true perennial, and when once planted will last a great many years without any particular care being taken of it.

3.—ECHINOPS PANICULATUS, *Jacq.* THE TARTARIAN GLOBE THISTLE.SYNONYME.—*E. tauricus*, *Willd.*ENGRAVING.—*Bot. Reg.* t. 356.

SPECIFIC CHARACTER.—Leaves very rough, broadly pinnatifid, glabrous above, and slightly tomentose below. Stem branching.

DESCRIPTION, &c.—The flowers of this plant have no beauty to recommend them, but the stems grow six feet high, with large broad leaves, often a foot and a half long, which have a magnificent appearance in a shrubbery. This species is well adapted for planting in those situations where it is advisable to hide the dug ground of a shrubbery, as its leaves are very large, and the lower ones grow close to the ground. It is quite hardy; but, as it is only a biennial, it requires propagating every season by seeds. It is a native both of Spain and Siberia, and it was introduced in 1815 from the latter country.

E. PLATYLEPIS, *Dec.*

A blue-flowered, dwarf plant, with very broad scales to the involucre. It does not flower till September and October. Its native country and year of introduction are not known.

E. HUMILIS, *Dec.*

A dwarf plant, the stems and leaves of which are covered with a white tomentum. The flowers are blue, and they are produced from June till August. The species is a native of Siberia, whence it was introduced in 1826.

E. DAHURICUS, *Dec.*

This species has blue flowers. It is a native of Mount Caucasus, whence it was introduced in 1827. There is a variety with narrow-lobed leaves.

E. SPHÆROCEPHALUS, *Dec.*

An Austrian species, with very large heads of white florets. A native of Russia, introduced in 1819.

E. BANNATICUS, *Dec.*

A native of Hungary, introduced in 1828.

E. PERSICUS, *Dec.*

A native of Persia, introduced in 1821. Florets white.

E. SPINOSUS, *Lin.*

A native of Egypt, introduced before 1597, with spines in the head of florets. The flowers are white, and the English name of the species is "thorny-headed."

E. HORRIDUS, *Dec.*

Closely resembling the preceding species; but a native of Persia, introduced in 1817.

E. LANUGINOSUS, *Willd.*; *E. GRÆCUS*, *Dec.*

A native of the Levant, with blue flowers. The whole plant is covered with a woolly tomentum. It is a native of the Levant whence it was introduced in 1736.

GENUS XXXII.

CENTAUREA, *Lin.* THE CENTAURY.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Filaments papillose. Pappus in several rows. Seeds compressed, somewhat honeycombed on the sides. Florets five-parted.

DESCRIPTION, &c.—This genus takes its name from the legend that the Centaur Chiron used the juice of one of the species medicinally. The plants are generally hardy perennials, and those which are natives of Britain are called Knapweed. Among the annual species the corn blue-bottle is the best known. The species are not generally very ornamental, but they are quite hardy.

1.—CENTAUREA GLASTIFOLIA, *Lin.* THE WOOD-LEAVED CENTAUREA.ENGRAVING.—*Bot. Mag.* t. 62.

SPECIFIC CHARACTER.—Involucre imbricated. Scales entire. Leaves entire, decurrent.

DESCRIPTION, &c.—This species is remarkable for its leaves, which resemble those of the woad, and have the veins projecting on both sides, like those of the *Gazania*. The scales of the involucre are also remarkable for their silvery appearance. The florets are yellow, but the flowers have no great beauty. The species is a native of Siberia, and also of Persia; it was introduced in 1731.

2.—CENTAUREA BALSAMITA, *Lam.* BALSAM-SCENTED CENTAUREA.

SYNONYMES.—*Carduus orientalis*, *Tourn.*; Costmary-leaved Centaury.

ENGRAVING.—*Swt. Br. Flo. Gar.* 2d ser. t. 355, & our *fig.* 4 in *Pl.* 57.

SPECIFIC CHARACTER.—The whole plant covered with a silky wool.

Stem simple. Root-leaves lyrate; stem-leaves oblong, mucronate, entire. Flower-head ovate; involucre with smooth scales; appendages palmate, pectinate; florets of the ray numerous, slender, shorter than those of the disk, and with a three-parted limb.

DESCRIPTION, &c.—This plant is a hardy perennial, the flowers of which have a balsamic scent. The involucre is globe-shaped, and remarkable for the curious little crest-like appendages, which are stuck all over it. The leaves are large and covered with a silky tomentum. The species is a native of Mount Caucasus, and it was introduced in 1820. It is propagated by dividing the root, and will grow in any ordinary garden soil.

3.—CENTAUREA MONTANA, *Linn.* THE MOUNTAIN CENTAURY.

SYNONYMES.—*Cyanus major*, *Tourn.*; the greater blue-bottle; the large corn-flower.

ENGRAVING.—*Bot. Mag.* t. 77; and our *fig.* 1 in *Pl.* 57.

SPECIFIC CHARACTER.—Leaves lanceolate, decurrent. Stem simple. Scales of the involucre serrated.

DESCRIPTION, &c.—The corn blue-bottle is so well known a plant that it needs very little description; this, however, is the perennial species, and its flowers are so large and so handsome as to deserve cultivation in any garden. This species is a native of the German Alps, where it remains in flower all the summer; in England it is a hardy perennial, and will grow in any soil and situation. It is propagated by dividing the roots, or by seeds, which it ripens in great abundance. It was introduced before 1596, and thus has been one of the commonest of our garden-flowers for the last two hundred and fifty years.

4.—CENTAUREA OCHROLEUCA, *Willd.* THE CREAM-COLOURED CENTAURY.SYNONYMES.—*Centaurea Caucasica*, *Tourn.*ENGRAVINGS.—*Bot. Mag.* t. 1175; and our *fig.* 3 in *Pl.* 57.

SPECIFIC CHARACTER.—Scales of the involucre ciliated. Radical

leaves obovate, lanceolate, undulated; stem, leaves decurrent, lanceolate, dentate, undulated.

DESCRIPTION, &c.—The stem, which is angular, grows about a foot and a half high, and it is nearly clothed by the decurrent leaves, which are so near together as to make the stem itself appear winged. The leaves are



1. *Centaurea montana* — 2. *Centaurea hapontica* — 3. *Centaurea ochroleuca* — 4. *Centaurea Balsamita*



not at all handsome, having a coarse weedy appearance; but the flowers are very pretty, as they are large and are of a beautiful pale yellow. The species is a hardy perennial, and easily increased by seeds or parting the root. It is a native of Mount Caucasus, whence it was introduced in 1801. It is nearly allied to the large blue *Centaurea*, but it is distinguished by the undulated leaves, and by long hairs growing from the black margin of the scales of the involucre. It flowers during May, June, and July.

5.—*CENTAUREA SPHÆROCEPHALA*, *Lin.* THE PRICKLY-HEADED CENTAUREA.

SYNONYMES.—*C. cæspitosa*, *Vahl.*; *Jacea purpurea*, *Ray*; *J. maritima*, *Barrel.*

ENGRAVINGS.—*Bot. Mag.* t. 2551.

SPECIFIC CHARACTER.—Involucre beset with palmate spines. Leaves stem-clasping, hairy, oblong, dentate, lower ones pinnatifid.

DESCRIPTION, &c.—This species is by far the handsomest of all the *Centaureas*. The involucre is globe-shaped and studded over with tufts of dark-brown spines. The flowers are of a beautiful purple. It is a native of the south of Europe and the Coast of Barbary, where it grows in large matted tufts on the sand of the sea-shore; but it is quite hardy enough to bear the winter in England without protection. It flowers nearly all the summer; it is propagated either by seeds or dividing the roots. It was introduced in 1683.

6.—*CENTAUREA RAGUSINA*, *Lin.* THE CRETAN CENTAURY.

SYNONYMES.—*Jacea cretica*, *Mor.*; *J. arborea*, *Zan.*; *Stæbe montana*, *Barrel.*

ENGRAVING.—*Bot. Mag.* t. 494.

SPECIFIC CHARACTER.—Involucre ciliated. Leaves covered with a silvery tomentum, pinnatifid; segments obtusely-ovate, upper ones largest.

DESCRIPTION, &c.—This is a very singular-looking plant, with whitish-blue leaves and bright yellow flowers. It grows about three feet high, and will flower in the open border, though it requires protection during winter. It is a native of Candia and the Ionian Isles, and was introduced in 1714. It appears, however, to have been long lost to our gardens, though it is deserving of cultivation, from the silvery whiteness of its stem and leaves.

7.—*CENTAUREA SPINOSA*, *Lin.* THE SPINY CENTAURY.

SYNONYMES.—*Jacea cretica*, *Toum.*; *Stæbe spinosa*, *Bauh.*; *Cyanus spinosus*, *Alp.*

ENGRAVING.—*Bot. Mag.* t. 2493.

SPECIFIC CHARACTER.—Involucre ciliated. Radical leaves uncoiled or pinnatifid; stem-leaves tomentose, pinnatifid. Branches spiny.

DESCRIPTION, &c.—This is a rare plant, though it was introduced before 1620, and is a native of Candia, the ancient Crete. It is more curious than beautiful, and yet its small delicate flowers may be called pretty. The stem is very much branched, and each of the branches terminates in a short spine, which gives it a shrubby appearance, though it is a true perennial. It grows freely in any light garden soil, but requires a slight protection from frost.

7.—*CENTAUREA RHAPONTICA*, *Lin.* THE SWISS CENTAURY.

ENGRAVINGS.—*Bot. Mag.* t. 1752; and our *fig.* 2 in *Pl.* 57.

SPECIFIC CHARACTER.—Involucre scaly, with hard loose scales. Leaves ovate-oblong, denticulate, tomentose, below.

DESCRIPTION, &c.—This plant is very large and coarse-growing, with broad deep-green leaves. It has a very thick stem, and a large involucre, with coarse loose brown scales, and a head of purple flowers, which is nearly as large as that of the artichoke. It is only fit for growing in a shrubbery. It is a native of Switzerland, and was introduced in 1640.

C. AUREA, *Lin.*

A coarse-growing plant, with a large involucre, and a small head of flowers. A native of the South of Europe, whence it was introduced in 1758.

C. MACROCEPHALA, *Lin.*

Another species, with yellow flowers, and very coarse weedy-looking leaves. It is a native of Mount Caucasus, whence it was introduced in 1755.

There are numerous other species, but they are seldom seen in British gardens; and those above enumerated are decidedly the most ornamental.

GENUS XXXIII.

CNICUS, *Lin.* THE HORSE-THISTLE.*Lin. Syst.* SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucre ventricose, imbricate; scales spiny, surrounded by large bracts. Florets of the disk and ray equal.

DESCRIPTION, &c.—The genus *Cnicus* was established by Linnæus, and originally contained nearly all the ornamental Thistles; it is now, however, reduced to one plant, the Blessed Thistle, which singularly enough was not placed in it by Linnæus. The plants formerly included in the genus have been called by numerous names; and in De Candolle's *Prodromus*, the greater part of them are placed in the genus *Circium*. I have, however, preferred retaining the Linnæan name as being that which is best known; and I have given only one species, as it is the only one I believe that is cultivated in the gardens. The name of *Cnicus* was that anciently applied to the Thistle by Dioscorides.

1.—CNICUS SPINOSISSIMUS, *Linn.* THE FEATHER-HEADED HORSE THISTLE.

SYNONYMES.—*Carduus spinosissimus*, *Lam.*; *Circium spinosissimus*, *Scop.*; *Carlina alba*, *Bauh.*

ENGRAVING.—*Bot. Mag.* t. 1366.

SPECIFIC CHARACTER.—Leaves stem-clasping, sinuately pinnatifid, spiny. Flowers sessile.

DESCRIPTION, &c.—This plant, though it possesses no beauty in its flowers, is extremely ornamental in a garden, from its feathery white bracts, which contrast strongly with its bright-purple stems, and dark-green spiny leaves. It is a native of the Alps of Southern Europe, whence it was introduced in 1759. When cultivated in gardens, it should be grown in a light sandy soil, and in an open situation. I have seen it presenting a magnificent appearance in many gardens of Scotland, where it had plenty of room; but in small gardens in London and the suburbs, it looks so badly, that no one would suppose it to be the same plant.

2.—CNICUS AFER, *Willd.* THE BARBARY, OR TWIN-THORNED, THISTLE.

SYNONYMES.—*Cardus afer*, *Jacq.*; *C. diacantha*, *Labil.*; *Chamæpeuce afra*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 2287.

SPECIFIC CHARACTER.—Leaves sessile, lanceolate, tomentose beneath, spreading, lobes emarginate, two-spined. Flowers pedunculate, sub-corymbose. Scales of the involucre lanceolate, spinous, widely-spreading.

DESCRIPTION, &c.—This is an exceedingly handsome thistle, with long purple flowers rising up in the centre of the widely spreading starlike spines of the involucre. The leaves are studded with spines, which grow two or three together, spreading out like those of the Berberry. The species is a native of Barbary, whence it

was introduced in 1800. It is a biennial, and is very ornamental, from the great number and bright colour of its flowers. The receptacle is thickly covered with soft white hairs, among which the seeds, each crowned with a feathery pappus, are imbedded.

GENUS XXXIV.

ERYTHROLÆNA, *D. Don.* THE SCARLET THISTLE.

Lin. Syst. SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucre conical. Scales numerous; inner one imbricated, entire; outer ones reflexed, and spinously dentate. Receptacle convex, hairy. Florets all hermaphrodite, tubular; limb five-parted; segments linear, fleshy at the apex; tube five-angled, narrow at the base; filaments glandulously pilose. Anthers bristly at the base. Stigma two-cleft, segments approximate. Pappus sessile, feathery.

DESCRIPTION, &c.—There is only one species of this very singular genus: the name of *Erythrolæna* signifies a scarlet cloak, and alludes to the scarlet scales of the involucre.

1.—ERYTHROLÆNA CONSPICUA, *D. Don.* THE SHOWY MEXICAN SCARLET THISTLE.

ENGRAVINGS.—Brit. Flow. Gard. t. 134; and our *fig.* 1 in Pl. 58.

SPECIFIC CHARACTER.—Stem erect, branched; lower leaves lanceolately pinnatifid, somewhat pubescent; upper ones dark-green, shining,

but paler on the under side, reticulately veined, segments spreading, spinously dentate, undulated; upper one lanceolate, spinously dentate. Involucre smooth; scales lanceolate, scuminate.

DESCRIPTION, &c.—This very showy plant has a stem eight feet high, with numerous branches; the leaves are very stiff and spiny, somewhat resembling those of the holly; the lower ones are more than three feet long, and more than a foot in breadth. The flowers are terminal; but they appear clustered at the end of the main stem, from the number of short branches into which it is divided at the upper part, each of which is crowned with a flower. The involucre is regularly conical, tapering to a point before expansion, and it is of a bright glossy scarlet; the flowers are insignificant, and in fact the plant looks much best before they are expanded; as at that period, from its large leaves and the brilliancy of its scarlet involucres, it is a most splendid object. It requires a free air and plenty of room, but it will grow in any common garden soil. It is a native of Mexico, whence it was introduced in 1824.

GENUS XXXV.

ONOPORDUM, *Lin.* THE COTTON THISTLE.

Lin. Syst. SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle honey-combed. Pappus hairy. Involucre imbricated. Scales mucronate.

DESCRIPTION, &c.—The common Cotton Thistle is a native of Britain, where it is known by its purple flowers, and the dense, cottony web that covers the whole plant, but is easily detached by rubbing. The receptacle is succulent, and was formerly eaten like that of the artichoke. The seeds are oily, and are a favourite food for some kinds of birds; in France they have also been used for making oil. There is only one ornamental species of this genus, or rather there is only one cultivated in gardens. The name *Onopordum* signifies “to swell out an ass;” and it is supposed to allude to asses being so fond of the plant as to eat so much as to make them ill.

1.—ONOPORDUM ARABICUM, *Lin.* THE ARABIAN COTTON THISTLE.ENGRAVINGS.—*Bot. Mag.* t. 3299; and our *fig.* 2 in Pl. 58.

SPECIFIC CHARACTER.—Stem erect. Leaves somewhat woolly, de-

current, sinuately dentate. Scales of the involucre ovate-lanceolate, and each ending in a long, spinous mucro.

DESCRIPTION, &c.—This is a stately-looking plant, growing to the height of ten or twelve feet; with long, narrow leaves, sometimes more than a foot in length, and attached to the stem so as to make it appear winged. The involucre is large and spiny; the spines being connected by a kind of cobweb. The florets are numerous, and stand quite erect; they are of a dark purple. The species is a native of Arabia, but it was early introduced by the Spaniards into Buenos Ayres, where it grows in such abundance as to form what have been called the Thistle Forests of South America. It was formerly frequently grown in shrubberies, but now is seldom seen, from the great space it requires, and from its prickly leaves and stems rendering it difficult of approach. It is quite hardy, and will grow in any common soil.

GENUS XXXVI.

CARTHAMUS, *Lin.* THE SAFFLOWER, OR CARTHAMUS.*Lin. Syst.* SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Heads homogenous. Outer involucre scales foliaceous, spreading; middle ones erect, oval, expanded at the apex into an ovate appendage, which is spiny along its margin: the inner ones oblong, entire, each ending in a pungent point. Receptacle

fringed. Corollas five-cleft, almost regular, the tube expanding above the disk. Anthers each terminated by an obtuse appendage. Stigmas scarcely distinct. Achenia obovate, tetragonal, glabrous. Pappus wanting.

DESCRIPTION, &c.—The genus *Carthamus* has been very much altered, and all that bear a resemblance to the *Cardoon* have been placed in a separate genus. I have, however, preserved the old name, as being that which is best known. The word *Carthamus* is taken from an Arabian word, signifying “to paint;” because one of the species is used in dyeing, and also for making what is called vegetable rouge.

1.—CARTHAMUS CÆRULEUS, *Lin.* THE BLUE-FLOWERED CARTHAMUS.SYNONYMS.—*Onobroma cæruleum*, *Guert.*; *Cnicus alter*, *Clus.*ENGRAVINGS.—*Bot. Mag.* t. 2293; and our *fig.* 3 in Pl. 58.

SPECIFIC CHARACTER.—Stem one-flowered. Leaves ovate-lanceolate, spinously dentate.

DESCRIPTION, &c.—A very handsome species, with dark blue flowers, and a rich chesnut-brown involucre. A native of Spain, introduced before 1640, and quite hardy in British gardens.

2.—CARTHAMUS ARBORESCENS, *Lin.* THE TREE CARTHAMUS.SYNONYMS.—*Kentrophyllum arborescens*, *Dec.*; *Onobroma arborescens*, *Spreng.*; *C. rigidus*, *Willd.*; *C. hircinus*, *Lag.*ENGRAVING.—*Bot. Mag.* t. 3302.

SPECIFIC CHARACTER.—Sub-pubescent. Lower leaves elongated,

lanceolate, stem-clasping, reticulated; upper leaves ovate-acuminate, eleven-nerved: both kinds sinuately spinous. Involucre, with a leafy base. Scales ovate, outer ones spinously dentate; inner ones ciliated.

DESCRIPTION, &c.—This very showy plant, though called a tree, is in fact a true perennial. It is a handsome plant for a shrubbery, with large yellow flowers and bright green leaves, both of which have an agreeable but musky smell. The flower continues in perfection to the latter end of November. The species is a native of Spain, whence it was introduced in 1731; and it will stand out in most English winters, only requiring protection in very severe frost.





1. *Erythrolana conspicua* — 2. *Onopordum arabicum* — 3. *Cirsium caruleum* s.

GENUS XXXVII.

SERRATULA, *Dec.* THE SAW-WORT.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Involucre imbricate, scales unarmed. Receptacles bristly or chaffy. Pappus hairy, persistent. Hairs rigid, unequal.

DESCRIPTION, &c.—The plants belonging to this genus all bear considerable resemblance to the thistle, but they are easily distinguished by the scales of the involucre not being spiny. The genus takes its name from the leaves being supposed to bear some resemblance to a saw, but the resemblance is not very striking. Only a few of the species are ornamental.

1.—SERRATULA QUINQUEFOLIA, *Dec.* THE FIVE-LEAVED SERRATULA.ENGRAVING.—*Bot. Mag.* 1871.

SPECIFIC CHARACTER.—Leaves serrated, impari-pinnate; peduncles one-flowered. Scales of the involucre elongated, and coloured.

DESCRIPTION, &c.—A pretty little plant, resembling in habit and appearance the common saw-wort of the English woods. The flowers are pink, with bright-blue anthers and pink stigmas. The plant is quite hardy, and flowers in August. It is propagated by seeds or dividing the roots; and it will grow well under the shade of other trees. It is a native of the North of Persia, whence it was introduced in 1824. It takes its name of *Quinquefolia*, from its leaves consisting of two pair of leaves and one odd one, which last is generally much larger than the others.

2.—SERRATULA ALATA, *Willd.* THE WINGED SAW-WORT.

SYNONYMES.—*Carduus alatus*, *D. Don*; *Jurinea alata*, *Dec.*

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, t. 103.

SPECIFIC CHARACTER.—Leaves entire, tomentose beneath, subden-

tate, radical leaves cordate, petiolate; stem-leaves lanceolate, decurrent.

Head of flowers corymbose, paniculate. Involucre globose. Scales

lanceolate, rough.

DESCRIPTION, &c.—This species is a biennial: the stem grows about two feet high, and is much branched; the branches are furrowed, and more or less tomentose. The leaves are also densely clothed with a close white tomentum; the whole plant smells like musk. The flowers are numerous, and of a light reddish-purple. The plant is a native of Nepaul, whence it was introduced in 1812. It requires the usual treatment of biennials, and will succeed well in the common garden soil, in any clear open situation.

3.—SERRATULA SIMPLEX, *Sims.* THE ONE-FLOWERED SAW-WORT.

SYNONYMES.—*Serratula blanda*, *Bieb.*; *S. cyanoides*, *Gært.*; *Carduus mollis*, *Willd.*; *Cirsium molle*, *Scop.*

ENGRAVING.—*Bot. Mag.* t. 2482.

SPECIFIC CHARACTER.—Leaves pinnatifid; lobes distant from each other, and not touching, but spreading widely; stem simple, one-flowered. Involucre globose, rough. Seeds four-sided, warty.

DESCRIPTION, &c.—This plant, like the last, has a strong smell of musk. It is a hardy perennial, of no great beauty, from its single-flowered stem, which gives it a naked appearance. A native of Austria and Carniola, but also found near Mount Caucasus, whence it was sent to England in 1817. It will grow in any common garden soil, and in almost any situation.

GENUS XXXVIII.

CHÆTANTHERA, *Dec.* THE CHÆTANTHERA.*Lin. Syst.* SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucere imbricate. Receptacle flat, smooth. Flowers of the ray numerous, feminine; exterior lip ligulate, tridentate, covered with a silky down beneath; inner lip slender, bidentate. Flowers of the disk hermaphrodite, tubular, bilabiate; lips nearly equal. Seeds linear, oblong, four-sided. Pappus hairy, persistent.

DESCRIPTION, &c.—This genus is one of those called by modern botanists *Labiatifolia*, because each of the florets has two distinct lips, which are generally differently shaped. The name Chætanthera signifies a bristly anther, and refers to the anthers of the flowers, which have the appearance of bristles. Some of the species of the genus are annuals, and they are all natives of Chili.

1.—CHÆTANTHERA SERRATA, *D. Don.* THE SERRATED-LEAVED CHÆTANTHERA.

SYNONYMS.—Chætanthera Chilensis, *Dec.*; *C. spatulata*, *Poeppig*; *Perdicium Chilense*, *Willd.*; *Proselia serrata*, *Don.* SPECIFIC CHARACTER.—Leaves linear, somewhat wedge-shaped, serrated at the apex. Scales of the involucere lanceolate, mucroate. Pappus somewhat bristly.

ENGRAVINGS.—Brit. Fl. Gard., 2d series, t. 214; and our fig. 4 in Pl. 59.

DESCRIPTION, &c.—This very pretty little plant is an evergreen, growing in low tufts, with large golden yellow flowers; the stems, when old, become somewhat shrubby at the base. It is a native of Chili, whence it was introduced in 1835; and though it grows readily in any sandy soil, it is easily killed by wet

GENUS XXXIX.

CHAPTALIA, *Pursh.* THE CHAPTALIA.*Lin. Syst.* SYNGENESIA POLYGAMIA NECESSARIA.

GENERIC CHARACTER.—Receptacle naked. Pappus simple. Flowers of the ray in two irregular series, feminine; flowers of the disk masculine, bilabiate.

DESCRIPTION, &c.—There is only one species of this genus, which was named in honour of Monsieur Chaptal, a French botanist.

1.—CHAPTALIA TOMENTOSA, *Pursh.* THE WOOLLY-LEAVED CHAPTALIA.

SYNONYMS.—*C. integrifolia*, *Vent.*; *Tussilago integrifolia*, *Michx.*; *Perdicium scabiflosculare*, *Walt.* SPECIFIC CHARACTER.—Leaves obovate-oblong, reversedly dentate; upper surfaces covered with a thick wool, and under surface with a silvery tomentum. Flower naked.

ENGRAVING.—Bot. Mag. t. 2257.

DESCRIPTION, &c.—This little plant at first sight has almost the appearance of some kind of daisy, as it has no stem but the flower-scapes, which rise from a tuft of leaves, as in that flower. The leaves themselves are peculiar; they are toothed, but with the teeth the reverse way, that is, directed downwards towards the footstalk of the leaf. The upper surface of the leaf is green, but covered with a thick wool; and the under surface is pale and covered with a dense, white, silky pubescence. The flowers are white, with a yellow disk, but they never open fully, and are what botanists call nodding, that is, slightly bent downwards from the stalk. The plant is a hardy perennial, a native of North America, whence it was introduced in 1806; and it only requires the common culture of garden flowers.

GENUS XL.

MOSCHARIA, *Dec.* THE MOSCHARIA.*Lin. Syst.* SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucre five-cleft. Receptacle chaffy, | the base. Flowers hermaphrodite, bilabiate, equal. Pappus chaffy,
chaff irregularly formed, the outer row hood-shaped; and gibbous at | very short in many parts.

DESCRIPTION, &c.—This plant was named Moscharia by the late Professor De Candolle, from its strong musky smell. There is only one species.

1.—MOSCHARIA PINNATIFIDA, *Dec.* THE PINNATIFID-LEAVED MOSCHARIA.SYNONYME.—*Gastrocarpha runcinata*, *D. Don.*ENGRAVING.—Sweet's *Brit. Flower Garden*, t. 229.

SPECIFIC CHARACTER.—Leaves alternate, runcinately pinnatifid,

upper ones stem-clasping. Segments lanecolate, mucronate, undulate,
and acutely dentate. Flowers pedunculate, and in diffuse panicles.

DESCRIPTION, &c.—This plant, though called an annual in Sweet's *Brit. Flow. Garden*, is in fact a biennial, as it does not flower till the second year, unless raised in heat. It is a native of Chili, whence it was introduced in 1826. The flowers are white, and the whole plant has a strong musky smell. It is more singular than beautiful, yet it is more frequently grown than some other species which appear much more worthy of cultivation.

GENUS XII.

CATANANCHE, *Lin.* THE CATANANCHE.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle chaffy. Involucre imbricate. Pappus bristly, each calyx having five bristles.

DESCRIPTION, &c.—There are only two species in this genus, one an annual with yellow flowers, the other with blue flowers, and a perennial. The word Catananche means a strong stimulant, and relates to the supposed medicinal virtues of the plant.

1.—CATANANCHE CÆRULEA, *Lin.* THE BLUE CATANANCHE.SYNONYME.—*C. chondrille*, *Bauh.*ENGRAVINGS.—*Bot. Mag.* t. 293; and our *fig. 3* in *Pl.* 59.SPECIFIC CHARACTER.—Scales of the involucre inferior, ovate.
Flowers blue.

DESCRIPTION, &c.—This very beautiful plant is a native of the South of France, where it grows on hills among pieces of loose rock and stones, from which it appears scarcely possible for it to obtain sufficient nourishment. It is a true perennial, and quite hardy, so long as it is grown in dry soil; but it is easily killed by wet. The flowers appear in July, and continue till October. It is generally propagated by seeds, which should be sown in spring, and transplanted the following autumn to the border where the plants are to flower. This is said to be the best mode of culture; as though the plants raised from seeds sown in autumn as soon as the seeds are ripe, will flower sooner, they are so much injured by having to pass the winter while in a comparatively feeble state, as rarely to make good plants. After the first transplanting, the plants should not be taken up, as they are always injured by removal; and, indeed, some florists carry this feeling so far as to sow the seeds in the place where they wish the plant to remain. It must be observed, that though this species

should always be planted in a dry soil, and should be kept as dry as possible during winter, it requires abundance of water when it is about to flower. It was introduced before 1640; and consequently it has been a common garden flower in this country above two hundred years.

GENUS XLII.

UROSPERMUM, *Scop.* THE SHEEP'S BEARD.

Lin. Syst. SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle naked. Pappus feathery, stalked. Involucre of the calyx eight-parted, glabrous.

DESCRIPTION, &c.—This genus is very nearly allied to *Tragopogon*, the Goat's-beard; but it has been separated on account of the involucre being tubular at the base. The botanic name is derived from two Greek words, signifying a shoal of seeds. There is only one perennial species.

1.—UROSPERMUM DALECHAMPII, *Scop.* THE GREAT-FLOWERED SHEEP'S BEARD.

SYNONYMES.—*Anopogon Dalechampii*, *Willd.*; *Tragopogon Dale-*
champii, *Lin.*; *T. verticillatum*, *Lam.*

SPECIFIC CHARACTER.—Involucre pubescent, unarmed. Leaves pin-
natifidly runcinate.

ENGRAVING.—*Bot. Mag.* t. 1623.

DESCRIPTION, &c.—A coarse-growing plant, with a large head of pale yellow florets, which are purple on the back. The leaves are large, and somewhat coarse, with very strongly-marked veins. It is a hardy perennial, a native of Spain and the southern part of France, whence it was introduced before 1739. It is now very seldom seen in gardens.

GENUS XLIII.

SCORZONERA, *Lin.* THE VIPER'S GRASS.

Lin. Syst. SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle naked. Pappus feathery, with a short stalk. Involucre imbricated. Scales rough at the margin.

DESCRIPTION, &c.—The common *Scorzonera*, or Viper's Grass, (*S. hispanica*), is a well-known plant in Spain, where it is considered as a sure remedy against the bite of a viper; the name *Scorzonera* signifying literally Viper Grass. The roots of the common species are frequently cooked and sent to table; and its flowers are yellow, but not ornamental. Most of the other species have yellow flowers, but some are purple or rose-coloured. Only one kind is worth growing in flower-gardens.

1.—SCORZONERA PURPUREA, *Lin.* THE PURPLE VIPER-GRASS.

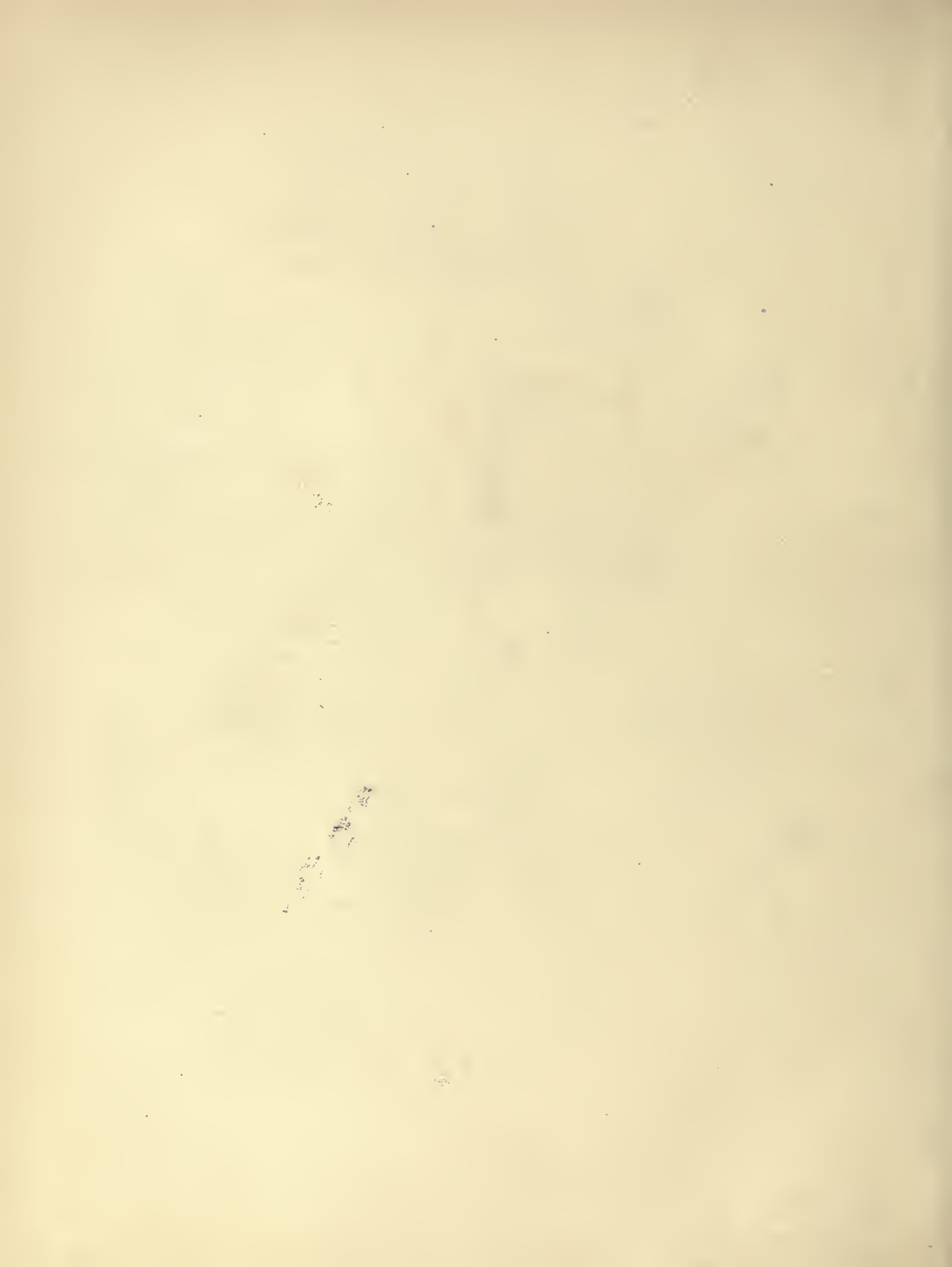
ENGRAVINGS.—*Bot. Mag.* t. 2294; and our *fig.* I in Pl. 59.

SPECIFIC CHARACTER.—Leaves linear, subulate, channelled, or triangular. Stem branched. Peduncles cylindrical.

DESCRIPTION, &c.—The large-flowered variety of this very handsome plant is well deserving of cultivation in any garden. It is quite hardy, and produces its very showy lilac flowers in May. It is a native of Austria, whence it was introduced in 1759.



1. *Scorzonera purpurea*. 2. *Lactuca perennis*. 3. *Catananche cerulea*.
4. *Chatanthera serrata*. 5. *Renanthes alba*.



GENUS XLIV.

LACTUCA, *Lin.* THE LETTUCE.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle nearly naked. Involucre imbricate. Scales with margin. Pappus simple, stipitate. Seeds smooth.

DESCRIPTION, &c.—My readers will, perhaps, be surprised at my introducing the Lettuce in my series of ornamental plants; but I think the flowers of one of the species so pretty, and the leaves so unlike those of the common garden Lettuce, that it appears to me worth cultivation. The word *Lactuca* is derived from *Lac* (milk), in allusion to the milky juice which is abundant in all species.

1.—LACTUCA PERENNIS, *Lin.* THE PERENNIAL LETTUCE.SYNONYMES.—*Chondrilla cœrulea*, *Bauh.*; *C. altera*, *Dodd.*ENGRAVINGS.—*Bot. Mag.* t. 2130; and our *fig. 2*, in *Pl.* 59.

SPECIFIC CHARACTER.—All the leaves pinnatifid. Segments linear, occasionally dentate. Flowers in corymbose panicles.

DESCRIPTION, &c.—This species, though a native of the southern parts of Europe, is quite hardy in British gardens, in a dry calcareous soil. It flowers from June to August, and its flowers, which are light purple, with a white centre, have a gay and brilliant appearance. It was introduced before 1596.

GENUS XLV.

PRENANTHES, *Lin.* THE PRENANTHES.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle naked. Involucre calyx-like. Seeds cylindrical, striated, truncate in the upper parts. Pappus simple, sessile.

DESCRIPTION, &c.—The genus *Prenanthes* was founded by Linnæus, but the species it contained have been since nearly all distributed among other genera. They are rather pretty, and one is well deserving of cultivation. The word *Prenanthes* is derived from two Greek words, signifying a drooping flower. All the species are hardy.

1.—PRENANTHES ALBA, *Lin.* THE WHITE PRENANTHES.SYNONYMES.—*P. suavis*, *Sal.*; *Narbalus suavis*, *Dec.*; *N. albus*, *Hook*; *Harpalyce alba*, *D. Don.*ENGRAVINGS.—*Bot. Mag.* t. 1079; and our *fig. 5*, in *Pl.* 59.

SPECIFIC CHARACTER.—Flowers numerous, subumbellate. Leaves angular, dentate.

DESCRIPTION, &c.—This very pretty plant, though now so seldom grown, is well deserving of cultivation. It is a native of North America, and, consequently, quite hardy in British gardens, where it will grow from three to six feet high in any common garden soil. The stems are generally purplish; the involucre are of a dark purple; and the flowers milk-white. The anthers are a brownish yellow, and the stigmas, which project a long way beyond the flower, are green. The flowers are sweet-scented; but the whole plant abounds in a milky juice, that is so intensely bitter, that, in Georgia, where the plant grows wild, it is called the Gall-of-the-earth. The American Indians use it as a remedy for the bite of venomous serpents. It was introduced in 1778, and it is propagated either by seeds or by dividing the roots. It flowers in July and August.

P. ALTISSIMA, *Willd.*

This was the first species of the genus that was introduced, as it was sent from N. America to England in 1696. It is a very tall-growing plant, and the flowers are yellow.

P. SERPENTARIA, *Lin.*

The flowers are of a dark purple, and they do not appear till September, remaining on till they are killed by frost. This is also a native of North America, whence it was introduced in 1823.

P. RUBICUNDA.

The flowers are white, and the involucre rose-colour. A native of Carolina, and also introduced in 1823.

P. PURPUREA, *Willd.*

A native of Germany, with dark purple flowers; introduced in 1658.

P. HISPIDEA, *Sal.*

A native of Siberia, with yellow flowers; introduced in 1823. This species flowers in June.

P. DIVERSIFOLIA, *Sal.*

This species has also yellow flowers, and is a native of Siberia; but it is a biennial. It was introduced in 1827.

GENUS XLVI.

LASIOPUS, *D. Don.* THE LASIOPUS.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Seeds compressed, flat, tubercled, and rough at the margin, with a short beak at the apex. Disc dilated, orbiculated. Pappus in several rows. Involucre imbricated in several series. Rachis entirely surrounded by bracts.

DESCRIPTION, &c.—There is only one species in this genus, and it is a plant so much resembling the common Dandelion, that it would not have been worth mentioning, had it not been interesting in a botanical point of view. The name *Lasiopus* means hairy-footed, and alludes to the peduncles of the flowers.

1.—LASIOPUS SONCHUS, *D. Don.* THE SOW-THISTLE-LIKE LASIOPUS.

ENGRAVING.—Sweet's Brit. Flow. Gard. 2 Series, t. 346.

SPECIFIC CHARACTER.—Leaves runcinate. Stems simple, naked, one-flowered. Flower-heads oval. Pappus white.

DESCRIPTION, &c.—A hardy perennial. A native of Armenia, whence it was introduced in 1835. It is quite hardy, and has a cheerful appearance from its bright yellow flowers, though it is too much like the common British weed to render it deserving of cultivation.

GENUS XLVII.

TROXIMON, *Pursh.* THE TROXIMON.*Lin. Syst.* SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucro double; exterior loosely imbricated with ovate lanceolate scales; inner with ten or twelve closely packed scales. Receptacles flat, somewhat honey-combed, and oblong, attenuated towards the beak. Pappus hairy towards the beak in several series.

DESCRIPTION, &c.—The word *Troximon* signifies eatable. There are two species in the genus, both natives of North America

1.—TROXIMON GLAUCUM, *Pursh.* THE GLAUCCOUS-LEAVED TROXIMON.ENGRAVINGS.—*Bot. Mag.* t. 3462.

SPECIFIC CHARACTER.—Leaves lanceolate, attenuated towards the lower part, slightly dentated. Flowers large; corolla hairy at the mouth.

DESCRIPTION, &c.—There are two plants figured in the *Botanical Magazine* under the name of *Troximon glaucum*, but which are so different from each other as to agree only in the circumstance of both having glaucous leaves. Thus the name of *glaucum* will apply to both; but it appears now decided that the plant with the largest flowers shall be called *T. glaucum*, and the other *T. cuspidatum*, though the leaves of the second species are more glaucous than the first. *T. glaucum* is then a strong-growing plant, with numerous radical leaves, eight or ten inches long, and no proper stem. Numerous flower-scapes, however, rise from the radical leaves, each bearing a large bright yellow flower. The involucre consists of numerous scales, the outer ones of which are thickly covered with white woolly hairs. The whole plant abounds in milky juice. The root is fleshy, sending out numerous runners, by which the plant is rapidly increased. It is a native of the Rocky Mountains, in N. America, whence it was introduced from seeds gathered by Mr. Drummond, who accompanied Sir John Franklin's land expedition in search of the North-west Passage.

2.—TROXIMON CUSPIDATUM, *Pursh.* THE CUSPIDATE TROXIMON.SYNONYMES.—*T. glaucum*, *Sims.*; *T. marginatum*, *Null.*ENGRAVINGS.—*Bot. Mag.* t. 1667.

SPECIFIC CHARACTER.—Scape, one-flowered. Outer scales of the involucre cuspidate. Leaves, linear, entire, and very glaucous.

DESCRIPTION, &c.—This plant is very different from the preceding species; as, instead of the root-leaves forming a sort of tuft, they stand erect, and partially sheath the flower-scape. The leaves themselves are extremely glaucous, with a very broad white mid-rib, which is prominent on the upper side; and they are slightly tinged with pink below. The outer scales of the involucre are few; they are a deep purple, and in shape resemble the cusps of a Gothic window. The flowers are a bright yellow, and the anthers are dark orange. The plant is a native of the banks of the Missonri, in North America, and was introduced in 1811. It flowers in May.

CHAPTER XXVII.

CAMPANULACEÆ.

CHARACTER OF THE ORDER.—Calyx superior, usually five-lobed, persistent. Corolla monopetalous, inserted into the top of the calyx, usually five-lobed, withering on the fruit, regular æstivation valvate. Stamens inserted into the calyx alternately with the lobes of the corolla, to which they are equal in number. Anthers two-celled, distinct. Pollen spherical. Ovary inferior, with two or more poly-

spermous cells opposite the stamens, or with as many lobes as there are cells. Fruit dry, crowned by the withered calyx and corolla, dehiscing by lateral irregular apertures or by valves at the apex, always loculicidal. Seeds numerous, attached to a placenta in the axis; embryo straight, in the axis fleshy albumen; radicle inferior.—(*Lindley.*)

DESCRIPTION, &c.—There are about twenty-one genera comprised in this order, the greater part of which are herbaceous plants, and the rest under-shrubs; they all abound in a white milky juice; and about half of them are hardy. The leaves are generally alternate, without stipules. The flowers are usually blue or white, and very rarely yellow. The name of *Campanulaceæ* is taken from the genus *Campanula*, the flowers of which are

bell-shaped, *Campanula* signifying a little bell. The plants belonging to this order are nearly allied to *Compositæ*, many genera of which have also a milky juice; but the *Campanulaceæ* are distinguished by their anthers being free; and their fruit many-seeded. They have also always a number of short stiff hairs on the style, to collect the pollen from the anthers, which burst before the stigma is ready to receive it, and even while the flower is yet in the bud. Hairs of a similar nature are found in some few of the *Compositæ*, but then the anthers are always combined into a tube. The milky juice of the *Campanulaceæ* is also rather acrid, and the leaves of the plants are not fleshy; whereas when the *Compositæ* have milky juice it has stupefying qualities, and the leaves which contain it are succulent. None of the *Campanulaceæ* are of much use; though some few, such as the Rampion, are occasionally eaten. The flowers of all, however, are highly ornamental, and they are well deserving of cultivation in every garden. By far the greater part of the species are natives of the temperate regions of Asia, Europe, and North America; though some are natives of the Cape of Good Hope, and a few are found within the tropics.

GENUS I.

JASIONE, *Lin.* SHEEP SCABIOUS.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla deeply five-parted; segments linear, lanceolate. Stamens five, with slender filaments, and with the anthers combined into a tube at the base; pollen blue or purplish. Style pilose from the middle to the apex; the pili, or hair,

disposed in ten rows; stigmas two, short. Capsule two-celled, spheroid or ovoid, dehiscing by a broad hole at top, with very short valves. Seeds small, ovoid, shining.—*G. Don.*

DESCRIPTION, &c.—The genus *Jasione* seems rather to belong to *Compositæ* than to *Campanulaceæ*, as its flowers are in heads and its anthers are united. There is, however, the important difference that the seed-vessels are many-seeded, whereas those of the *Compositæ* have only one seed in each, which adheres to its covering, and is of the kind called an achenium. The flower-heads of the *Jasione* have also distinct bracts, instead of being furnished with an involucre of many bracts grown together; and the style is covered with hairs to collect the pollen from the anthers, as in the other genera of the order. The name of *Jasione* was used by Theophrastus, but its meaning is not known.

1.—JASIONE PERENNIS, *Lam.* THE PERENNIAL SHEEP SCABIOUS.

SYNONYMES.—*J. montana* var. *Willd.*; *J. levis*, *Lam.*

ENGRAVINGS.—*Bot. Reg.* t. 505; *Bot. Mag.* t. 2198; *Bot. Cab.* t. 923; and our *fig.* 1, in *Pl.* 60.

SPECIFIC CHARACTER.—Stems erect, simple. Leaves rather hairy; radical ones obovate; cauline ones oblong-linear, flat; peduncles naked; bracts, pilose inside.

DESCRIPTION, &c.—A very showy handsome plant, with much larger heads of flowers than the common Sheep Scabious, and the flower of a deeper blue. The leaves are strictly linear, that is, they are neither tapering at the points, nor waved nor curled at the edge. The species is a native of the South of France, whence it was introduced in 1787. It should be grown in a warm dry border, open to the south. It is a most abundant flowerer, and the flowers last nearly all the summer.

There are two or three other perennial species; but they appear very closely to resemble the above. The common English Sheep Scabious is an annual.



1. *Jasione perennis*. — 2. *Michauxia Campanuloides*. — 3. *Phyteuma Scorzonerifolia*.
4. *Petromarula pinnata*.

GENUS II.

PHYTEUMA, *Lin.* THE RAMPION.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla five-parted; segments cohering together a long time, and in one species always. Stamens five, alternating with the lobes of the corolla; filaments long, filiform, broadest at the base; anthers free, pollen violaceous or red-dish. Style filiform, pilose. Ovarium inferior, two or three-celled. Capsule dehiscing laterally by two or three valves at the base or middle part. Seeds ovoid, sometimes a little compressed, usually shining.

DESCRIPTION, &c.—There are numerous species in this genus, all perennials, but, generally speaking, they have so great a family likeness to each other that a few will suffice to give a general idea of all the rest. The name of *Phyteuma* was used by Dioscorides, but its meaning is not known.

1.—PHYTEUMA CORDATA, *Vill.* THE HEART-LEAVED PHYTEUMA, OR HORNED RAMPION.SYNONYMES.—*P. cososum*, *Don.*; *P. brevifolium*, *Schle.*ENGRAVING.—*Bot. Mag.* t. 1406.

SPECIFIC CHARACTER.—Bracts cordate-acuminate. Head of flower

sub-globose, very short. Radical leaves oblong, cordate, crenate; stem leaves half clasping the stem. Stigmata three-cleft.

DESCRIPTION, &c.—This very curious head of flowers looks at a little distance almost like a gigantic specimen of Clover. The species is a native of Mount Caucasus, whence it was introduced about 1810. It is quite hardy, and it is propagated either by seeds or dividing the root.

2.—PHYTEUMA SCHEUCHZERI, *Willd.* THE SWISS RAMPION.SYNONYMES.—*P. ovatum*, *Lam.*; *P. corniculatum*, *Clairn.*; *Ranunculus alpinus*, *Scheuchz.*ENGRAVING.—*Bot. Mag.* 1797.

SPECIFIC CHARACTER.—Radical leaves petiolate, ovate-lanceolate,

bluntly serrated; lower cauline ones linear, lanceolate, acutely serrated; upper ones linear, nearly entire of flowers. Heads, spherical; bracts very long, reflexed.

DESCRIPTION, &c.—This species bears some resemblance to the last, as the flowers are still in round heads, but the heads are more spreading, and not so decidedly horn-shaped. The stems are erect, and grow about a foot and a half high; the leaves are long and narrowed at both extremities. It is a native of Switzerland, whence it was introduced in 1813, and it flowers in May and June. It will grow in any soil and situation, and it may be propagated either by seeds or dividing the root.

3.—PHYTEUMA SCORZONERIFOLIUM, *Vill.* THE SCORZONERA-LEAVED RAMPION.ENGRAVINGS.—*Bot. Mag.* 2271; and our *fig. 3*, in Pl. 60.

SPECIFIC CHARACTER.—Leaves of various forms; radical ones petio-

late, ovate-cordate, or ovate; cauline leaves linear-lanceolate; spike ovate; bracteas reflexed, linear, glabrous.

DESCRIPTION, &c.—An elegant plant, with a long spike of loose dark purple flowers, with dark orange or reddish-purple stamens. The stem is erect and slender, and the leaves are very long and narrow, and they are sharply toothed. The spike of flowers is cylindrical, and very handsome, from the colour of the flowers and the elegance of their long club-shaped stigmas. There is a variety with white flowers. It is a native of the Alps of Dauphiné, whence it was introduced in 1817. It is quite hardy, and will grow in any soil or situation that is not too rich.

4.—PHYTEUMA BETONICÆFOLIUM, *Vill.* THE BETONY-LEAVED RAMPION.

ENGRAVING.—Bot. Mag. t. 2066.

SPECIFIC CHARACTER.—Lower leaves oblong-acuminate, simply

serrulated; superior ones linear-lanceolate, nearly entire; spikes ovoid, almost bractless. Stigmas, three.

DESCRIPTION, &c.—A very curious-looking plant, not nearly so handsome as the last, but more singular-looking, from the petals of the flowers curling up and leaving the projecting stigmas. It is also a native of the mountains of Dauphiné, whence it was introduced in 1816. It flowers from June to August. It will grow in any common garden-soil or situation.

5.—PHYTEUMA STRIATA, *Lin.* THE UPRIGHT RAMPION.SYNONYMES.—*P. Limoniifolium*, *G. Don.*; *P. stylosum*, *Schrank.*; *P. virgatum*, *Lod.*

ENGRAVINGS.—Bot. Mag. t. 2145; Bot. Cab. 1667.

SPECIFIC CHARACTER.—Stem branched. Radical leaves on long petioles, quite glabrous, lanceolate, a little toothed. Spikes long, interrupted. Calyx glabrous. Capsules ovoid, glabrous.

DESCRIPTION, &c.—An elegant little plant, with large pale blue flowers, very widely apart. It is a native of the Levant. It is quite hardy, and appears to have been introduced about 1818.

6.—PHYTEUMA CAMPANULOIDES, *Sims.* THE CAMPANULA-LIKE RAMPION.

ENGRAVING.—Bot. Mag. t. 1015.

SPECIFIC CHARACTER.—Stem, simple, erect. Flowers in threes, in long compound racemes. Leaves ovate, bluntish, crenated; middle ones

broad, sessile; upper ones lanceolate and somewhat serrated, pubescent beneath.

DESCRIPTION, &c.—This is the handsomest of all the species, as its dark purple flowers are produced alternately, in clusters of three each, in a long spike (or rather in a close raceme, as the flowers have footstalks, though very short ones). The leaves are small, and not very handsome. The species is quite hardy, and flowers in July and August; it may be propagated by dividing the roots, and it will grow in any common garden soil. It is a native of Mount Caucasus, and was introduced in 1804.

7.—PHYTEUMA SPICATUM, *Willd.* THE SPIKED RAMPION.SYNONYME.—*Rapunculus spicatus*, *Mill.*

ENGRAVING.—Bot. Mag. t. 2347.

SPECIFIC CHARACTER.—Lower leaves on long petioles, cordate-ovate,

acute, biserrated; upper ones ovate-lanceolate. Spikes cylindrical, elongated. Bracts linear-subulate, glabrous; stigma two-cleft.

DESCRIPTION, &c.—The flowers of this species have no beauty to recommend them, as they are of a dirty yellowish white; but it is said that there is a variety which has a blue tint. The species is a native of Middle Europe, and it was introduced in 1812. It is quite hardy, and only requires the common garden culture.

GENUS III.

PETROMARULA, *Pers.* THE CANDIOT RAMPION.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla five-parted. Stamens five, alternating with the lobes of the corolla. Filaments dilated

at the base, longer than the anthers. Style glabrous. Stigma capitate, fleshy, and hairy. Ovary three-celled, inferior; capsule erect.

DESCRIPTION, &c.—There is only one species of this genus, which takes its name from two Greek words, signifying the Herb of the Rock, from the plant in its native state always growing on rocks or mountains. It was formerly included in the genus *Phyteuma*; but it has been separated on account of its fleshy, capitate stigma and more deeply-lobed leaves.

1.—PETROMARULA PINNATA, *Pers.* THE WINGED CANDIOT RAMPION.

SYNONYMES.—*Phyteuma pinnata*, *Linn.*; *Rapunculus creticus*, *Bauh.* | *fig. 4*, in Plate 60.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d series, t. 224; and our | SPECIFIC CHARACTER.—Radical leaves petiolate, ovate, acute, petio-
lated, marginate, and lobate. Flowers in lax racemes, pedicellate.

DESCRIPTION, &c.—This species grows in tufts on the rocky shores of Candia, (the ancient Crete,) and also on some mountains in Italy. It was first introduced in 1640, but appears to have been lost, and again introduced several times; and still it is seldom seen in collections, from the great difficulty which attends its culture. It grows well in the open ground, if planted in May, in a rich loamy soil, sending up forty or fifty stems, and blossoming in August, but requires protection during winter; and it is very difficult to propagate, as the roots are fleshy, and so full of milky juice as to bleed exceedingly when divided; and the seeds are generally abortive, unless care be taken to apply the pollen to the stigma.

GENUS IV.

MICHAUXIA, *Lin.* THE PERSIAN BELL-FLOWER.*Lin. Syst.* OCTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx eight or ten-cleft, having the recesses covered by appendages. Corolla eight or ten-parted, rotate. Stamens eight or ten, free. Filaments very broad, membranous, approximate at the base. Anthers yellow, cuspidate at the apex. Style covered by hairs, which are disposed in sixteen rows. Stigmas eight, filiform. | Ovary inferior, eight-celled; cells opposite the calycine lobes. Capsule drooping, eight or ten valved, debiscing at the base. Seeds numerous, ovate, rusty, inserted in fleshy receptacles, which are situated at the inner angles of the cells.

DESCRIPTION, &c.—There are only two species of this genus, both of which are biennials, and natives of the East, with very singular flowers and lyrate leaves. Their unpronounceable generic name was given them in honour of the celebrated Michaux, botanist to Louis XVI. of France. Notwithstanding the difficulty of pronouncing this name, it is perhaps less objectionable than many of those given to plants in honour of persons; as Michaux was really a great botanist, who not only immortalised himself by his work on the Trees of America, but actually discovered the genus which has been named after him.

1.—MICHAUXIA CAMPANULOIDES, *Lherit.* THE CAMPANULAR-LIKE MICHAUXIA, OR LYRATE-LEAVED CAMPANULA.

SYNONYMER.—*M. strigosa*, *Pers.*; *Campanula lyrefolia*, *Sal.*; | SPECIFIC CHARACTER.—Stem pilose; radical leaves lanceolate, irre-
Mindium rhazes, *Adan.*; *Medium dioscorides*, *Ranw.* | regularly lobed; petiolos marginate, lobed; appendages of the sinu-
ENGRAVINGS.—*Bot. Mag.* t. 219; and our *fig. 2*, in Pl. 60. | of the calyx shorter than the lobes.

DESCRIPTION, &c.—This very singular plant, when the flowers are in the bud, bears a close resemblance to the Campanula; but when the flowers open, the corolla divides into eight petals, which curl back, and show the broad filaments growing close together at the base. The anthers are yellow, and the stigma is divided into eight lobes. There are also eight stamens, and the limb of the calyx is divided into eight parts. The stems are red, and the flowers white, tinged with pink. The leaves are large, and irregularly-lobed, with a very conspicuous mid-rib; and the root is fusiform, that is, shaped like a spindle. The plant grows about six feet high, and produces its numerous flowers in July and August. It was found near Aleppo, and on Mount Lebanon. It was introduced in 1787; and, though it was at first supposed to require a greenhouse, it is now found to be

quite hardy, except as regards ripening its seeds, which it very rarely does in any quantity. It is a biennial, the seeds of which should be sown in autumn, and the young plants suffered to remain in the seed-bed till May, when they should be removed to where they are to flower.

2.—MICHAUXIA LÆVIGATA, *Vent.* THE SMOOTH MICHAUXIA.

SYNONYME.—*M. decandria*, *Fisch.*

ENGRAVING.—*Bot. Mag.* t. 3128.

SPECIFIC CHARACTER.—Stem very tall, glabrous, and shiny; leaves doubly dentate, hispid; radical leaves ovate on long petioles;

stem leaves sessile, oblong, lower ones attenuated at the base, upper ones cordate; the corolla, calyx, stamens, and stigma are all in ten parts each.

DESCRIPTION, &c.—This plant is a perennial, with a branched fleshy root. The stem grows above eleven feet high, smooth, shining, upright, and perfectly straight. The leaves are sprinkled on both sides with harsh erect hairs, and the flowers are scattered nearly the whole length of the stem, expanding slowly and in succession from below upwards. The flowers are white, and are divided into ten slender segments, about an inch long, which spread out instead of curving backwards. The anthers are also very slender. The flowers are not very ornamental, but they continue appearing nearly all the summer and autumn; and the whole plant yields a large quantity of milky juice. The species is a native of Persia, and it was introduced in 1830. The root appears quite hardy, but the stems are killed down to the ground every winter, generally before all the flower-buds are expanded.

GENUS V.

CANARINA, *Martyn.* THE CANARINA.

Lin. Syst. HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx six-cleft. Corolla six-lobed at the apex, large, campanulate. Stamens six, free; filaments thickest at the base, glabrous. Style inclosed, hispid above, the hairs disposed in twelve rows. Stigmas six. Capsule six-celled, debiscing at the apex.

DESCRIPTION, &c.—The only species that has been introduced into England, being a native of the Canary Islands, the name of Canarina was given to the genus; but this name is obviously a very bad one, as another species has been since found in Africa, and others may exist in different parts of the world.

1.—CANARINA CAMPANULA, *Lam.* THE CANARY BELL-FLOWER.

SYNONYME.—*Campanula canariensis*, *Lin.*

ENGRAVINGS.—*Bot. Mag.* t. 444; *Bot. Cab.* t. 1376.

SPECIFIC CHARACTER.—Plant glaucescent. Root tubrous, fusiform.

Stems ascending. Leaves hastately subcordate, irregularly toothed. Flowers solitary, terminating or axillary.

DESCRIPTION, &c.—This very singular plant grows to the height of about six feet, with handsome leaves, the mid-ribs of which are slightly tinged with pink. The flowers are of a pale yellowish-orange, tinged with red, and drooping. The plant is a native of the Canary Islands, whence it was introduced in 1696; but is now seldom grown, as it begins to flower in winter, and continues in blossom till March; and thus it is generally killed if planted in the open air. It looks very well, however, if planted in the open ground of a conservatory, or in boxes protected by a verandah. It is rather difficult to propagate, as if its roots be broken or wounded in dividing them, the milky juice will flow plentifully, and this generally occasions them to rot. When planted in the open air, the soil should be a light sandy loam, mixed with a fourth part of lime-rubbish. When the plant

has done flowering, the stems generally die down to the ground, and the plant remains in a dormant state all the summer ; but it should be still kept in a warm dry situation, so that the roots may be properly matured for the following year. It is very suitable for sheltered situations on the South and West coast.

GENUS VI.

ADENOPHORA, *Alph. Dec.* THE ADENOPHORA, OR SIBERIAN BELL-FLOWER.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla campanulate or funnel-shaped, five-lobed at the apex. Stamens free. Filaments erect, dilated, and ciliated at the base. Style projecting a long way beyond the corolla, hairy, hairs disposed in ten rows ; lower part of the style smooth. Stigma three-lobed. Capsule three-celled, opening on the side and base by three valves. Seeds ovate, very small and flat.

DESCRIPTION, &c.—The very elegant flowers that compose this genus are easily distinguished from the true Campanulas by their projecting style and their irregularly shaped leaves. The generic name is derived from two Greek words, signifying “bearing glands,” in allusion to the stigma being clothed with glandular hairs while in its club-shape, in which it first appears though it becomes three-cleft when ripe.

1.—ADENOPHORA INTERMEDIA, *Sweet.* THE INTERMEDIATE ADENOPHORA.

SYNONYMES.—*Campanula intermedia, Ræm. et Schult. ; Campanula stylora, Hort. Par.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard., 2d Series, t. 108 ; and our fig. 1, in Plate 61.*

SPECIFIC CHARACTER.—Radicl. leaves petiolate, cordate, dentate. Stem leaves lanceolate, attenuated at the base, closely serrated ; lower ones on short petioles, elliptico-lanceolate ; upper ones sessile, acuminate ; panicles of flowers naked, style very long.

DESCRIPTION, &c.—This very elegant plant produces several stems from the same root, which attain, when the plant is strong, the height of three feet ; the panicle of flowers is about a foot long ; the leaves are variable in form, but they are all smooth, and of a pale green ; the flowers are of a pale blue, small, and gracefully drooping, with a style which is about twice the length of the corolla, being very smooth and slender at the base, and thickening upwards, where it is densely covered with glandular hairs. The stigma is three-cleft, with the points bent back. This very elegant plant is a native of Siberia, whence it was introduced in 1820 ; but notwithstanding it comes from so cold a country, it is sometimes injured by spring frosts ; it flowers in May. It is propagated by dividing the root, or by seeds.

2.—ADENOPHORA VERTICILLATA, *Fisch.* THE WHORL-LEAVED ADENOPHORA.

SYNONYMES.—*Campanula verticillata, Pall. ; C. tetraphylla, Thunb.*

ENGRAVING.—*Sweet's Brit. Flow. Gard., 2d Series, 160.*

SPECIFIC CHARACTER.—Radicl. leaves petiolate, subrotund, ovate,

serrated. Stem-leaves nearly sessile, lanceolate, verticillate ; teeth of the calyx linear, acute. Corolla sub-tubular, only half the length of the style.

DESCRIPTION, &c.—The flowers of this species are of the most beautiful ultramarine blue, and the flowers themselves are bell-shaped, almost tubular. The style projects, but it is not near so long as in the previous genus, and the flowers, though larger, not near so numerous ; the leaves are handsome, and vary in shape as in the previous genus. It is a native of Siberia, and was introduced in 1827.

3.—ADENOPHORA LILIFOLIA, *Dec.* THE LILY-LEAVED ADENOPHORA.

SYNONYMS.—*A. L. var. suaveolens*, *Ram.*; *A. L. hybrida campanula lilifolia*, *Ker.*; *A. communis*, *Fisch.*

ENGRAVINGS.—*Bot. Reg. t. 236*; and our *fig. 4*, Plate 61, under

the name of *A. suaveolens*.

SPECIFIC CHARACTER.—Radicle leaves cordate, ovate. Stem-leaves lanceolate, sharply serrated. Flowers in naked panicles.

DESCRIPTION, &c.—This very handsome species has flowers not half as large as the last, but of a very delicate pale blue. The style is about half as long again as the corolla, and the flowers are extremely sweet-scented. Like all the other species of *Adenophora*, though it is a native of Siberia, it is often killed by the spring frosts; but it has been observed, that this only occurs when the plant is in a close, moist situation, as in its native country it is only found on mountains. There are the same peculiarities in the projecting style, and variously-shaped leaves in this species as in the others. It was introduced from Siberia in 1784.

4.—ADENOPHORA DENTICULATA, *Fisch.* THE TOOTHED ADENOPHORA.

SYNONYME.—*Campanula tricuspidata*.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard., t. 116*; and our *fig. 2*, Plate 61.

cordate, strongly serrated; panicle branched, leafy. Segments of the calyx ovate, acuminate, sharply denticulate; style only just appearing beyond the corolla.

SPECIFIC CHARACTER.—Stem erect; leaves subovate; root-leaves

DESCRIPTION, &c.—The flowers of this species are of a very dark blue, and the style is scarcely seen beyond the tubular part of the flower; the panicle is branched, and furnished with numerous bracts. The specific name alludes to the segments of the calyx, which are sharply-toothed; but they are so small, that they would probably not be seen unless attention were directed to them. This species is also a native of Siberia, whence it was introduced in 1822; but like the others, it is very apt to be killed by the frosts in early spring. It blossoms in May, and appears quite hardy when planted in a dry, open situation; it is rather difficult to propagate, as the roots are succulent, and apt to rot if injured in dividing them; and, like all the other species of the genus, it ripens very few seeds, unless care be taken to fertilise the seed-vessel by touching the tip of the stigma with the pollen.

5.—ADENOPHORA CORONOPIFOLIA, *Fisch.* THE BUCK'S-HORN ADENOPHORA.

SYNONYME.—*Campanula coronopifolia*, *R. & S.*

ENGRAVING.—*Sweet's Brit. Flow. Gard., t. 104*.

SPECIFIC CHARACTER.—Stem-leaves sub-lanceolate, roughly denticu-

late. Panicle sub-racemose. Lobes of the calyx entire. Style included in the flower.

DESCRIPTION, &c.—This is a dwarf plant, seldom more than six inches high, with rather large purplish flowers, very much resembling those of some of the annual species of *Campanula*; numerous stems rise from the same root, each of which bears several flowers. This species is also a native of Siberia, whence it was introduced in 1822. It is quite hardy, and only requires a dry situation. It is less ornamental than any other genus of the species, but looks well on rockwork, for which it seems admirably adapted from its growing best in a situation that is dry.

6.—ADENOPHORA CORONATA, *Fisch.* THE CROWNED ADENOPHORA.

SYNONYMS.—*A. marsupiflora*, *Dec.*; *Campanula coronata*, *Ker.*; *C. liaephylla*, *Pall.*

ENGRAVINGS.—*Bot. Reg. t. 149*; and our *fig. 3*, in Plate 61.

SPECIFIC CHARACTER.—Radicle leaves petiolate, cordate, doubly

serrated; stem-leaves sessile, lanceolate, linear, entire, rigid, brown, hardened, tubulose, equal to and inclosing the dilated base of the stamens.

DESCRIPTION, &c.—This is a very singular species of this genus. It grows from a foot to a foot and a half high, and has a rank, disagreeable smell. The flower is nearly globular, opening at the mouth, and with the



1. *Adenophora intermedia*. 2. *Adenophora denticulata*. 3. *Adenophora coronata*. 4. *Adenophora suaveolens*.
 5. *Platycodon grandiflora*. 6. *Wahlenbergia gracilis*. 7. *Symphuandra pendula*.

lobes curved back like some of the kinds of heath ; it, however, possesses the peculiarities of the genus. The style projects in the same manner, having at first a club-shaped appearance at the point, which afterwards divides into a three-cleft stigma, the lobes of which are recurved. The leaves vary very much in shape in the same manner, and when the flower is opened, a little cup is found inclosed within the dilated filaments of the stamens, surrounding the base of the style. In some of the species this organ is scarcely visible, but in the present is so conspicuous as to give rise to the specific name. This species, like the others, is a native of Siberia, whence it was introduced in 1815. It is hardier than most of the other kinds, and it does not flower till July.

There are some other species of *Adenophora*, all of which have blue flowers, and are natives of Siberia ; but they are rarely seen in British gardens.

GENUS VII.

SYMPHIANDRA, *Alph. Dec.* THE SYMPHIANDRA.

Lin. Syst. MONADELPHIA PENTANDRIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla five-lobed at the apex. Stamens five, filaments free, membranaceous, dilated at the base, and ciliated. Style cylindrical, hairy ; stigma three-cleft, lobes thread-like. Capsule three-celled and three-valved, opening at the base. Seeds ovate, very small, flat, shiny.

DESCRIPTION, &c.—There is a striking difference between this genus and most of the other genera of the order ; as in this genus the anthers of the stamen combine, though the filaments are free at the base. The name of the genus signifies “ with combined anthers.”

I.—SYMPHIANDRA PENDULA, *Alph. Dec.* PENDULOUS SYMPHIANDRA.

SYNONYME.—*Campanula pendula*, *Bieb.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d Series, t. 66 ; and our *fig. 7*, in Plate 61.

SPECIFIC CHARACTER.—Stem branched, pendulose, hairy. Leaves ovate-acute, crenately dentate, velvet-like. Flowers in panicles. Lobes of the calyx lanceolate. Corolla somewhat funnel-shaped, velvety.

DESCRIPTION, &c.—The species of this genus form the connecting link between *Campanulaceæ* and *Lobeliaceæ* ; but I have inserted them here instead of letting them follow *Campanula*, on account of the position of the plates. The flowers of the present species are of a white or cream colour, and they are rather ornamental than otherwise. The plant is an abundant flowerer, and continues in blossom nearly all the summer. The species is a native of Mount Caucasus, and was introduced in 1824. It is propagated either by dividing the root, or by seed.

S. ARMENA, *Dec.*

This is another species of the same genus, with blue flowers ; it was introduced in 1825.

GENUS VIII.

PLATYCODON, *A. Dec.* THE PLATYCODON.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla five-lobed at the apex, large, funnel-shaped. Stamens five, free, filaments broadest at the base. Stigmas five or three. Capsule three—five-celled, dehiscent by three or five valves at the apex ; cells, when five, alternate, with the calycine lobes and stamens. Seeds ovoid, larger than in any other genus of the order ; shining, but not angular.

DESCRIPTION, &c.—Only one species has been introduced, and it is a native of Eastern Asia. The name of *Platycodon* is from two Greek words, signifying “ a broad bell.”

1.—PLATYCODON GRANDIFLORA, *A. Dec.* THE LARGE-FLOWERED PLATYCODON

SYNONYMES.—*Camp. grandiflora*, *Jacq.*; *C. gentianoides*, *Lam.*;
Wahlenbergia grandiflora, *Schred.*

fig. 5, in Pl. 61.

ENGRAVINGS.—Sweet's Brit. Flow. Gard. series 2, t. 208; and our

SPECIFIC CHARACTER.—Smooth. Leaves ovate-lanceolate, acuminate,
 sharply serrated. Capsule five-celled.

DESCRIPTION, &c.—The leaves and stems of this plant are of a dull glaucous green; the stems are very slender, and generally one-flowered, but occasionally they become branched, and bear several flowers. The leaves are rather long and sharply serrated. The flowers are of a very dark, rich blue; and they are large and so widely spreading, as to be rather cup-shaped than bell-shaped. They are very handsome, and in fact the whole plant is one of the most showy of the order. It is a native of Siberia, and of course quite hardy; but, though introduced so long ago as 1782, it is rarely seen in gardens: the reason of this is probably, because it is very difficult to propagate, as, if any of the roots should be broken or wounded in dividing them, they discharge so much of the milky juice in which they abound, as very soon to rot the plant. For the same reason, it is very difficult to strike by cuttings, as they also bleed profusely; and it rarely produces perfect seeds. It flowers in July, when the buds, before they expand, bear so strong a resemblance to little balloons, that the plant has been sometimes called the Balloon Plant. It should be grown in a mixture of peat and loam, in a dry situation.

GENUS IX.

WAHLENBERGIA, *Schrad.* THE WAHLENBERGIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx three or five-cleft. Corolla three or five lobed at the apex, rarely divided to the middle. Stamens three or five, free; filaments rather broadest at the base. Style, inclosed, pilose, but most so towards the upper part. Stigmas two or five.

Ovary combined with the tube of the calyx. Capsule two or five-celled, each opening by a valve at the apex. Seeds very numerous, and exceedingly small.

DESCRIPTION, &c.—This genus was named after Dr. Wahlenberg, the author of the *Flora Lapponica*. It consists of several species which were formerly included in the genus *Campanula*, but which have a more spreading limb than the species still included in that genus. The common British ivy-leaved *Campanula* will give an idea of the general shape of the flowers. The following species are those most generally cultivated in gardens.

1.—WAHLENBERGIA GRACILIS, *A. Dec.* THE SLENDER WAHLENBERGIA.

SYNONYMES.—*Camp. gracilis*, *Forst.*; *C. violiflora*, *Vent.*; *C. capillaris*, *Lodd.*

in Pl. 61.

ENGRAVINGS.—*Bet. Mag.* t. 691; *Bet. Cab.* t. 1406; and our *fig. 6*,

SPECIFIC CHARACTER.—Leaves linear-lanceolate, absolutely serrated.
 Stem branched. Flowers solitary, terminal.

DESCRIPTION, &c.—A graceful little plant, with many very slender stems, each about six inches high, and each producing a little panicle of flowers, which continue expanded all the summer. The species is a native of New South Wales, and was introduced in 1794. It is a biennial, requiring the usual treatment of such plants. It is easily propagated by seeds, which it produces in great abundance. It succeeds best when grown in loam or peat; and it is also occasionally propagated by cuttings.

W. GRAMINIFLORA, *Alph. Dec.*

A native of Sicily, introduced in 1816. It is a dwarf plant, with grass-like leaves, and tufts of blue flowers, the filaments of the stamens of which are white, and the anthers yellow. It flowers from May to July.

W. TENUIFOLIA, *Alph. Dec.*

This is probably only a variety of the preceding species, as it only differs in the flowers being violet, and the stems purplish.

W. HEDERACEA, *Alph. Dec.*

A British plant, with blue flowers, well known under the name of the Ivy-leaved Campanula.

W. CAPILLACEA, *Alph. Dec.*

A dwarf plant, with very slender stems and white flowers, the native country of which is not known, but which was first seen in British gardens about 1822. It is quite hardy, and it flowers from May till August.

W. REPENS, *G. Don.*

A very pretty little creeping plant, with white flowers. It is a native of the Canary Islands, whence it was introduced in 1830. The root leaves grow in close tufts, sending up scapes with single flowers, which are produced in great abundance from May till October. It is quite hardy, and admirably adapted for rock-work. It requires very little care in its culture, as it is not easily killed, except by too much moisture; and it is propagated by dividing the root.

GENUS X.

CAMPANULA, *Fuchs.* THE CAMPANULA, OR BELL-FLOWER.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft, with the sinuses usually covered by appendages. Corolla five-lobed or five-cleft at the apex; bell-shaped. Stamens five, with membranous filaments, which are broad at the base. Style covered with tufts of short stiff hair. Stig-
mas very slender; three or five. Ovary entirely inclosed in the tube of the calyx; three or five-celled. Capsule opening on the side, near the base, by small locolical valves. Seeds usually ovate and flattened, sometimes very small.

DESCRIPTION, &c.—This is a very extensive genus, comprising more than a hundred species, which have been divided into two sections; namely, those which have the openings in the calyx furnished with appendages, and those which have not. The plants in the first section, which is called *medium*, from the specific name of the Canterbury Bell, have their capsules opening always at the base, where the covering is thinnest, by little valves, which appear to have been accidentally torn in the middle of each cell. The plants in the second section, which is called *Eucodon*, from two Greek words signifying a true bell, have their capsules three-celled, and opening by side valves, which are sometimes at the base and sometimes at the apex.

SECTION 1.—MEDIUM.

Sinuses of the calyx covered by reflexed appendages. Capsule three or five-celled, opening by valves at the base.

§. 1.—*Capsule five-celled. Stigmas five. Stems many-flowered. Radicle leaves with long petioles.*

1.—CAMPANULA MEDIA, *Lin.* THE CANTERBURY BELL.

ENGRAVING.—Our *fig. 1*, in Plate 63.

SPECIFIC CHARACTER.—Stem erect; leaves sessile, ovate lanceolate; crenately-toothed; calycine lobes ovate, acuminate, with large

appendages, very much reflexed but one half shorter than the lobes; corolla campanulate, inflated.

DESCRIPTION, &c.—This well-known and very handsome flower is, as is well known, a biennial, requiring to be sown one year and flowering the next. It is quite hardy, and will grow in any common garden soil to the height of from one to four feet. The stem is branched; the whole plant is hairy. The flowers are numerous, large, and disposed in racemes; their colour varies from blue to purple and white, and they are sometimes double

of all these colours. The Canterbury Bell flowers from July to September; it is a native of Germany, and of nearly the whole of the south and east of Europe, with part of Asia. It was sent to this country before 1597, and it has been a common garden flower ever since; as, although biennials are more apt to be lost than most other kinds, it produces such abundance of seeds, which it ripens freely, as to render its preservation easy.

2.—*CAMPANULA LACINIATA*, *And.* THE CUT-LEAVED BELL-FLOWER.

SYNONYME.—*C. Andrewsia*, *Alph. Dec.*

ENGRAVING.—*Bot. Rep.* t. 385

SPECIFIC CHARACTER.—Plant hairy; radicle leaves deeply pinna-

tifid; upper leaves roundish or subcordate; flowers disposed in loose racemea; corolla tubular.

DESCRIPTION, &c.—This is a very elegant species, with pale blue flowers, which are white or yellow at the base, and are disposed in loose elongated leafy racemes. The stem is branched, and the lower leaves are deeply cut. The whole plant is hairy, except the flowers, which are quite smooth. The plant grows from one to two feet high, and it flowers from May to August. It is a native of the Grecian Isles, where it is generally found growing on shady rocks, and it was introduced in 1790. It is quite hardy in British gardens; and, being a perennial, is propagated by dividing the roots.

§. 2.—*Capsules three-celled. Stigmas three. Flowers usually solitary.*

3.—*CAMPANULA SARMATICA*, *Bieb.* THE POLISH BELL-FLOWER.

SYNONYME.—*C. Botanicifolia*, *Marsch.*

ENGRAVINGS.—*Bot. Reg.* t. 237; and our *fig. 5*, in Plate 63.

SPECIFIC CHARACTER.—Stem erect, simple; leaves downy, lower

ones cordate, lanceolate, petiolate; upper ones oblong, sessile; flowers nodding, hairy; ovary woolly.

DESCRIPTION, &c.—A very beautiful species, growing about two feet high; the stem without branches. The flowers are of a pale blue, and form a long loose raceme. The leaves are covered with a whitish wool. The species is a native of Mount Caucasus, where it is found in stony places, and was introduced in 1803. It is a hardy perennial, and is propagated by dividing the roots.

4.—*CAMPANULA PUNCTATA*, *Willd.* THE SPOTTED CAMPANULA.

SYNONYME.—*C. trachelium*, *Thun.*

ENGRAVINGS.—*Bot. Mag.* t. 1723; and our *fig. 6*, in Plate 63.

SPECIFIC CHARACTER.—Hairy; radicle leaves on footstalks, ovate, acutely serrated; flowers nodding, large, spotted on the inside.

DESCRIPTION, &c.—This very singular plant is remarkable for its long tubular flowers, which are produced on separate footstalks, and are of a dingy white, spotted with red on the inside. The species is a native of Siberia, where it grows in the open mountainous country. Its flowers do not expand till autumn, but they frequently continue all the winter, and sometimes remain till February or March. It is a perennial, and may be propagated either by dividing its roots, or by seed. It was introduced in 1813.

5.—*CAMPANULA BARBATA*, *Lin.* THE BEARDED CAMPANULA.

SYNONYME.—*C. Allionii*, *Vill.*; *C. alpestris*, *All.*; *Rapunculus montanis*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.* t. 1258; *Bot. Cab.* t. 788; Sweet's *Brit. Fl. Gard.*, 2d Series, t. 409; and our *fig. 4*, in Plate 63.

SPECIFIC CHARACTER.—Stems nearly simple, terete, pilose. Leaves

villous, nearly entire; radicle leaves crowded, lanceolate; cauline leaves few, ligulate. Racemes loose, few flowered; calyx pilose, with triangular acuminate lobes; appendages of the sinuses of the calyx ovate, one half shorter than the lobes; corollas bearded in the mouth.

DESCRIPTION, &c.—This very beautiful plant varies exceedingly when it is raised from seeds. The usual colour of the flowers is a milk white or pale blue, but sometimes they are of the richest dark blue that can be



1. *Campanula medium*. 3. *Campanula macrophylla*. 4. *Campanula barbata*. 6. *Campanula punctata*.
 5. *Campanula Sarmatica*. 2. *Campanula alpina*.

conceived. The species is a native of the Alps, whence it was introduced in 1775. It is quite hardy in British gardens, if grown in a dry soil and in an open situation, but it is easily killed by damp. It is admirably adapted for rock-work. It takes its name of bearded from the hair inside the corolla.

6.—CAMPANULA MACROPHYLLA, Sims. THE LARGE-LEAVED CAMPANULA.

SYNONYMS.—*C. alliarifolia*, Rœm. et Schultz; *C. lamifolia*, Bieb.

ENGRAVINGS.—Bot. Mag. t. 912; and our fig. 3, in Plate 63.

SPECIFIC CHARACTER.—Leaves cordate or hastate; flowers secund.

DESCRIPTION, &c.—This very handsome species has large white flowers, which are secund, that is, growing all on one side of the stem. The plant is a biennial, with a tap root. It is quite hardy, and flowers in July and August. It is a native of Mount Caucasus, whence it was introduced in 1803. It will grow in any common garden soil where there is plenty of room, but it requires considerable space. The milk of the plant is greenish, and very glutinous.

7.—CAMPANULA ALPINA, Jacq. ALPINE BELL-FLOWER.

SYNONYMS.—*Trachillum pumilum*, Clus.

ENGRAVINGS.—Bot. Mag. t. 957; and our fig. 2, in Plate 63.

SPECIFIC CHARACTER.—Stem nearly simple, furrowed. Leaves linear-lanceolate, repandly-crenate, woolly; radicle ones crowded, narrowed

at the base. Flowers pyramidally racemose; calycine lobes long, acuminate, woolly; appendages of sinuses ovate-acute, woolly, much shorter than the lobes. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this very pretty little plant closely resemble those of the last species, except that they are not bearded, and that the colour is always blue or violet. It is a native of the Alps of Switzerland, whence it was introduced in 1779. It seldom grows above six inches high, and it is admirably adapted for rock-work, as it requires a dry situation fully exposed to the sun and air.

SECTION 2.—EUCODON.

Sinuses of calyx not furnished with appendages; capsule three-celled, dehiscing laterally by valves, sometimes at the base, and sometimes at the apex.

§. 1.—*Capsules erect, dehiscing at the base; flowers sessile, capitate, or spicate.*

8.—CAMPANULA SPECIOSA, Rœm. et Schultz. SHOWY BELL-FLOWER.

SYNONYMS.—*C. glomerata*, β *dahurica*, Ker; *C. Agregata*, Willd.

ENGRAVINGS.—Bot. Mag. t. 2649; Bot. Reg. t. 620; and our fig. 3, Plate 62.

SPECIFIC CHARACTER.—Downy; stems terete. Leaves serrulated;

radicle ones ovate, acute. Flowers glomerate, large, showy; bracts ovate, acuminate; calycine lobes acuminate, twice shorter than the corolla, which is funnel-shaped. (*G. Don.*)

DESCRIPTION, &c.—The stem of this Campanula is square, and about two feet high; two of the sides are deeply grooved, and covered with hairs pointing downwards. The radicle leaves have long footstalks, and are quite cordate; the stem leaves are sessile. The flowers are very handsome, being of a deep purple, and gathered together in clusters at the points of the shoots. The species is a native of Siberia, and it is quite hardy in British gardens; it was introduced in 1818. It requires no particular care in its culture, though it varies exceedingly according to the soil and situation in which it is grown. In a very rich damp soil, the leaves become larger and the flowers paler, but not nearly so handsome as in common garden mould; and in very poor soils the flowers are produced singly instead of being in clusters.

9.—CAMPANULA THYRSOIDEA, *Lin.* THYRSOID BELL-FLOWER.

SYNONYMS.—*Trachilium thyrsoides*, *Chus.*; *Trachilium spicatum*, *Park*; *Echium montanum*, *Del.*; *Echium Alpicum*, *Bauh.*

ENGRAVING.—*Bot. Mag.* t. 1290.

SPECIFIC CHARACTER.—Plant pilose. Stem furrowed. Leaves entire,

pilose; lower ones lanceolate, obtuse; cauline ones linear-lanceolate, acute. Flowers disposed in a dense, pyramidal spike; calyx with a glabrous tube, and linear-lanceolate ciliated lobes; corolla oblong, doubly longer than the calycine lobes; style exerted; capsule spherical.

DESCRIPTION, &c.—A very singular species, with cream-coloured hairy flowers growing together in a clustered mass so as to form a long, thick, and pyramidal spike of flowers. This species is a native of stony places on the Alps; and, contrary to the general habit of Alpine plants, it grows to a greater height, and produces finer flowers, in a shady damp situation, than in places where the soil is dry and the plants are exposed to the sun. It was introduced in the year 1785, and, being a biennial, it is always propagated by seeds. It generally grows about two feet high, and produces a spike of flowers which is often twelve inches long and several inches thick at the base. This plant is a favourite in France, into which country it was introduced in the reign of Henry IV.

§. 2.—*Capsules drooping, dehiscent at the base; lobes of calyx entire; flowers pedicellate.*

10.—CAMPANULA MACRANTHA, *Lin.* THE LARGE-FLOWERED CAMPANULA.

SYNONYME.—*C. latifolia*, γ , *Sims.*

ENGRAVING.—*Bot. Mag.* t. 2553, and our *fig.* 1, in Plate 62.

SPECIFIC CHARACTER.—Stem and leaves rather pilose; leaves dentated. Calyx glabrous; corollas large; fruit nodding.

DESCRIPTION, &c.—The stem of this species grows three or four feet high. It is straight, without branches, and round; the leaves are alternate and pubescent on both sides. The peduncles are one-flowered; erect while carrying the blossom, and drooping with the fruit. The lower peduncles are sometimes lengthened into slender branches bearing flowers. This species is a hardy perennial, a native of Russia; and it blossoms in June and July. It was introduced in 1822. It will grow in any common garden soil, and does not require any peculiar care in its culture.

11.—CAMPANULA RUTHENICA, *Mars.* ORIENTAL CAMPANULA.

SYNONYMS.—*C. Rapunculoides*, *Pall.*; *C. Orientalis*, *Tourne.*

ENGRAVING.—*Bot. Mag.* t. 2653.

SPECIFIC CHARACTER.—Scabrous; stems simple. Leaves serrulated, ovate, acuminate, dark green above, pale beneath; radicle leaves

cordate, petiolate; superior leaves stem-clasping. Flowers numerous, small, disposed in long racemes; calycine lobes acuminate, four times shorter than the corolla, which is funnel-shaped. (*G. Don.*)

DESCRIPTION, &c.—A very elegant plant with small flowers, which are dark on the outside and lighter-coloured within. They are disposed in a loose spike-like raceme, which is of considerable length. The species is a native of the dry hills in the neighbourhood of Mount Caucasus, whence it was introduced in 1803.

12.—CAMPANULA RAPUNCULOIDES, *Lin.* RAMPION-LIKE BELL-FLOWER.

ENGRAVING.—*Bot. Mag.* t. 1369.

SPECIFIC CHARACTER.—Stems rather scabrous. Leaves scabrous, ovate, acuminate; radicle ones petiolate, cordate, crenulated; cauline ones serrulated; flowers disposed in long, spicate racemes, solitary;

calyx rather scabrous, with linear-lanceolate lobes, which are afterwards reflexed; corolla funnel-shaped, four times longer than the calycine lobes. (*G. Don.*)

DESCRIPTION, &c.—This is a British species, and it is remarkable for the beauty of its flowers. It is only found in Yorkshire and in Scotland; but in the latter country, near Kirkcaldy, it is so abundant as to be a troublesome weed in corn-fields.







1. *Campanula macrantha*. 2. *Campanula lactiflora*. 3. *Campanula speciosa*. 4. *Campanula pulla*.
5. *Campanula collina*. 6. *Campanula Ucranica*.

13.—CAMPANULA UCRANICA. THE UKRAINE CAMPANULA.

SYNONYMS.—*C. infundibuliformis*, *Sims.*; *C. Lamifolia*, *Horne*; *C. crenata*, *Lia*; *C. neglecta*, *Bess.*

ENGRAVINGS.—*Bot. Mag.* t. 2632; and our *fig.* 6, in Plate 62.

SPECIFIC CHARACTER.—Leaves ovate, cordate, crenate, acuminate,

petiolate, rough. Stem slightly branched. Flowers in a loose raceme, nearly all turned the same way; peduncles solitary, one-flowered, nodding; corolla funnel-shaped, half five-cleft, segments revolute.

DESCRIPTION, &c.—A very handsome species, which was introduced in 1817 from Vienna. It is said to be a native of the Ukraine. It is quite hardy. This is one of the species with creeping roots, which grow freely as long as they are suffered to remain in one place, but which are very difficult to remove, on account of the danger of wounding the fleshy roots.

14.—CAMPANULA COLLINA, *Bieb.* THE HILL CAMPANULA.

SYNONYME.—The sage-leaved Bell-flower.

ENGRAVINGS.—*Bot. Msg.* t. 927; and our *fig.* 5, in Pl. 62.

SPECIFIC CHARACTER.—Stems simple; lower leaves on long petioles; ovate-oblong, crenulated; middle ones lanceolate; upper

ones linear-acuminate; flowers few, nearly secund, disposed in a long raceme; calycine lobes erect, lanceolate, acuminate, much shorter than the corolla, which is funnel-shaped.

DESCRIPTION, &c.—This species is remarkable for the reflexed segments of the corolla. The flowers are purple; and the tube of the corolla is cup-shaped, and nearly hemispherical, with the segments rolled back, and so hairy on the inside as to deserve the epithet of bearded better than the species to which the specific name of *barbata* is applied. The species is a native of Mount Caucasus; but as it is an Alpine plant, and covered with snow during winter, it does not appear sufficiently hardy to bear severe frosts without protection.

15.—CAMPANULA PULLA, *Lin.* THE DARK-COLOURED CAMPANULA.

SYNONYMS.—*Campanula alpina*, *Bauh.*; the Austrian Bell-flower; the Russet Bell-flower.

ENGRAVINGS.—*Bot. Mag.* t. 2492; *Lodd. Bot. Cab.* t. 554; *Sweet's Brit. Flow. Gard.* 2d ser., t. 80; and our *fig.* 4, in Pl. 62.

SPECIFIC CHARACTER.—Stems dwarf, one-flowered; leaves glabrous, crenately-toothed; lower ones on short petioles, ovate-roundish; upper ones sessile; ovate-acute; segments of the calyx acuminate, erect, shorter than the corolla, which is campanulate.

DESCRIPTION, &c.—This is a rare Alpine plant, a native of Austria, remarkable for its delicacy and beauty. It resembles a little blue bell in the form of its flowers, but their colour is a dark purple, with a white rib at the point of junction between the petals; as, though the flowers of the Campanulas are called monopetalous, they are, in fact, composed of five petals, adhering together, which may be easily separated by a pin. This species flowers in July and August. It is a hardy perennial, and requires no other culture than planting it in common garden soil. From its dwarf stature, however, which rarely exceeds three inches, it is best adapted for rock-work. It was introduced in 1779.

§ 3.—*Capsules erect, dehiscing at the base. Flowers pedicellate.*

16.—CAMPANULA LACTIFLORA, *Mars.* THE MILK-FLOWERED CAMPANULA.

SYNONYMS.—*C. hispida*, *Fisch.*; *C. volubilis*, *Willd.*; Grey-panieled Bell-flower.

ENGRAVINGS.—*Bot. Reg.* t. 241; *Bot. Msg.* t. 1973; and our *fig.* 2, in Pl. 62.

SPECIFIC CHARACTER.—Stem branched; leaves sessile, ovate-lanceolate, acutely serrated; flowers in loose panicles; calycine lobes very broad, serrulated, acute, twice shorter than the corolla; capsule ovoid (*G. Don*).

DESCRIPTION, &c.—This is a very handsome species, a native of Mount Caucasus. The stems frequently grow four feet high, and the flowers are generally produced in a leafy panicle. They are rather large, and open widely, having only a very short tube. The species is hardy, but it requires a rich soil to grow it to perfection;

but when it thrives, it produces an immense quantity of flowers, which continue a long time on the plant. From its height and branching habit, it is best suited to a shrubbery. It was introduced in 1814.

17.—CAMPANULA GARGANICA, *Ten.* THE GARGANIAN BELL-FLOWER.

SYNONYMS.—*C. Elatines*, *Pet.*; *C. saxatilis*, *Till.*; the Harebell of St. Angelo.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d. ser., t. 252; Bot. Reg. t. 1768; and our *fig. 5*, in Pl. 64.

SPECIFIC CHARACTER.—Stem diffuse. Leaves somewhat kidney-shaped, cordate, sharply serrated. Peduncles frequently two-flowered. Segments of the calyx lanceolate, acuminate, dentate. Corolla rotate, or with a very short tube.

DESCRIPTION, &c.—This very pretty little plant is a perennial species, which begins to flower in June, and continues producing a succession of blossoms nearly all the autumn. It was discovered by Professor Tenore on Mount St. Angelo, (the ancient name of which is Garganus,) in the kingdom of Naples. The plant, notwithstanding its southern origin, appears to be hardy in British gardens, with the exception of being easily injured by too much wet. It is admirably adapted for rock-work, or for a balcony, or window, and it thrives best in a mixture of peat and loam. When it is grown in a pot for a balcony or window, the pot containing it should be placed on another pot turned upside down so as to admit of the flowers hanging down on every side. The pendent stems of this plant make it very suitable for rock-work. It was introduced in 1832.

18.—CAMPANULA PORTENSCHLAGIANA, *Rœm. et Schult.* THE DALMATIAN OR WALL CAMPANULA.

SYNONYMS.—*C. muralis*, *Port.*

ENGRAVINGS.—Bot. Reg. t. 1995, and our *fig. 4*, in Pl. 64.

SPECIFIC CHARACTER.—Stem sub-erect. Leaves petiolate; rotun-

dately cordate; acutely dentated. Flowers racemose; the lobes of the calyx subulate. Corolla somewhat funnel-shaped.

DESCRIPTION, &c.—This species is a native of walls and rocks in Dalmatia, whence it was introduced about 1836. It is hardy in British gardens in all situations where it is not likely to be injured by damp. Like the preceding species, it is well adapted for rock-work, but it is of more erect growth. It is very well suited for balconies or windows. In a wild state, the stems become tough and woody near the root.

19.—CAMPANULA FRAGILIS, *Cyrill.* THE BRITTLE CAMPANULA.

SYNONYMS.—*C. diffusa*, *Vahl*; *C. cochlearifolia*, *Dec.*; *C. crassifolia*, *Nees.*; *C. Cavolini*, *Ten.*; *C. fragilis*, β , *hirsuta*, *Lindl.*

ENGRAVINGS.—Bot. Reg. t. 1738, and our *fig. 6*, in Pl. 64.

SPECIFIC CHARACTER.—Stem ascending, diffusely branching. Radical

leaves on long petioles; cordately rotund; obtusely crenate. Stem leaves very small, ovate-lanceolate. Flowers in panicles. Lobes of the calyx linear-lanceolate. Sepals nearly as long as the petals. Style exserted. Capsule ovoid.

DESCRIPTION, &c.—This is one of the most beautiful of all the Campanulas. The flower is large, and nearly flat, having only a little hollow in the middle. The colour is a most beautiful blue, and it grows in dense tufts in its native country, hanging down from the face of limestone rocks and flowering all the summer. It is a native of the south of Italy, particularly in the neighbourhood of Naples, the Isle of Capri, and elsewhere in Calabria. In many places it grows as much as 3,000 feet above the level of the sea. It was introduced in 1834. It requires a slight protection during winter, as it is apt to damp off if it should have too much wet.

20.—CAMPANULA PYRAMIDALIS, *Cam.* THE PYRAMIDAL CAMPANULA.

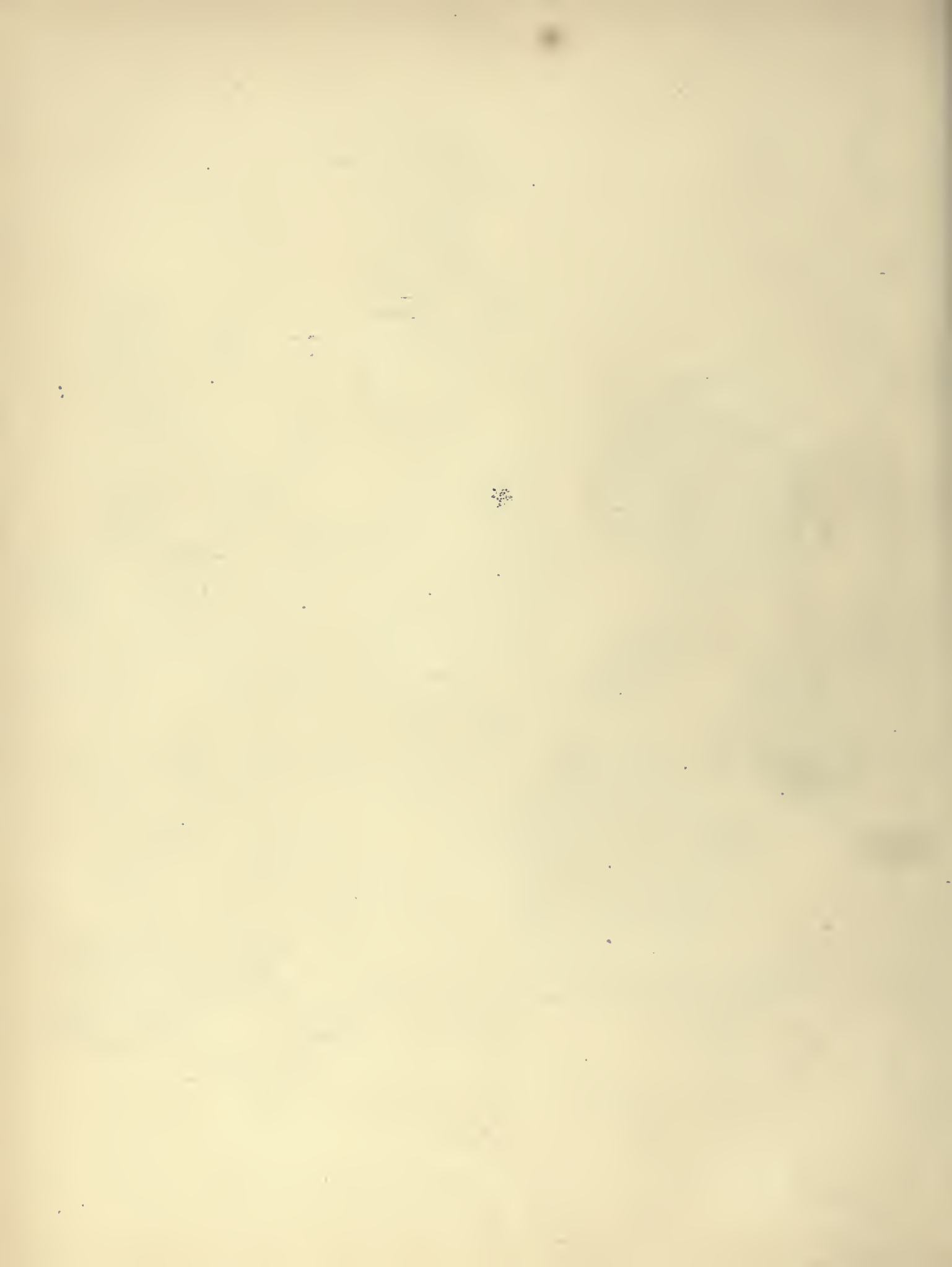
SPECIFIC CHARACTER.—Glabrous. Leaves glandularly toothed; lower ones petiolate, ovate-oblong, somewhat cordate; cauline leaves sessile, ovate-lanceolate. Flowers numerous, pyramidally racemose.

Segments of the calyx acuminate, spreading. Capsule spheroid, deeply furrowed. (*G. Don.*)

DESCRIPTION, &c.—This is one of the largest and handsomest of the Campanulas. It grows four or five feet high, with numerous flowers, which branch out so as to form a pyramidal raceme. The root is large and turnip-



1. *Campanula peregrina* - 2. *Campanula persicifolia* var. *maxima* - 3. *Campanula Carpatica* - 4. *Campanula Portenschlagiana*
5. *Campanula gurganica* - 6. *Campanula fragilis*



shaped, or divided into numerous fleshy tubers like that of the Dahlia. The species has blue flowers; but there is a variety, the flowers of which are white. A native of Carniola and Dalmatia. Introduced in 1596. It is a very handsome plant either for pots or the open garden.

21.—*CAMPANULA VERSICOLOR*, *Sib. et Smith.* THE PARTY-COLOURED BELL-FLOWER.

SYNONYMS.—*C. planiflora*, *Willd.*; *C. Willdenowiana*, *R. et S.*; *C. multiflora*, *Dec.*

ENGRAVING.—*Bot. Rep.* t. 396.

SPECIFIC CHARACTER.—Glabrous. Stem ascending. Leaves serrated. Radical leaves petiolate, ovate, acute, rather cordate. Cauline leaves

on short petioles, ovate, lanceolate, acuminate. Flowers disposed in long spicate racemes. Segments of the calyx acuminate, spreading or reflexed, shorter than the corolla. Style exerted. Capsule spheroid. (*G. Don.*)

DESCRIPTION, &c.—This species has very much the habit of *C. pyramidalis*, but the flowers are nearly rotate; they are of a deep violet colour at the bottom, nearly white in the middle, and deepening into violet again at the tips of the segments. It is a native of Greece, whence it was introduced in 1788.

22.—*CAMPANULA TENORII*, *Mor.* PROFESSOR TENORE'S CAMPANULA.

SYNONYMS.—*C. corymbosa*, *Ten.*; *C. Rosani*, *Moricand.*; *C. Thomasii*, *Hort.*; *C. versicolor*, *Guss.*

SPECIFIC CHARACTER.—Stem ascending. Leaves coriaceous; radical

ones ovate-oblong, acutely serrated on long petioles; cauline leaves ovate, acute, coarsely serrated. Flowers racemose. Segments of the calyx linear, spreading; shorter than the corolla.

DESCRIPTION, &c.—This plant bears a very strong resemblance at first sight to *C. fragilis*. The corolla has a white centre and blue segments. It is a native of the kingdom of Naples, and was introduced about 1830. It grows from six inches to a foot high.

§ 4.—*Capsule erect, dehiscing laterally towards the apex. Flowers pedicellate.*

23.—*CAMPANULA PEREGRINA*, *Lin.* THE WANDERING BELL-FLOWER.

SYNONYMS.—*C. lanuginosa*, *Lam.*; *C. hirsutissima*, *Guss.*; Rough-leaved Bell-flower; Foreign Bell-flower.

ENGRAVINGS.—*Bot. Mag.*, t. 1257, and our *fig. 1*, in *Pl. 64*.

SPECIFIC CHARACTER.—Plant hispid. Stem simple, many-flowered,

angular; leaves crenate; lower ones obovate; upper ones ovate, acute. Flowers disposed in a spicate raceme; lobes of the calyx acuminate, nearly entire, rather shorter than the corolla, which is spreading. Capsule ovoid. (*G. Don.*)

DESCRIPTION, &c.—This is a very handsome species, the flowers of which are almost flat. It grows on a tall stem, with a very long raceme of flowers, which keep opening for many weeks in succession like those of *C. pyramidalis*, but it differs from that plant in being hairy and having only a simple stem of flowers instead of a branched one. It is a hardy biennial, which requires the usual treatment of plants of that kind. It received its odd name of *peregrina*, which signifies "wandering," from its being first supposed to be a native of the Cape of Good Hope, and afterwards of Syria, from its seeds having been accidentally mixed with the seeds of plants from those countries. Its real native country is, however, unknown; and the first traces we have of it are its coming up in the Botanic Garden at Upsall, among a number of young plants produced by foreign seeds, about the year 1794.

24.—*CAMPANULA PLANIFLORA*, *Lam.* THE FLAT-FLOWERED CAMPANULA.

SYNONYMS.—*C. nitida*, *Ait.*; *C. Americana*, *Mill.*

SPECIFIC CHARACTER.—Quite glabrous. Stem simple. Leaves sessile, coriaceous, shining; radical ones crowded, obovate, crenulate;

stem-leaves linear-lanceolate, acute. Segments of the calyx ovate, erect, much shorter than the corolla, which is nearly rotate.

DESCRIPTION, &c.—There are two varieties of this species, one with blue flowers, and the other with white. The flowers in both cases are nearly flat. The leaves are glossy. A native of America, introduced in 1731.

25.—CAMPANULA CARPATICA, *Lin.* THE CARPATHIAN BELL-FLOWER.

SPECIFIC CHARACTER.—Leaves glabrous, cordate, serrated, petiolate; peduncles elongated; calyx reflexed, glutinous.

ENGRAVINGS.—*Bot. Mag.* t. 117; and our *fig. 3*, in Pl. 64.

DESCRIPTION, &c.—This species bears considerable resemblance to the annual Campanulas. It is a native of the Carpathian Mountains in Hungary, and it was sent to England by Baron Jacquin in 1774. It is a weak, low-growing plant, with large, showy flowers, and quite hardy. It is propagated by dividing its roots in autumn.

26.—CAMPANULA PERSICIFOLIA, *Lin.* THE PEACH-LEAVED CAMPANULA.

SYNONYMS.—*C. decurrens*, *Bull.*; *C. speciosa*, *Gil.*; *C. amygdalifolia*, *Salisb.*

ENGRAVINGS.—*Bot. Mag.* t. 397; and our *fig. 2*, in Pl. 64.

VARIETIES.—There are eight varieties of this species, but the most interesting is that called *maxima*, which is figured in Plate 64. The

double-flowered varieties, both of the blue and white, are more common than those with single flowers.

SPECIFIC CHARACTER.—Radical leaves obovate; stem-leaves lanceolate-linear, slightly serrated, sessile, remote.

DESCRIPTION, &c.—This species is common in every part of Europe, from the North of Sweden and Siberia to the South of Italy and Constantinople. It is generally found in hilly, shady places, as for example, in Scotland, in the woods near Cullen.

The variety *maxima* was obtained from South Carolina in 1791, but it is not known whether it is a native of that country, or whether it was raised accidentally from the seed of an imported plant of the species. The single state of the species is very rare, except where it is found wild, as only the double and large-flowered varieties are cultivated in gardens. The plant is extremely easy of cultivation; and indeed where it is left for several years undisturbed, it increases so rapidly by its creeping roots as to become almost a weed. In a rich soil which is somewhat moist, the large-flowered variety will acquire a height of three or four feet. It flowers in August and September, and produces such an abundance of blossoms as to have a magnificent appearance.

OTHER SPECIES OF CAMPANULA.

These are extremely numerous, but they are all natives of Europe, with very few exceptions. The following are a few of the most remarkable.

C. LYRATA, *Dec.*

This species has blue flowers and lyre-shaped leaves. It is a native of Greece, and has been long common in British gardens, but the exact year of its introduction is unknown.

C. MOLLIS, *Dec.*; *Bot. Mag.*, t. 404.

This very pretty little plant is extremely valuable for rock-work, from the great length of time that it continues producing a succession of flowers. As soon as the flowers expand, the plant throws out a little side-shoot from the same stem, with a little flower-bud upon it, which is ready to expand as soon as the first flower falls off. This plant has been found wild in three different countries, namely Syria, Sicily, and Spain, and it was sent from the latter country to England in 1788. It is easily propagated, as it is one of the few Campanulas which ripen abundance of seed. It requires a slight protection during winter, and is easily killed by too much moisture.

C. SIBIRICA, *Lin.*

This very handsome plant is common both in Siberia and in the mountainous parts of Austria. It has crisp leaves and dark purple flowers, which have very long tubes, with a short limb; they are disposed in panicles.

There are two varieties, one with white flowers, and another the flowers of which are of a pale blue. The plant is generally considered to be a biennial, but it will often live three or four years before it flowers, though it always perishes after ripening its seeds. It was introduced in 1783. It flowers from the beginning of June till the latter end of August, and is always propagated by seeds, which it ripens in abundance.

C. AGGREGATA, Lodd. Bot. Cab., t. 505.

This is not a very handsome species; as though it has a small cluster of dark blue flowers at the extremity of the shoot, the side flowers are quite thin and scattered, and very different from those of *C. speciosa*, figured in Pl. 62, with which it is sometimes confounded.

C. CERVICARIA, Lodd. Bot. Cab. t. 452.

A species with undulated leaves and blue flowers. A native of Germany; introduced in 1768.

C. EXCISA, Lodd. Bot. Cab., t. 561.

This species takes its name from its cut flowers, the petals of which are cleft more than half-way down, and the divisions rolled together in such a curious way as to give them a remarkable scooped-out appearance. The stems of this plant are remarkably slender, only growing about four inches high, and the leaves are awl-shaped. It is a native of the Alps in Switzerland, whence it was introduced in 1816. It is quite hardy, and should be grown in light loamy soil. It is propagated by dividing the roots in spring.

C. SCHEUCHZERI, Lodd. Bot. Cab. t. 485.

This very beautiful little species closely resembles the little hare-bell of the English fields, (*Campanula rotundifolia*,) but the flowers are larger, and the flower-stalks, instead of being naked, are furnished with numerous linear leaves. It is a native of the Alps in Switzerland, and it was introduced in 1813.

There are numerous other species, but they are not common in British gardens.

GENUS XI.

TRACHELIUM, *Lin.* THE THROATWORT.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx superior, five-cleft. Corolla funnel-shaped, tube long, limb five-lobed. Filaments not dilated at the base. Style one, stigma globose. Capsule three-celled, opening at the base by small lateral pores.

DESCRIPTION, &c.—There is only one species of this genus common in British gardens. The word *Trachelium* is derived from *trachea*, in allusion to the supposed efficacy of the plant in all diseases of the throat. The English name throatwort has also the same origin.

1.—TRACHELIUM CÆRULEUM, *Lin.* THE BLUE THROATWORT.

SYNONYMS.—*T. azureum*, *Gowan.*; *Trachelio azuro*, *Pon.*; *Valeriana cœrulea*, *Barr.*; *Rapunculus valerianoides*, *Morr.*; *Cervicaria valerianoides*, *Bauh.*

ENGRAVING.—*Bot. Reg.* t. 72.

SPECIFIC CHARACTER.—Stem branched, erect. Leaves ovate, serrated, flat. Flowers in terminal corymbs furnished with numerous bracteoles.

DESCRIPTION, &c.—This species is a biennial plant growing two or three feet high, and producing numerous corymbs of small purplish flowers. The colour of the flowers, however, varies very much in the varieties of this species being sometimes decidedly blue and of various shades, from a very dark to a very light tint; at other times purple, and at others quite white. It is a native of the banks of the Mediterranean, and some other parts of Italy and Spain, but it has never been found growing wild farther north than Rome. It was introduced in 1640.

CHAPTER XXVIII.
LOBELIACEÆ.

CHARACTER OF THE ORDER.—Calyx superior, five-toothed, or five-parted, seldom entire, with the tube adnate to the ovarium at the base. Corolla monopetalous, irregular, inserted in the calyx, five-lobed, or deeply five-cleft. Stamens five, inserted into the calyx alternately with the lobes of the corollas; anthers cohering; pollen oval. Ovarium inferior, with from one to three cells, but usually of

two cells. Ovula very numerous, attached to the axis or pareties of the fruit. Style simple; stigma usually two-lobed, surrounded by a cup-like fringe. Fruit capsular or baccate, one-two-celled, rarely three-celled, many-seeded, dehiscent at the apex. Seeds attached to the axis or pareties of the fruit. Embryo straight, in the axis of fleshy albumen, with the radicle pointing to the hilum. (*G. Don.*)

DESCRIPTION, &c.—The order Lobeliaceæ was formerly included in Campanulaceæ, but it is distinguished from that order by the adhering of the anthers together, and the irregular shapes of the flowers. It also differs in the acidity of its milk, which in all the species is dangerous, and in some a deadly poison. The stigma is surrounded by hairs like that of the Campanulaceæ. The flowers of all the plants belonging to this order are ornamental; and they are of various colours, blue, white, scarlet, purple and yellow. The leaves are alternate without stipules, and the order contains both herbaceous plants and shrubs. There are numerous genera, but only two or three of them contain hardy perennial plants.

GENUS I.

LOBELIA, *Pohl.* THE LOBELIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Tube of the calyx adhering to the ovary. Limb free, five-cleft. Corolla irregular, tubular. Tube cleft on the upper side, thickened or ventricose at the base. Limb five-parted, bilabiate; the upper lip in two narrow segments; the lower lip in

three roundish segments. Filaments of the stamens combined in the upper part; anthers cohering, and generally bearded. Capsule oval; two-celled; two-valved; many-seeded; opening at the apex.

DESCRIPTION, &c.—This genus was named in honour of Mathew Lobel, the author of several works on botany, who was born at Lisle, in 1538, and was afterwards physician and botanist to James I. The genus is easily known by its irregular bilabiate flowers. All the species are ornamental, and most of them are natives of America.

1.—LOBELIA KALMII, *Lin.* KALM'S LOBELIA.

ENGRAVING.—*Bet. Mag.* t. 2238; and our *fig. 4*, in *Pl. 67*.

SPECIFIC CHARACTER.—Stem erect, extremely slender, simple; radical leaves spatulate; stem-leaves linear, very slightly denticu-

lated; flowers in a loose raceme, alternate, and very distant from each other on the rachis.

DESCRIPTION, &c.—This plant springs from a tuft of small spatulate leaves, and its extremely slender stalk frequently rises a foot and a half high. It bears but few flowers, which have a straggling appearance, being very distant from each other on the flower-stalk; but the flowers are pretty in themselves when closely examined. The plant is a native of North America, being found in Canada, Carolina, and New York. It was introduced in 1820. It is sometimes called an annual in the catalogues, but it is a true perennial, and when once planted, will continue sending up fresh flower-stems from the root, every spring, for a great number of years.



1. *Lobelia fulgens*. — 2. *Lobelia speciosa*. — 3. *Lobelia colorata*. — 4. *Lobelia puberula*.

2.—LOBELIA PYRAMIDALIS, *Wall.* THE PYRAMIDAL LOBELIA.

SYNONYMES.—*L. stimularis*, *Ham.*; the branchy *Lobelia*.

ENGRAVING.—*Bot. Mag.* t. 2387.

SPECIFIC CHARACTER.—Smooth. Leaves lanceolate, serrulated,

acuminated; upper ones linear, attenuated. Racemes leafy, paniculated. Segments of the calyx subulate, equal in length to the corolla. Stem erect, branchy.

DESCRIPTION, &c.—This is a tall-growing plant, with erect, smooth stems, three or four feet high. The stems and leaves are rather ornamental, as the stems are lilac, and the leaves are long and slender, and delicately serrated; but the flowers are not very handsome, and they are nearly hidden by their long bracts, and the long slender segments of the limb of the calyx. It is a native of Upper Nepal, and it was introduced in 1809. It requires a slight protection during winter.

3.—LOBELIA FULGENS, *Pursh.* THE REFULGENT LOBELIA.

ENGRAVINGS.—*Bot. Reg.* t. 165; *Bot. Rep.* t. 659; and our *fig. 1*, in Pl. 65.

SPECIFIC CHARACTER.—Simple, erect, somewhat pubescent. Leaves

elongately lanceolate, attenuated, nearly entire. Raceme many-flowered; style and stamens longer than the corolla.

DESCRIPTION, &c.—This very splendid species is a native of Mexico, and was introduced from that country by Messrs. Humboldt and Bonpland. This species very nearly resembles *Lobelia splendens*, but it differs in being covered all over with a fine close down, and in the flowers being somewhat lighter, and of a more glowing scarlet. The species was introduced in 1809. The great art of cultivating this plant is allowing it plenty of water.

4.—LOBELIA SPLENDENS, *Willd.* THE SPLENDID LOBELIA.

SPECIFIC CHARACTER.—Leaves narrowly lanceolate, denticulate, flat at the margin; stem very smooth; raceme terminal.

ENGRAVING.—*Bot. Reg.* t. 60.

DESCRIPTION, &c.—This species is nearly allied to the last, but it is perfectly smooth in all its parts instead of being covered with a short close pubescence. It is also a taller growing plant, and much more hardy, as it will continue in blossom till November without its flowers being apparently injured by frost. It should be grown in rich loam, and allowed plenty of water while the flower-buds are forming. Both this species and *fulgens* look exceedingly well on the margin of a piece of water, as in a situation of this kind, where their roots can get access to plenty of moisture, the plants become exceedingly strong and vigorous, and produce an abundance of splendidly dark-coloured flowers. The species is a native of Mexico, and it was brought to Europe with *L. fulgens*, though it was not introduced into England till 1814.

5.—LOBELIA SPECIOSA, *D. Don.* THE SHOWY LOBELIA.

SYNONYMES.—*L. siphilatica*, var. *hybrida*, *Hook.*; *Low's purple Lobelia*, *Lindl.*

ENGRAVINGS.—*Bot. Mag.* t. 3604; *Bot. Reg.* t. 1445; *Sweet's Brit. Flow. Gard.* 2d ser. t. 174.; and our *fig. 2*, in Pl. 65.

SPECIFIC CHARACTER.—The whole plant covered with velvet pubescence; leaves sessile, lanceolate, acutely denticulated; raceme loosely spicate; peduncles bibracteate; segments of the calyx recurved at the edges, and slightly waved.

DESCRIPTION, &c.—This very beautiful plant is evidently a hybrid, though it is not known with certainty by whom it was raised, or between what species. In the *Botanical Magazine* it is said to be the offspring of *L. siphilatica*, a blue-flowering species, and *L. cardinalis*, the flowers of which are of a bright scarlet. In the *Botanical Register* the same origin is given to it, and it is said to have been raised in Scotland, from which country it was procured by Mr. Low, of the Clapton Nursery, and hence the name given to it in the *Botanical Register*, of *Low's purple*. In *Sweet's British Flower Garden* another origin is given to it, and it is said to

be the offspring of *Lobelia fulgens* and *L. cœrulea*, and to have been raised in a garden in Ireland. Whatever its origin may have been, it is a very handsome and desirable plant, and that if its parents were a blue and a scarlet *Lobelia*, that it has mixed their colours completely, as it is of a rich dark purple. Among the synonymes given to this plant in the *Botanical Magazine* is *L. Milleri*; but this plant, which is well known to be a hybrid between *L. syphilatica* and *L. cardinalis*, is a very different plant from *L. speciosa*, as it has completely the habit of *L. syphilatica*, though its flowers are purple, whereas the flowers of *L. speciosa* resemble those of *L. fulgens*, both in habit of growth and shape.

6.—LOBELIA CARDINALIS, *Lin.* THE SCARLET LOBELIA.

SYNONYMES.—*Rapuntium galeatum*, *Morr.*; *Trachelium Americ-
caum*, *Park.*; the cardinal's flower.

ENGRAVING.—*Bot. Mag.* t. 320.

VARIETY.—*L. c. B. Milleri*, *Sweet's Brit. Flow. Gard.* 2d ser. t. 372.

SPECIFIC CHARACTER.—Stem erect; leaves broadly lanceolate, serrated; raceme terminal, partly secund.

DESCRIPTION, &c.—This very beautiful species of *Lobelia* is a native of Canada, as well as of the warmer parts of North America, and when it was discovered in that country it was sent to the beautiful Henrietta Maria, Queen of Charles I., who being a French princess, and passionately attached to her own country, no doubt liked it the better, from Canada being at that period a settlement of France. It is said that when the Queen saw it she laughed excessively, and said that its colour reminded her of the scarlet stockings of a cardinal, whence the learned botanist Parkinson called it the cardinal's flower in his *Paradise*, a work which he afterwards published and dedicated to her Majesty. This plant, having been introduced in 1629, is the oldest *Lobelia* in our gardens, and it is also the hardiest, for it will grow in almost any soil and situation that is not too dry. It does best, however, in a stiff moist soil, and when it is taken up and replanted every three or four years. It flowers from the latter end of July till October. It is generally increased by dividing the roots, though it will grow freely from cuttings; or it may be raised from seeds, of which it ripens abundance in favourable autumns.

7.—LOBELIA SYPHILATICA, *Lin.* THE BLUE AMERICAN LOBELIA.

ENGRAVINGS.—*Bot. Reg.* t. 537; and our *fig.* 4 in Pl. 66.

SPECIFIC CHARACTER.—Stem erect; leaves ovate, oblong, acutely

but unequally serrated; flowers axillary, solitary; segments of the calyx reflexed at the edge; peduncles hairy.

DESCRIPTION, &c.—This was the second species of *Lobelia* brought to England, having been introduced in 1665; and as it was easily recognised it belonged to the same genus as *L. cardinalis*, it received on its first introduction the somewhat anomalous name of the blue cardinal. It is, however, very different from *L. cardinalis*, both in the habit of its growth and the shape of its flowers; but it is found in nearly the same localities, always growing on the bank of a river or near a spring. It is said to be in great repute among the Indians for its medicinal virtues, and it acts as a violent emetic, but it is considered dangerous. It is a coarse weedy-growing plant, abounding in milky juice, and it has a disagreeable smell. The root, which is the part used medicinally, tastes like tobacco. It will grow freely in any strong moist soil.

8.—LOBELIA COLORATA, *D. Don.* THE COLOURED OR RED-LEAVED LOBELIA.

ENGRAVING.—*Sweet's Brit. Flow. Gard.* 2d. ser. t. 180.; and our *fig.* 3, in Pl. 65.

SPECIFIC CHARACTER.—The whole plant is smooth. Leaves lanceo-

late, acuminate, erosely dentate. Raceme spicate, leafy. Peduncles naked. Segments of the calyx linear-subulate, recurved at the margin.

DESCRIPTION, &c.—The stems of this species are upright and simple, and though not thicker than an ordinary goose-quill, they grow from four to five feet high. The leaves are very peculiar; they are of a deep



1. *Lobelia Tupa*. 2. *Lobelia Bridgesii*. 3. *Lobelia polyphylla*. 4. *Lobelia isyphilitica*.

green, but stained with a dull red towards the margin; they are attenuated towards the base with curiously crisped stipules. The raceme is spicate and leafy, and very long; the flowers of a bright lilac, rather small, but very numerous. Altogether, this is a very singular-looking plant, from its stems being tall, straight, and unbranched; occasionally, indeed, rising to the height of six feet, and terminating in a long, close spike of blue flowers. It was imported from North America about 1830, but it is supposed by Professor Don to be a natural hybrid, on account of the imperfection of its anthers. It grows best in a light loamy soil, and it is propagated by dividing the roots, or by cuttings, as it rarely ripens seeds.

9.—LOBELIA FENESTRALIS, *Cav.* THE WINDOW-LIKE LOBELIA.

SYNONYME.—*Rapuntium fenestrale*, *Presl.*; the loop-holed Lobelia. | acuminate, dentate, glabrous, half stem-clasping. Terminal spike
ENGRAVINGS.—*Bot. Reg.* for 1838, t. 47. | many-flowered, leafy. Style and stamens projecting from a cleft in the
SPECIFIC CHARACTER.—Stems simple, furrowed. Leaves lanceolate, | tube of the corolla.

DESCRIPTION, &c.—This species is a native of Mexico, growing at the height of 6,600 feet above the level of the sea: it was introduced in 1837. It is a biennial, requiring to be raised on a hot-bed, and to have slight protection during winter. It is, however, not worthy of cultivation, as it is a weedy-looking plant, with small flowers of no beauty.

10.—LOBELIA PUBERULA, *Mich.* THE DOWNY LOBELIA.

ENGRAVINGS.—*Bot. Mag.* t. 3292; and our *fig. 4*, in Plate 65. | the calyx erect, subulate-lanceolate, entire. Stamens enclosed in the
SPECIFIC CHARACTER.—Obsolutely pubescent. Stem erect, angular. | flower.
Leaves oblong, obtusely denticulate. Spike elongated. Segments of |

DESCRIPTION, &c.—The flowers of this species bear a considerable resemblance to those of *L. syphilitica*, but their colour is more purple, and the spike is less dense and more elongated. The stem grows two or three feet high, and the spike is frequently a foot long. The species is a native of North America, whence it was introduced in 1819.

11.—LOBELIA CAMPANULOIDES, *Willd.* THE CAMPANULA-LIKE LOBELIA.

SYNONYMS.—*Lobelia erinoides*, *Thunb.*; the Japanese Lobelia. | SPECIFIC CHARACTER.—Leaves sub-petiolate, lanceolate, oblong,
ENGRAVINGS.—*Bot. Reg.* t. 733; and our *fig. 6*, in Plate 67. | dentate; stem decumbent; petioles elongated.

DESCRIPTION, &c.—This plant is one of those species with numerous slender decumbent stems, which, if planted in a pot, fill it so completely as to hang over on every side. These species are also well adapted for beds in a geometrical flower-garden, as they cover the ground completely without pegging down. This species is quite hardy. It is a native of Japan, whence it was introduced in 1819. This species is quite different from *L. erinoides*, with which it is sometimes confounded, as that has a smaller flower, and is an annual.

12.—LOBELIA ERINUS, *Thunb.* THE ASCENDING LOBELIA.

ENGRAVINGS.—*Bot. Mag.* t. 901; and our *fig. 5*, in Plate 67. | obovate, sharply dentate, glabrous, petiolate; flowers terminal, rac-
SPECIFIC CHARACTER.—Stems thread-like, tortuose, erect; leaves | mose; capsules two-celled.

DESCRIPTION, &c.—This plant, though it has an exceedingly slender stem, has always a tendency to grow upwards; and, when planted in a flower-pot, it never hangs over, like the preceding species, but grows with a long slender straggling stem, which has a very untidy appearance, and hence the species is comparatively little

grown, notwithstanding the beauty of its flowers, which greatly resemble those of the now well-known Californian annual, *Clintonia*. This species of *Lobelia* is a native of the Cape of Good Hope, and consequently requires protection during winter; though, like all the half-hardy *Lobelias*, it flowers freely in the open ground during summer. It was introduced in 1752.

13.—*LOBELIA CORONOPIFOLIA*, *Lin.* THE BUCK'S-HORN-LEAVED *LOBELIA*.

SYNONYME.—*Rapuntium Æthiopicum*, *Herm.*

ENGRAVINGS.—*Bot. Mag.* t. 644; and our *fig. 3*, in Plate 67.

SPECIFIC CHARACTER.—Leaves oblong, dentately pinnatifid; stem erect and hairy; peduncles elongated.

DESCRIPTION, &c.—This species is remarkable for a tuft of radical leaves at the base of its stem, which are so deeply dentate as to look like small stag's horns, and hence the specific name. The flowers are large, and very handsome; only two are produced on each stem, and sometimes there is only one. This species is a native of the Cape of Good Hope, whence it was introduced in 1787. It requires protection during winter.

14.—*LOBELIA CŒRULEA*, *Sims.* THE AZURE-BLUE *LOBELIA*.

ENGRAVINGS.—*Bot. Mag.* t. 2701; and our *fig. 2*, in Plate 67.

SPECIFIC CHARACTER.—Stems short, decumbent at the base, and densely leaved; leaves lanceolate, dentately pinnatifid, attenuated at

the base; flowers in a long terminal raceme; corolla deeply cut; limb longer than the tube.

DESCRIPTION, &c.—The leaves of this species closely resemble those of *L. coronopifolia*, but the flowers are very different; as, in the former species, the tube is longer than the limb, which is entire, or nearly so, while in this the limb is longer than the tube, and is deeply cut. The present species is a native of the Cape of Good Hope, whence it was introduced in 1823. It requires protection during winter.

15.—*LOBELIA HETEROPHYLLA*, *Lab.* THE VARIOUS-LEAVED *LOBELIA*.

ENGRAVINGS.—*Bot. Reg.* t. 2014; and our *fig. 1*, in Plate 67.

SPECIFIC CHARACTER.—Very smooth; stem angular, simple; racemes secund; leaves fleshy, lower ones dentately pinnatifid; upper

ones linear, quite entire; lower lip of the corolla deeply cut, middle segment obovate.

DESCRIPTION, &c.—This very beautiful plant is a native of Van Diemen's Land, whence it was sent to England in 1836. It has the peculiarity of growing and flowering equally well in the open air, in a greenhouse, and in a stove; and it also has the singular property of continuing to flower for a long time after it has been cut. A specimen in Mr. Veitch's Nursery, at Exeter, which was hung up in the stove without any soil, continued flowering for above a month; and a cut specimen that I had in a glass at Bayswater, continued opening fresh flowers for nearly three weeks. The flowers are very large, and of a deep rich blue.

16.—*LOBELIA LUTEA*, *Lin.* THE YELLOW *LOBELIA*.

SYNONYME.—*Parastranthus simplex*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 1319; and our *fig. 7*, in Pl. 67.

SPECIFIC CHARACTER.—Stem procumbent at the base, leafy. Leaves

lanceolate, serrated, glabrous. Flowers sessile and almost apiculate. Corella reversed. Segments much longer than the tube.

DESCRIPTION, &c.—This pretty little *Lobelia* is so different from the generality of the species, that it has been made into a separate genus with only the two following kinds. The corolla has scarcely any tube, and is reversed; that is, the three segments which form the lower lip in most of the species, in this form the upper lip,



1. *Lobelia heterophylla*. 2. *Lobelia caerulea*. 3. *Lobelia coronopifolia*. 4. *Lobelia Kalmii*. 5. *Lobelia Erinus*.
 6. *Lobelia Campanuloides*. 7. *Lobelia tatei*. 8. *Lobelia unidentata*.

and stand erect ; the two lower segments forming an arch over the anthers, which are crowned with a fine fringe. The upper part of the style has also a hairy fringe ; but when the stigma protrudes beyond the anthers, it is quite smooth, and appears as if inserted obliquely by a joint into the hairy style. It is a native of the Cape of Good Hope, whence it was introduced in 1774. It requires only a slight protection during winter, and produces so many offsets from the root, as soon to fill any bed that it may be planted in.

17.—LOBELIA VARIIFOLIA, *Sims.* THE VARIOUS-LEAVED LOBELIA.

SYNONYME.—*Parastranthus variifolia*, *Dec.*

ENGRAVING.—*Bot. Mag.* t. 1692.

SPECIFIC CHARACTER.—Stem erect. Leaves linear ; lower ones

completely entire ; upper ones pinnatifidly dentate. Flowers terminal, often solitary, inverted.

DESCRIPTION, &c.—This species bears a great resemblance to the last, but it differs in its very singular leaves ; in the stigma being three-cleft instead of two-cleft ; and in the two lower segments of the corolla not being united over the stamens. The species is a native of the Cape of Good Hope, whence it was introduced about 1810.

18.—LOBELIA UNIDENTATA, *Lin.* THE SINGLE-TOOTHED LOBELIA.

SYNONYMS.—*L. bidentata*, *Donn* ; *Parastranthus unidentata*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 1484 ; and our *fig. 8*, in Plate 67.

SPECIFIC CHARACTER.—Stem slightly decumbent at the base. Leaves linear, entire, or with one tooth. Flowers inverted.

DESCRIPTION, &c.—This is the last of the three species of *Lobelia* which have their flowers inverted ; that is, which have their upper lip in three segments, and their lower lip in two ; while all the common species of *Lobelia* have the upper lip in two segments, and the lower one in three. On this account, Professor De Candolle has placed these three species of *Lobelia* in a new genus, which he has called *Parastranthus*, and which means literally, with inverted flowers. The present species is extremely pretty. In its normal habit, the flowers are of a dark violet, and it looks exactly like one of the common violets of our gardens ; but occasionally, when raised from seed, this *Lobelia* varies in colour to a pale blue, or almost to white, and in either state it makes a remarkably pretty flower for filling one of the beds of a symmetrical flower-garden. It is a native of the Cape of Good Hope, whence it was introduced in 1794. It continues producing a succession of blossoms all the summer, and it is propagated by seeds, which it produces in great abundance, or by cuttings, which are generally placed a good many together in one pot, and kept in a greenhouse or cold pit during the winter.

OTHER SPECIES OF LOBELIA.

These are very numerous ; but nearly all the other perennial species are greenhouse plants, which will not bear the winter in the open ground ; indeed, all the pretty little *Lobelias*, which are natives of the Cape of Good Hope, will not endure either the wet or cold of an English winter without protection, unless they are planted in a very dry soil ; and, when this is the case, they should be supplied with water abundantly when they are near flowering.

GENUS II.

TUPA, *D. Don.* THE TUPA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx turbinate, five-toothed. Tube of the corolla longitudinally cleft on the upper side; limb five-parted, secund. Stamens monadelphous. Anthers cohering, the latter two fringed at the apex. Stigma two-lobed, bearded behind. Capsule half enclosed in the calyx, two-celled, many-seeded, opening at the apex. Seeds elliptic, concave, smooth.

DESCRIPTION, &c.—The species forming this genus were all formerly included in the genus *Lobelia*, but they are easily distinguished by their flowers having only one lip, and the tube of the corolla being cleft down to the base on the upper side. The difference will be easily perceived by comparing *Lobelia syphilitica*, in Pl. 66, with the other species figured in the same plate, which, though called on that plate by their old name of *Lobelia*, all belong to the modern genus, *Tupa*. All the species of this genus are natives of South America, and *Tupa* is their aboriginal name in that country.

1.—TUPA FEUILLEI, *Dec.* THE COMMON TUPA.

SYNONYMES.—*Lobelia Tupa*, *Lin.*; *Rapuntium spicatum*, *Feuil.*; the *Tupa* poison plant; the Mullein-leaved *Lobelia*.
ENGRAVINGS.—*Bot. Mag.* t. 2550; *Bot. Reg.* t. 1612; Sweet's *Brit. Flow. Gard.* 284; and our *fig. 1*, in Pl. 66.

SPECIFIC CHARACTER.—Stem erect, five-angled. Leaves oblong, acutely denticulate, under-surface covered with a tomentose pubescence, penninerved; reticulately-veined, sessile, decurrent. Terminal raceme elongated; bracts nearly equal to the pedicels. Flowers pubescent.

DESCRIPTION, &c.—This may be called a stately plant, from its tall, erect stem, and candelabra-like flowers. The stem is frequently above eight feet high, generally hollow, and five-angled. The terminal raceme of flowers is frequently two feet long. This plant was first discovered by Father Feuillei, who visited the west coast of South America between the years 1707 and 1712; and who, according to the quotation from his work, given in the *Botanical Register*, speaks of this plant in the following terms:—"All this plant is a most ready poison; its root yieldeth a deadly milk, as also doth its stem; the odour of its flowers produceth cruel sickness. When one handleth them, care must be had not to bruise them between the fingers; for if one thereafter rubbeth his eyes, some of the milk having touched them, a man will surely lose his sight." Though this account is exaggerated, like many of the descriptions of plants by the early writers on these subjects, there is no doubt that the milk of this kind of *Tupa* is more poisonous than that of any of the other species of the genus. The common *Tupa* is a native of Chili, whence it was introduced in 1824. It is tolerably hardy in British gardens, and will generally live through the winter without any protection, if it be kept dry. *Tupa* is the original name of this plant in Chili, and hence the other species are generally called by the same name throughout South America.

2.—TUPA SALICIFOLIA, *Dec.* THE WILLOW-LEAVED TUPA.

SYNONYMES.—*Lobelia Tupa*, *Ait.*; *Lobelia gigantea*, *Sims*; the willow-leaved *Lobelia*; the gigantic *Lobelia*.

ENGRAVING.—*Bot. Mag.* t. 1325.

SPECIFIC CHARACTER.—Stems suffruticose. Leaves lanceolate, sessile, serrulated. Flowers axillary, solitary, shorter than the leaves.

DESCRIPTION, &c.—This is a gigantic species, growing fourteen or sixteen feet high, and much branched. The flowers are first yellow, and then become orange, turning red as they fade. This species, which was introduced in 1794 from Chili, was long supposed to be the *Lobelia Tupa* of Linnæus, and the poison plant of Father Feuillei; but Linnæus expressly mentions that his *Lobelia Tupa* had a five-angled, hollow stem, whereas the stem of this species is cylindrical and solid. The flowers also are orange instead of red. The species, though a

native of Chili, appears to be quite hardy in British gardens; but it is scarcely worth cultivating in them, on account of the great space it takes up, and the small size of the flowers in proportion to the leaves.

3.—TUPA CAVANILLESIANA, *Dec.* CAVANILLES'S TUPA.

SYNONYME.—*Lobelia mucronata*, *Cav.*

ENGRAVINGS.—*Bot. Mag.* t. 3207.

SPECIFIC CHARACTER.—Leaves scattered, sessile, oblong-lanceolate,

serrulated, pubescent on both sides, terminating in a sharp point or mucro. Raceme short, slightly leafy, lax.

DESCRIPTION, &c.—This is the smallest of all the species included in the modern genus *Tupa*, as its stem seldom grows above two, or at most three feet high. It is very handsome, as its flowers are as large, in proportion to the leaves by which they are surrounded, as those of the preceding species were small. The flowers of this *Tupa* are produced in a short, loose, terminal raceme of twelve or fourteen flowers, which have a peculiarly gay and brilliant appearance, from their bright crimson colour, and the smallness of the leaves by which they are surrounded. This species was introduced in 1831, from Chili, and it requires the same treatment as the Common *Tupa*.

4.—TUPA POLYPHYLLA, *Hook et Arn.* THE MANY-LEAVED TUPA.

ENGRAVINGS.—*Bot. Mag.* t. 3550; *Sweet's Brit. Flow. Gard.*, 2d ser. t. 242; and our *fig.* 3, in Pl. 66.

SPECIFIC CHARACTER.—Stem suffruticose at the base. Leaves broad, oblong-lanceolate, on very short petioles, coriaceous, sharply-serrated,

very smooth. Raceme leafy; pedicels pubescent, much shorter than the leaves. Calyx hemispherical, pubescent, much shorter than the leaves, dentate, with subulate entire teeth. Corolla pubescent, longer than the pedicel.

DESCRIPTION, &c.—This plant generally grows four or five feet high; but it sometimes attains the height of six feet, and at others does not exceed three feet. The stems are erect, cylindrical, and solid; without branches, but furnished with numerous leaves, and abounding in a nauseous, extremely acrid milk. The leaves are quite smooth and shining on both sides, but of a paler colour, and strongly veined beneath. The racemes are terminal, very leafy, and about a foot long; and the flowers are of a dark purple. This species is one of the hardest of the *Tupa* division, as it is found on the hills near Valparaiso, while the other species are generally natives of the valleys. It was introduced in 1832. It grows best in a light, rich soil.

5.—TUPA BRIDGESII, *G. Don.* MR. BRIDGE'S TUPA.

SYNONYME.—*Lobelia Bridgesii*, *Hook et Arn.*

ENGRAVINGS.—*Bot. Mag.* t. 3671; and our *fig.* 2, in Pl. 66.

SPECIFIC CHARACTER.—Stem simple, suffruticose at the base, glabrous; leaves lanceolate, sub-membranaceous, tapering to a long narrow point, finely serrated, decurrent at the base; raceme elongated,

bracteate, the bracts longer than the pedicels; segments of the calyx broadly subulate, ciliate-serrated; corolla very smooth; tube cleft at the back partially into five segments, so that the corolla is almost five-petaled; segments linear-acuminate; stamens exerted; anthers furnished with two bearded appendages.

DESCRIPTION, &c.—This very handsome species grows three or four feet high. The stem is suffruticose at the base, and very smooth, though it is angled and winged by the bases of the leaves which grow to it. The leaves are five or six inches long, but they are narrow, tapering to a long point, and very finely and sharply serrated quite down to the base. The flowers are rose-coloured, and cleft into five segments, which adhere at the base, and again at the point. The stamens project beyond the flower; the filaments are combined into a tube; and the anthers are lead-coloured—two of them are bearded at the apex. This very handsome species is a native of the south of Chili, where it was found by Mr. Bridges, and introduced by him in 1837. It requires the same treatment as the preceding species, but it is more tender.

6.—TUPA BLANDA, *D. Don.* THE PINK-FLOWERED TUPA.

ENGRAVING.—Sweet's Brit. Flow. Gard. 2d Series, t. 308.

SPECIFIC CHARACTER.—Very smooth; leaves lanceolate, cuspidate,

doubly serrated, decurrent at the base; bracteous, bracts somewhat convolute; teeth of the calyx subulate; anthers glabrous.

DESCRIPTION, &c.—This very handsome species bears considerable resemblance to *Tupa Bridgesii*, but the flowers are of a darker rose colour, and the segments of the lower limb of the corolla are divided at the apex when the flower is fully expanded. This species is also distinguished by the bracts, the edges of which are rolled inwards. It requires the same treatment as *Tupa polyphylla*, and is as hardy as that species. It is a native of Chili, whence it was introduced in 1830.

7.—TUPA DECURRENS, *Dec.* THE WINGED-STALKED TUPA.SYNONYME.—*Lobelia decurrens, Cav.*

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d Series, t. 86.

SPECIFIC CHARACTER.—Leaves ovate-lanceolate, decurrent, crowded,

doubly serrated, glabrous; flowers axillary, on very short peduncles; calyx hairy; segments lanceolate, deeply cut; segments of the corolla hairy towards the apex.

DESCRIPTION, &c.—This is a very singular but weedy-looking plant, from the manner in which the leaves grow to the stem. The flowers are purple, and the stem grows about five feet high. It is a native of Chili, whence it was introduced in 1829. It is quite hardy in the open garden. The juice of this plant is remarkably acrid.

TUPA PURPUREA, *Lindl.*

This is a half-shrubby plant, requiring protection during winter. It is a native of Valparaiso, whence it was introduced in February, 1825; and though it is called the purple Tupa, it has bright crimson flowers.

TUPA ARGUTA, *Lindl.*,

Has dingy yellow flowers, and is still more shrubby than the preceding species. It is a native of Chili, whence it was introduced in 1824.

TUPA PERSISCIFOLIA, *Dec.*,

Has rose-coloured flowers. It is a native of South America, and was introduced in 1825.

There are three other species, natives of the West Indies, but they all require a stove in British gardens.

CHAPTER XXIX.

ERICACEÆ.

CHARACTER OF THE ORDER.—Calyx four or five-cleft, inferior. Corolla hypogynous, four or five-cleft, imbricated. Stamens definite, hypogynous. Anthers two-celled, dehiscing by a pore. Ovary

many-celled, many-seeded. Style one. Fruit capsular. Seeds indefinite, minute. Embryo in the axis of albumen. (*Lindl.*)

DESCRIPTION, &c.—The Heath tribe is so generally known as consisting principally of showy-flowering shrubs, that it seems quite out of place in a work devoted exclusively to perennials. This order does, however, contain one genus, consisting entirely of herbaceous plants, called *Pyrola*, or the winter green; and the curious parasites included in the genus *Monotropa*, or the yellow bird's nest, may also be called perennials.







1. *Pyrola umbellata* - 2. *Vinca herbacea* - 3. *Gonolobus hirsutus* - 4. *Amsonia latifolia* - 5. *Apocynum androsaemifolium*

GENUS I.

PYROLA, *Lin.* THE WINTER-GREEN.*Lin. Syst.* DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Petals five. Capsule five-celled, opening at the angle.

DESCRIPTION, &c.—The common winter-green is a British plant. There are indeed several species that are natives of Britain; but the only two kinds that are sufficiently ornamental to be worth cultivating in a flower-garden, are two of the American species. The word *Pyrola*, is said to be a diminutive of *Pyrus* a Pear-tree, from a slight resemblance in the leaves of the winter-green to those of some kinds of pears.

1.—PYROLA UMBELLATA, *Lin.* THE UMBELLATED WINTER-GREEN.

SYNONYMES.— <i>Chimaphila corymbosa</i> , <i>Pursh.</i> ; <i>C. umbellata</i> , <i>Dec.</i> ENGRAVINGS.— <i>Bot. Mag.</i> t. 778; and our <i>fig.</i> 1, in Plate 68.	SPECIFIC CHARACTER.—Flowers in umbels. Stigma sessile, entire.
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DESCRIPTION, &c.—This very pretty little plant, though common in many parts of Europe, Asia, and America, particularly in the latter country, has never yet been found wild in Great Britain. It begins to flower in June, and continues in blossom till the end of autumn. It should be grown in a situation sheltered from the sun, and it requires to be frequently watered. It was introduced from North America in 1762.

2.—PYROLA MACULATA, *Lin.* THE SPOTTED-LEAVED WINTER-GREEN.

SYNONYMES.— <i>P. marylandica</i> , <i>Pet.</i> ; <i>P. mariana</i> , <i>Pulk.</i> ; <i>Chimaphila maculata</i> , <i>Dec.</i> ENGRAVING.— <i>Bot. Mag.</i> t. 897.	SPECIFIC CHARACTER.—Leaves lanceolate, rigidly serrated, discoloured on the face. Scape two or three-flowered. Stigma nearly sessile, hemispherical.
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DESCRIPTION, &c.—This species is distinguished from the last by the leaves, which are broader, more rigid, and sharply pointed; they are marked on the face with a pale line covering the mid-rib, and branching over the principal veins. The stem is twisted, and the leaves, though opposite, are thus generally turned to one side and crowded towards the upper part. The petals are reflexed, and the base of the filaments is deeply fringed. The species forms a dwarf plant from 6 inches to a foot high; and it has a very striking and lively appearance from its white flowers, bright-red stems, and singularly marked leaves. It is a native of North America, and was introduced in 1752.

CHAPTER XXX.

APOCYNEÆ.

CHARACTER OF THE ORDER.—Calyx five-cleft, permanent. Corolla monopetalous, hypogynous, regular, five-lobed, imbricate in æstivation, deciduous. Stamens five, epipetalous, alternating with the segments of the limb of the corolla; anthers two-celled, dehiscing lengthwise; pollen granular. There is sometimes only one ovary; but occasionally	there are two, and therefore the styles are one or two, but there is always only one stigma: the ovaries, for the most part, are many-seeded. Fruit follicular, drupaceous or baccate, or many-seeded, solitary or twin. Seeds usually albuminous. Embryo foliaceous, with an inconspicuous plumule.
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DESCRIPTION, &c.—The plants belonging to this order are readily known by the twisted direction of the corolla of their flowers, which has been compared to the rays of St. Catharine's wheel. The juices of these plants, like those of *Lobeliaceæ*, are milky, and extremely poisonous. The flowers are generally handsome. Most of the species are trees and shrubs, and by far the greater part are natives of hot climates; but three of the genera contain a few hardy perennials.

GENUS I.

APOCYNUM, *Lin.* THE DOG'S-BANE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla campanulate, with five small acute teeth in the tube, opposite the segments of the limb. Stamens enclosed. Styles wanting. Hypogynous scales five. Follicles slender.

DESCRIPTION, &c.—This genus was well known to the ancients and it was called Apocynum by Dioscorides, which signifies literally “dog’s bane,” because it was supposed to be peculiarly injurious to dogs. There are numerous species, several of which are hardy perennials. They have nearly all the peculiarity of throwing up a great many suckers from the root.

1.—APOCYNUM ANDROSÆMIFOLIUM, *Lin.* THE TUTSAN-LEAVED DOG'S-BANE.

SYNONYMES.—Apocynum canadense, *Bocc.*; Fly-catching Apocynum.

ENGRAVINGS.—Bot. Mag. t. 280; and our *fig.* 5, in Pl. 68.

SPECIFIC CHARACTER.—Stem erect. Leaves ovate and glabrous. Cymes terminal and lateral. Tube of the corolla much longer than the calyx.

DESCRIPTION, &c.—This is a hardy perennial plant, growing about two feet high, and flowering from July to September. It will not thrive in a wet soil; but in light dry soils, and in a warm situation, it increases so fast as to become quite a weed, throwing up an amazing number of suckers, by which it is propagated, as it rarely ripens seeds in this country. The flowers of this plant have a sweet, honey-like fragrance, which perfumes the air to a considerable distance, and which probably operates in attracting insects; as, when the flowers of this plant are fully blown, flies are generally found attached to them, some dead, and others alive and struggling to disentangle themselves. Sometimes four, or even five, may be found in one flower. The manner in which these flies are caught is very curious. The five stamens have large anthers, which form a kind of cone in the centre of the flower. Each of these anthers is arrow-shaped; and though towards the top of the cone their sides touch, lower down they separate a little, so as to leave a narrow opening or slit between every two. In the centre of the anthers stands the stigma, which is in the shape of a little urn, the middle of which is encircled by a glandular ring, which secretes a glutinous honey-like substance. This sweet substance attracts the flies, which insinuate their trunks between the openings at the lower part of the anthers; and then, the trunk being raised upwards to obtain the honey, is drawn into the narrow part of the slit, and becomes so closely wedged in, that the insect can very seldom extricate itself. The species is a native of different parts of North America and Canada, whence it was introduced in 1688.

2.—APOCYNUM CANNABINUM, *Lin.* THE HEMP DOG'S-BANE.

SPECIFIC CHARACTER.—Leaves lanceolate, acute at both ends, glabrous; cymes panicled; calyx equal in length to the tube of the corolla. (*G. Don.*)

DESCRIPTION, &c.—This species grows two or three feet high, and has small yellowish-green flowers. It is a native of Canada and various parts of North America, where it is frequently called Indian Hemp, because the Indians use the fibres of the stems, as we do those of the hemp, in making ropes, fishing-uts, bags, and various other articles. It was introduced in 1699.

OTHER SPECIES OF APOCYNUM.

A. HYPERICIFOLIUM, *R. Br.*

This species has small white or reddish flowers, and smooth leaves, which are somewhat cordate at the base. It is a native of North America, where it is found from New York to Virginia, generally on the gravelly banks of rivers. It was introduced in 1758.

A. SIBIRICUM, *R. Br.*

A native of Astrachan, where it grows in salt marshes. The flower-stalks and calyces of the flowers are clothed with a powdery down.

A. VENETUM, *Lin.*

This species is a native of the south of Europe. It has red flowers, but there is a variety of it, the flowers of which are white. It was introduced in 1690.

GENUS II.

VINCA, *Lin.* THE PERIWINKLE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft; segments linear or subulate, acute. Corolla salver-shaped; tube longer than the calyx; throat bearded; segments of the limb flat, oblique, truncate at the apex. Stamens five, inserted in the throat, enclosed; filaments short; anthers ending each in a hairy membrane at apex, and conniving over the stigma; stigma bearded, seated on a flat, orbicular disc, which is grooved round the circumference. Glands two, alternating with the ovary; glabrous as well as it. Follicles two, erect, terete, narrow, dehiscent lengthwise, few-seeded. Albumen fleshy. Seeds cylindrical, naked. (*G. Don.*)

DESCRIPTION, &c.—All the kinds of Periwinkle are creeping plants, and only one of them is a perennial. The flowers are blue, purple, or white, and they are all natives of Europe. The word *Vinca* is derived from *vinco*, to conquer, because the species subdue other plants by their creeping roots.

1.—VINCA HERBACEA, *Waldst. et Kit.* THE HERBACEOUS PERIWINKLE.

ENGRAVINGS.—*Bot. Mag.* t. 2002; and our *fig. 2*, in Plate 68.

SPECIFIC CHARACTER.—Stems procumbent, rooting. Leaves oblong-

lanceolate, minutely ciliated when young. Calycine segments subulate glabrous; segments of the corolla lanceolate, or somewhat falcate.

DESCRIPTION, &c.—This very pretty plant is a native of Hungary, where it is found in open situations on chalky or sandy hills. In gardens it is an exceedingly useful plant, as it is not quite so strong-growing, or so destructive to other plants, as the shrubby kinds of Periwinkle, and yet is equally useful in covering the ground under trees. There are two or three varieties, generally only differing in the colour of the flowers, some being quite of a purplish-red, and others almost blue.

GENUS III.

AMSONIA, *Clayton.* THE AMSONIA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Plants twisted. Corolla funnel-shaped; the throats of the tube being closed with pubescence. Follicles two: erect. Seeds naked.

DESCRIPTION, &c.—All the species belonging to this genus are perennials, and natives of North America. They have erect stems, slightly twisted in their growth, which die down to the ground every winter, and which

send up suckers from underground buds. They are natives of marshy places, and will not succeed in very dry soil. The species were included by Linnæus in *Tabernæmontana*; but they have been separated, because their seeds are not immersed in pulp, as in that genus. The name was given in honour of an American traveller, named Amson.

1.—AMSONIA LATIFOLIA, *Clayton*. THE BROAD-LEAVED AMSONIA.

SYNONYMS.—*Amsonia Tabernæmontana*, *Wall.*; *Tabernæmontana Amsonia*, *Lin.*; *Apocynum virginianum*, *Pluk.*

ENGRAVINGS.—*Bot. Reg.* t. 151; and our *fig. 4*, in Plate 68.

SPECIFIC CHARACTER.—Stem very smooth; leaves oval-lanceolate; upper ones drawn out to a long point, and slightly pubescent on the veins beneath.

DESCRIPTION, &c.—This is a very pretty little plant, with loose panicles of blue flowers, having a fragrance like those of the violet. The stem dies down to the ground every year. It is a native of North America, where it was found by Pursh, growing in the wet shady woods of Carolina. It was introduced in 1759. It is tolerably hardy in British gardens, in which it should be grown in a moderately rich soil, and never suffered to become too dry.

2.—AMSONIA SALICIFOLIA, *Pursh*. THE WILLOW-LEAVED AMSONIA.

ENGRAVING.—*Bot. Mag.* t. 1873.

SPECIFIC CHARACTER.—Stem smooth; leaves linear-lanceolate, acutely pointed, and very smooth.

DESCRIPTION, &c.—This species is rather more tender than the preceding one. It is not so pretty, from the pale colour of the flowers, and the long narrow leaves. It requires a slight protection during severe frosts, and, like the preceding species, it should be grown in a tolerably good soil, and kept moist. Both species seldom produce seeds here, and are propagated by off-sets. It was introduced in 1812.

OTHER SPECIES OF AMSONIA.

A. ANGUSTIFOLIA, *Pursh*.

This one differs from the two preceding species, in having hairy stems. It was introduced in 1774.

CHAPTER XXXI.

ASCLEPIADACEÆ.

CHARACTER OF THE ORDER.—Calyx five-cleft, persistent. Corolla monopetalous, hypogynous, five-lobed, regular, deciduous. Stamens five, inserted in the bottom of the corolla, alternating with the segments of the limb. Filaments usually connected. Anthers two-celled, but sometimes almost four-celled, from a partial dissepiment in each of the true cells. Pollen coalescing in masses, which become

fixed to the five processes of the stigma. Ovaries two. Styles two, with a common stigma, which is dilated and pentagonal. Follicles two, one of which is often abortive. Seeds numerous, imbricate, pendulous, usually furnished with a tuft of hair at the upper extremity. Albumen in two parts. Embryo straight, with leafy cotyledons, a superior radicle, and a very small plumule.

DESCRIPTION, &c.—The plants belonging to this order are easily distinguished from most other plants, by their pollen being produced in waxy masses, instead of being in the shape of fine dust, as is generally the case. The only other order of plants which resembles the Asclepiadaceæ in its pollen is the Orchidaceæ. In the silky hairs attached to the seeds, these plants resemble some of the kinds of Apocynæ. Most of the plants belonging to this order require a stove in England.





1. *Asclepias tuberosa*. — 2. *Asclepias incarnata*. — 3. *Asclepias decumbens*.

GENUS I.

ASCLEPIAS, *Lin.* THE SWALLOW-WORT.*Lin. Syst.* PENTANDRIA DIGYNIA.

GENERIC CHARACTER.—Corolla five-parted, reflexed. Leaflets of | having a little horn-shaped segment running from the bottom of each, corona cucullate, seated on the top of the tube of the filaments, | and lying in the hollow. Follicles slender, smooth.

DESCRIPTION, &c.—In the plants included in this genus, the pollen is in ten separate masses, two of which are affixed to each of the angles of the stigma. The cup formed by the united filaments has five leaflets opposite the anthers, with a second series of small leaflets below the first. The flower is thus very curiously formed, and the parts are so complicated as to puzzle a young botanist, who can hardly tell which is the stigma and which are the anthers. The name *Asclepias* refers to the heathen God of Physic, and it was applied to plants belonging to this genus, from their supposed medicinal virtues. The English name of Swallow-wort is supposed to apply to the appearance of the seed-vessel when just bursting open, so as to show its feathery seeds, when it has been fancied to bear a resemblance to a swallow on the wing.

1.—ASCLEPIAS TUBEROSA, *Lin.* THE TUBEROUS-ROOTED SWALLOW-WORT.

SYNONYMS.—*A. hirsute*, *Gron.*; *Apocynum carolinianum*, *Pet.*; | the orange-flowered *Asclepias*.

ENGRAVINGS.—*Bot. Reg.* t. 76; and our *fig.* 1, in Plate 69.

SPECIFIC CHARACTER.—Stem erect, divided at the summit into spreading branches, very hairy; leaves distant, oblong-lanceolate; umbels sub-corymbose, terminal.

DESCRIPTION, &c.—This plant is a native of many parts of North America, in some of which it is called Butterfly-weed, from its being generally covered with butterflies. In other places it is called the Pleurisy plant, from its medicinal virtues, which are said to be very considerable. The plant has also several other names in America, the oddest of which is *Ache-in-the-side* plant, from its supposed efficacy in cases of pleurisy.

2.—ASCLEPIAS INCARNATA, *Lin.* THE ROSE-COLOURED SWALLOW-WORT, OR WATER SILK-WEED.

SYNONYMS.—*A. pulchra*, *Willd.*; *Apocynum minus*, *Barrel.* |

ENGRAVINGS.—*Bot. Reg.* t. 250; and our *fig.* 2, in Plate 69.

SPECIFIC CHARACTER.—Stem erect, branching at the upper part, |

covered with soft wool. Leaves lanceolate and covered with a soft woolly tomentum. Umbels numerous, terminating every branch; appendages of the stamens exerted.

DESCRIPTION, &c.—This is a very handsome species, which varies a good deal in the degree of pubescence found upon the stem and leaves, and a little in the colours of the flowers; which, however, are always of a purplish-pink, or a deep rose-colour. The plant is a native of North America, whence it was introduced in 1710; but though it is quite hardy, it is not so common in British gardens as it deserves to be. In its native country, it grows in swamps and on the banks of rivers; and probably the principal reason that it does not succeed so well in England is, that it is generally kept too dry. When properly treated, it produces abundance of flowers in July and August. The flowers have the fragrance of the *Heliotrope*. It is generally propagated by the young plants it throws up, as it seldom ripens seed in this country.

3.—ASCLEPIAS PULCHRA, *Ehr.* THE PRETTY SWALLOW-WORT.

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, 2d ser. t. 18. |

SPECIFIC CHARACTER.—Leaves with very short petioles, subcordate, |

oblong, acute, and very hairy. Stem erect, hairy, divided in the upper part. Umbels terminal; flowers erect.

DESCRIPTION, &c.—This plant is supposed by some botanists to be only a variety of *A. incarnata*; but they appear to be tolerably distinct. The present species has dark purple flowers; which are produced in much

smaller umbels than those of *A. incarnata*. The present species also is a much larger plant, attaining the height of 3 or 4 feet or more; and the stem and leaves are covered with long hairs, and the lower leaves are cordate. This species also ripens its seeds freely in England, which the preceding one does not. *A. pulchra* is a native of North America, and it appears to have been in our gardens as long, or nearly so, as *A. incarnata*, though the exact year of its introduction is unknown.

4.—ASCLEPIAS VARIEGATA, *Lin.* THE VARIEGATED SWALLOW-WORT.

SYNONYMES.—*A. hybrida*, *Michx.*; *A. virginiana*, *Bauh.*; *Apocynum Americanum*, *Pulk.*

ENGRAVING.—*Bot. Mag.* t. 1182.

SPECIFIC CHARACTER.—Leaves ovate, rugged, naked. Stem simple. Umbels subsessile. Pedicels of the flowers tomentose.

DESCRIPTION, &c.—This species was the first introduced of the genus, having been brought to England in the year 1597. This plant possesses the quality, common, more or less, to all the species of the genus, and to some of the kinds of *Apocynum*, of catching flies; and it was from the quantity of honey-like juice secreted by the leaflets appended to the stamens, that Linnæus called those parts nectaries. It is a native of Carolina, and flowers in July. The stem dies down to the root in winter, and hence it is sometimes supposed to be lost, and the root is thrown out in digging the ground, though it would have sent up fresh shoots in spring, if it had been suffered to remain undisturbed. As this species rarely ripens seeds in England, it is generally propagated by dividing the root.

5.—ASCLEPIAS DECUMBENS, *Pers.* THE DECUMBENT SWALLOW-WORT.

ENGRAVINGS.—Sweet's *Brit. Flow. Gard.* 2d ser. t. 24; and our *fig. 3*, in *Plate 69*.

SPECIFIC CHARACTER.—Stem decumbent, but somewhat ascending towards the points, and divided into short, but spreading branches;

very hairy. Leaves oblong, obtuse, mucronate; smooth above and hairy below; reticulately veined; upper ones opposite. Umbels many-flowered, lateral, and terminal.

DESCRIPTION, &c.—The roots of this plant are tuberous, and hence it has been supposed by some botanists to be a variety of *A. tuberosa*. They are, however, very distinct both in the stems and leaves. The stems grow several from the same root, and though at first trailing, they turn up at the points of the shoots, so as to form a very handsome tuft of flowers. The leaves are short, feather-nerved, and terminate in a short hard point or mucro. The flowers are small, but they are produced in great abundance, and from their brilliant colour, they are very showy. This species is readily distinguished, even when not in flower, from all the others, by its habit of growth and its oblong blunt leaves, which have the peculiarity of being glossy on the upper surface, and densely hairy below. It is a native of North America, and was introduced in 1731. It should be grown in peat.

6.—ASCLEPIAS NIVEA, *Lin.* THE SNOW-WHITE SWALLOW-WORT.

ENGRAVING.—*Bot. Mag.* t. 1181.

SPECIFIC CHARACTER.—Leaves opposite, ovate-lanceolate, tomentose below. Stem simple, swollen at the joints. Umbel extremely lax,

few-flowered. Pedicels of the florets very slender, and as long as the peduncle of the umbel.

DESCRIPTION, &c.—This species is remarkable for its very lax umbel; the flowers comprising which droop from the weakness of their foot-stalks. Though the flowers are said to be white, it is only the appendages of the stamens that are truly so, the petals being tinged with a greenish brown. It is a native of Virginia and the Carolinas, whence it was introduced in 1730. It is said to require a slight protection during severe frosts, and it is propagated by dividing the roots. This species is sometimes called the Almond-leaved Swallow-wort.

7.—ASCLEPIAS AMÆNA, *Michx.* THE HANDSOME SWALLOW-WORT.

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d. ser., t. 82.

SPECIFIC CHARACTER.—Stem simple, swollen at the joints. Leaves on short petioles, oblong-oval, ending in an acute point; pubescent	beneath. Umbel close, many-flowered, terminal; appendages three times as long as the stamens; erect.
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DESCRIPTION, &c.—This is one of the strongest species of the genus, and when grown in peat and kept moist it will attain the height of 5 or 6 feet, spreading widely, with strong thick stems and large leaves. It is a native of North America, from New England to Virginia, and it was introduced in 1732. It appears quite hardy in British gardens.

OTHER SPECIES OF ASCLEPIAS.

These are very numerous, but all the hardy ornamental kinds have been described above.

GENUS II.

GONOLOBUS, *R. Br.* THE GONOLOBUS.*Lin. Syst.* PENTANDRIA DIGYNIA.

GENERIC CHARACTER.—Masses of pollen ten; smooth; transverse. Corolla subrotate. Seeds hairy.

DESCRIPTION, &c.—All the species belonging to this genus are climbing-plants, either herbaceous or shrubby, with opposite, cordate leaves, and umbels of flowers which are either axillary or terminal. They are all natives of America; but the greater part of them require a stove in this country. The name Gonolobus is from two Greek words signifying an angled pod.

1.—GONOLOBUS HIRSUTUS, *Michx.* THE HAIRY GONOLOBUS.SYNONYME.—*Vincetoxicum acanthocarpus*, *Walt.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard., t. 1; and our fig. 3, in Plate 68.

SPECIFIC CHARACTER.—Stem and petiole very hairy. Leaves acuminate and pubescent. Segments of the corolla oblong, oval, obtuse. Follicles oblong, mucronate.

DESCRIPTION, &c.—The stems of this plant are climbing, and thickly clothed with a dense, rusty pubescence. The leaves are opposite, hairy on both sides, and very strongly veined. The lower leaves are very large, being frequently 5 inches long, and nearly as much broad; they are cordate, with the lobes overlapping at the base. The seed-vessels are oblong, hooked at the points, and covered with warts. The species is a native of North America from Pennsylvania to Carolina, where it grows in the hedges, spreading over them in the same way as the common traveller's-joy does in England. It was introduced in 1806, and is propagated by seeds, which it ripens freely.

2.—GONOLOBUS DISCOLOR, *Dec.* THE TWO-COLOURED GONOLOBUS.SYNONYMES.—*Cynanchum discolor*, *Banks*; *Virginian Cynanchum*.ENGRAVING.—*Bot. Mag.* t. 1273.

SPECIFIC CHARACTER.—Stem hairy. Umbels axillary. Segments of the corolla linear-lanceolate.

DESCRIPTION, &c.—The flowers of this species are called two-coloured, because the divisions of the calyx alternate with the petals in such a manner as to seem to form a part of the corolla. It is a native of Virginia, and was introduced in 1809.

CHAPTER XXXII.

GENTIANACEÆ.

CHARACTER OF THE ORDER.—Calyx four—five-cleft, permanent. Corolla monopetalous, hypogynous, regular, marcescent or deciduous, with an equally-parted limb; lobes equal in number to the calycine segments, but usually five, sometimes from four—eight, imbricate in æstivation. Stamens epipetalous, equal in number to the segments of the corolla, and alternating with them, but some of them are abortive. Ovarium solitary, one—two-celled, many-seeded. Styles one or two:

when two, they are partly combined or altogether so; stigmas one—two. Capsule (sometimes a berry) many-seeded, one—two-celled, usually two-valved; having the margins of the valves bent in, and bearing the seeds in those in which the capsule is one-celled; but the seeds are inserted in central placentas in those with two-celled capsules. Seeds small. Embryo straight, enclosed in the axis of soft fleshy albumen. Radicle tending towards the umbilicus. (*G. Don.*)

DESCRIPTION, &c.—Most of the plants belonging to this order are hardy perennials. The leaves are opposite, entire, and without stipules. The flowers are generally very pretty, and produced in umbels. Their colour is generally blue, which in some of the species becomes of an extraordinary intensity. They are all natives of temperate climates, and are generally found in the coolest and most mountainous parts of Europe, Asia, and America. Their medicinal properties are tonic, and they are generally intensely bitter. The meaning of the word *Gentianella*, is a Little *Gentian*; but it is very badly applied, as the plants belonging to this genus are generally larger than those belonging to *Gentiana*.

GENUS I.

GENTIANELLA, *Borkh.* THE GENTIANELLA.

Lin. Syst. TETRANDRIA DIGYNIA.

GENERIC CHARACTER.—Calyx four-cleft. Corolla four-cleft, salver-shaped; furrowed with four nectariferous pores at the base. Segments fringed. Seeds small, scobiform.

DESCRIPTION, &c.—All the species are perennial plants; they are all quite hardy, and very ornamental

1.—GENTIANELLA BARBATA, *Frac.* THE BEARDED GENTIANELLA.

SYNONYMES.—*G. ciliata*, *Borkh.*; *Gentiana ciliata*, *Lin.*; *Hippion ciliatum*, *Schmid.*

ENGRAVINGS.—*Bot. Mag.* t. 639; and our *fig. 2* in Plate 70.

SPECIFIC CHARACTER.—Stem flexible, angular. Leaves lanceolate, or linear. Corolla four-cleft. Segments serrated, and bearded towards the mouth of the tube.

DESCRIPTION, &c.—This species is a native of Siberia, and is quite hardy. It is generally said to be a biennial, but it will last an indefinite number of years, as, though the plant dies down to the ground every winter, it sends up a number of young plants in the spring, often at a considerable distance from the parent. It was introduced in 1759. It is called *Gentiana ciliata* in our Plate, as it is most generally known by that name.

2.—GENTIANELLA FIMBRIATA, *Borkh.* THE FRINGE-FLOWERED GENTIANELLA.

SYNONYMES.—*Gentiana fimbriata*, *Willd.*; *G. ciliata*, *Bieb.*

ENGRAVINGS.—*Bot. Mag.* t. 2031; and our *fig. 3*, in Plate 71.

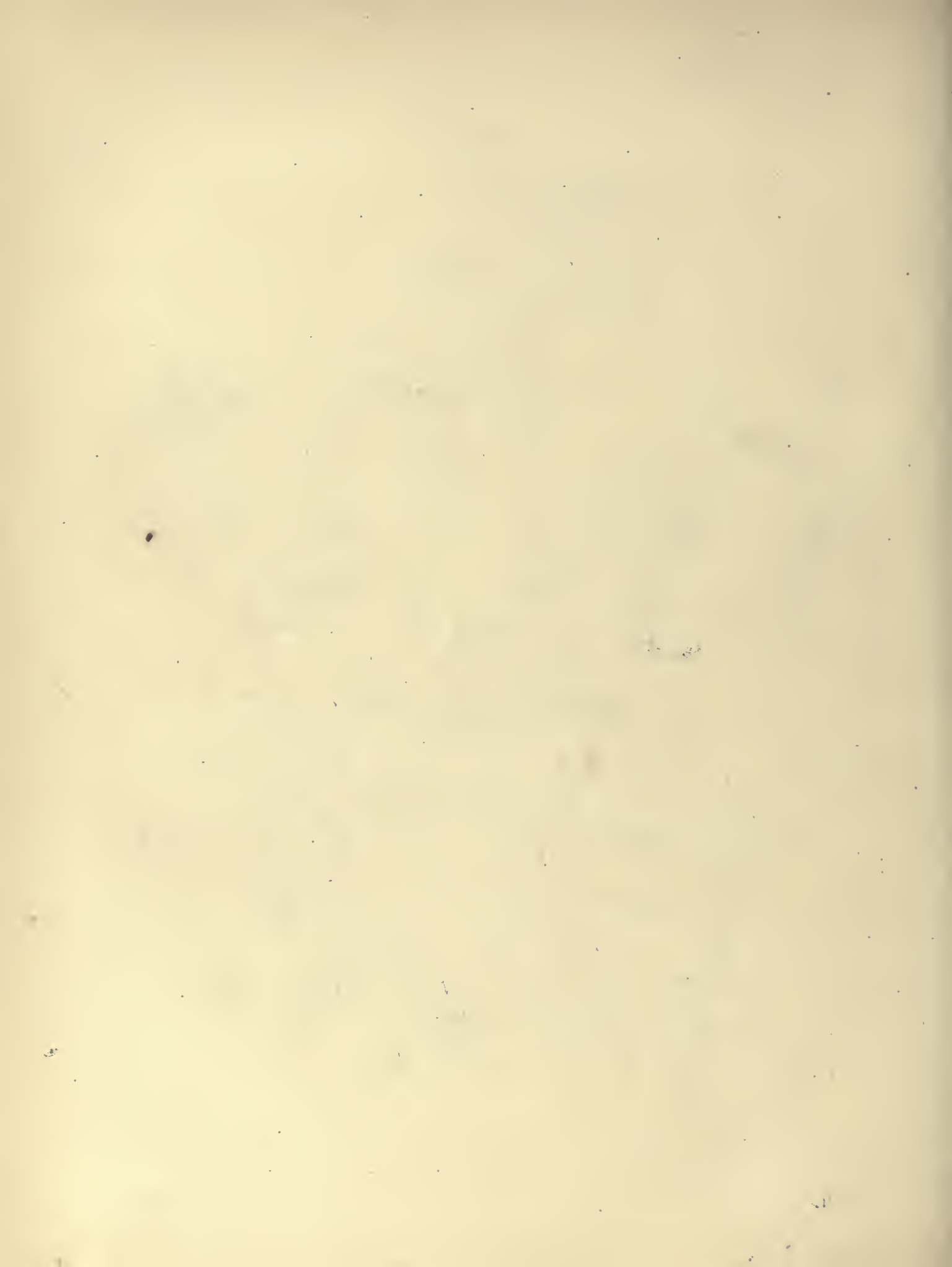
SPECIFIC CHARACTER.—Stem round, branches elongated, one-flowered;

naked under the flower. Leaves lanceolate, acute. Corolla four-cleft, deeply fringed round each segment. Calyx tetragonal, erect. Alternate segments margined.

DESCRIPTION, &c.—There appears a good deal of confusion in this genus, but the present species is quite distinct from *G. crinita*, with which it is frequently confounded. It is said to be a native of Mount Caucasus, and to have been introduced in 1818. It should be grown in peat, and it may be increased by seeds, which it ripens freely; but which should be sown as soon as they are ripe, as, if they are kept till spring, they seldom vegetate.



1. *Gentiana crenata* - 2. *Gentiana ciliata* - 3. *Gentiana Caucasica* - 4. *Gentiana verna* - 5. *Gentiana acaulis*



3.—GENTIANELLA CRINITA, *G. Don.* THE JAGGED-FLOWERED GENTIANELLA.

SYNONYME.—*Gentiana crinita*, *Fræl.*

ENGRAVINGS.—Sweet's *Brit. Flow. Gard.* t. 139; and our *fig. 1*, in Plate 70, under the name of *Gentiana crinita*.

SPECIFIC CHARACTER.—Stem erect, quadrangular; branches one-

flowered. Leaves stem-clasping, acute. Calyx obsoletely tetragonal; segments acuminate, with a membranaceous margin. Corolla four-cleft, segments obovate, finely cut at the margins.

DESCRIPTION, &c.—This species is a biennial, and quite distinct from the previous species, with which it is often confounded, which is a true perennial. The flowers of *G. crinita* are very curiously and delicately cut at the margins, so as to give them a hairy appearance. The species is a native of North America, whence it was introduced in 1824. It should be grown in peat, and the seeds should be sown as soon as they are ripe.

OTHER SPECIES OF GENTIANELLA.

There are some other species of *Gentianella*, but they are rarely seen in British gardens, with the exception of *G. ciliata*, which is often confounded with *G. barbata*, to which it bears considerable resemblance.

GENUS II.

GENTIANA, *Lin.* THE GENTIAN.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla campanulately funnel-shaped, four-five cleft. Stigma two-lobed. Seeds oblong, or roundish.

DESCRIPTION, &c.—The genus *Gentiana* of Linnæus has been divided by modern botanists into six or seven different genera; but to avoid confusion I shall generally retain the old name, as being that by which the plants are best known, merely noticing the new name, so that my readers may be able to recognise the plants if they should be met with under their new designation. The name of *Gentian* is said to be derived from *Gentius*, King of Illyria, who first tried the tonic properties of the roots.

1.—GENTIANA MACROPHYLLA, *Pall.* THE LONG-LEAVED GENTIAN.

ENGRAVING.—*Bot. Mag.* t. 1414.

SPECIFIC CHARACTER.—Corolla five-cleft, rarely four-cleft. Flowers

crowded, sessile, verticillate. Leaves growing from the root and near the flower, leaving the stem bare between; lanceolate, very long, curved.

DESCRIPTION, &c.—This plant is more curious than beautiful; but it is remarkable for its long narrow leaves, which curl round, and for the naked part of its stem, between the leaves, which has a very singular appearance. It is quite hardy, and is generally propagated by seeds. It is a native of Siberia, and was introduced in 1796. The flowers are rather small, and of a very dark blue.

2.—GENTIANA LUTEA, *Lin.* THE YELLOW GENTIAN-ROOT.

SYNONYMES.—*Asterias lutea*, *Borkh.*; *Swertia lutea*, *Vest.*; common *Gentian-root*.

ENGRAVINGS.—*Wood Med. Bot.* t. 156; *Church. et Stev. Med. Bot.* vol. iv.

SPECIFIC CHARACTER.—Calyx spathe-like. Corolla with a short tube, and a five-cleft limb, furnished with a green gland at the base of each segment. Flowers verticillate, subcymose. Leaves broad, ovate.

DESCRIPTION, &c.—The plant produces the *Gentian-root* used in medicine, and vulgarly called *Bitters*. These roots are long and thick; brown on the outside and wrinkled, but of a yellow colour within, and of a spongy substance. The flowers are yellow and spotted, and so different in their construction from those of the true

Gentians, as to have been made into a new genus by modern botanists, under the name of *Asterias*; from *Aster*, a star, in allusion to the rotate shape of the flowers. The species is a native of the Alps of middle Europe, and it was introduced in 1596.

3.—GENTIANA ASCLEPIADEA, *Willd.* THE ASCLEPIAS-LEAVED GENTIAN.

SYNONYMS.—*Coilantha asclepiadea*, *Renal*; *Dasystephana asclepiadea*, *Borkh.*

ENGRAVINGS.—*Bot. Mag.* t. 1078.

SPECIFIC CHARACTER.—Stem erect, simple, swollen at the joints. Leaves stem-clasping, sessile, ovate-lanceolate. Corolla five-cleft, campanulate. Flowers opposite, axillary, nearly sessile.

DESCRIPTION, &c.—This very singular plant has been placed in a new genus by some botanists, on account of the shape of its flowers; the name of the new genus, *Coilantha*, signifying a concave flower. This species is a native of Germany, Switzerland, and France, where it grows in moist shady valleys, and never in situations that are open and exposed. In a garden it should be grown under the shade of other plants, and in a moist loamy soil. It was introduced before 1629, and is propagated by dividing the roots.

4.—GENTIANA PURPUREA, *Lin.* THE PURPLE GENTIAN.

SYNONYMS.—*G. punicea*, *Gesn.*; *Pneumonantho purpurea*, *Schmid.*; *Coilantha purpurea*, *Borkh.*

ENGRAVINGS.—*Wood. Med. Bot.* t. 262; and *Bot. Rep.* t. 117.

SPECIFIC CHARACTER.—Radicle leaves ovate, five-nerved; stem

ones ovate-lanceolate; upper ones combined and sheathing at the base; corolla five-six-cleft; stamens five or six; calyx membranous, spathe-like; capsule fusiform.

DESCRIPTION, &c.—This is another species included in the genus *Coilantha*, the root of which is used in medicine. The flowers are of a leathery texture and purplish hue, dotted inside. The species is a native of the Alps of Europe, and it grows from one foot to two feet high. It was introduced in 1768.

5.—GENTIANA CAUCASICA, *Sims.* THE CAUCASIAN GENTIAN.

SYNONYMS.—*G. amarella*, *Pal.*; *G. collina*, *Adams*; *Eurythalia caucasica*, *G. Don.*

ENGRAVING.—*Bot. Mag.* t. 1038; and our *fig. 3*, in Plate 70.

SPECIFIC CHARACTER.—Stem quadrangular, ascending; leaves ses-

sile, ovate-acuminate, three-nerved; flowers axillary, single; peduncles as long as the calyx; corolla salver-shaped, five-cleft, bearded at the throat.

DESCRIPTION, &c.—A very pretty little biennial plant, a native of Mount Caucasus, which was introduced in 1804. It is easily known by the bearded throat of the corolla; the beard being quite white, and contrasting strongly with the dark-blue of the limb. This plant grows best in a calcareous soil, and is propagated by seeds.

6.—GENTIANA ALPINA, *Vill.* THE ALPINE GENTIAN.

SYNONYMS.—*G. acaulis*, var. *Fræl.*; *Ericala alpina*, *Borkh.*; *Hippien alpinum*, *Schmid.*

ENGRAVING.—*Lodd. Bot. Cab.* t. 476.

SPECIFIC CHARACTER.—Corolla campanulate, about equal in length to the stem; leaves ovate, rather fleshy, obtuse, nerveless. (*G. Don.*)

DESCRIPTION, &c.—This plant is very much like *G. acaulis*, and, like that species, has the flower much longer than the stem. The leaves of this plant are, however, nearly as broad as they are long; and the corolla may be called ten-cleft, as it has a lesser division between each of the five principal ones. Both the corolla and the calyx are slightly dotted. This species has an underground stem, and consequently throws up young plants or suckers, frequently at a considerable distance from the parent. It is a native of the Alps of Switzerland, and of the Pyrenees, whence it was introduced in 1817. It is quite hardy, but it grows best in a light loam, and in an open situation.



1. *Gentiana Saponaria*. 2. *Gentiana adscendens*. 3. *Gentiana fimbriata*.

7.—GENTIANA VERNA, *Lin.* THE SPRING GENTIAN.

SYNONYMS.—*G. prostrata*, *Schlech.*; *Gentianella dulcis*, *Ges.*; *Ericala verna*, *Borkh.*; *Hippion vernum*, *Schmid.*

ENGRAVINGS.—*Bot. Mag.* t. 491; *Lodd. Bot. Cab.* t. 62; *Eng. Bot.* t. 493; and our *fig. 4*, in *Pl.* 70.

SPECIFIC CHARACTER.—Plant decumbent; leaves crowded; radicle ones larger than the others; corolla funnel-shaped, five-cleft.

DESCRIPTION, &c.—This beautiful little plant is a native of the Alps of Switzerland; but it is also found on some of the mountains in Ireland, and in Teesdale Forest, in the county of Durham. The flowers are of a beautiful bright blue, and have a very agreeable fragrance. They appear in the open air, in April; but by keeping them under glass, they may be brought forward in February. The plant grows best in a mixture of peat-earth, and loam, and it will only thrive in an open situation, where it can have abundance of free air.

8.—GENTIANA PNEUMONANTHE, *Lin.* THE CALANTHIAN VIOLET.

SYNONYMS.—*Gentiana linearifolia*, *Lam.*; *G. calathiana*, *Bauh.*; *Pneumonante vulgaris*, *Schmid.*; *Ciminalis Pneumonante*, *Borkh.*

VARIETIES.—These are very numerous, but the most distinct is that called *G. P. guttata*, figured in *Bot. Mag.* t. 1101.

ENGRAVINGS.—*Eng. Bot.* t. 20; *G. P. guttata*, *Bot. Mag.* t. 1101.

SPECIFIC CHARACTER.—Stem decumbent; leaves sublinear, obtuse; flowers pedunculate, terminal, and axillary; corolla campanulate, five-cleft.

DESCRIPTION, &c.—This is a very singular-looking plant, from the great disproportion that exists between the leaves and the flowers, the stem and the leaves being very small, and the flowers very large. The species is common in many parts of England; but the variety *guttata* is only found on the Continent. This variety differs from the species only in having a few white spots inside the flower.

9.—GENTIANA ACAULIS, *Lin.* THE STEMLESS GENTIAN, OR COMMON GENTIANELLA.

SYNONYMS.—*G. grandiflora*, *Pers.*; *Pneumonante acaulis*, *Schmid.*; *Ciminalis acaulis*, *Borkh.*; *C. longiflora*, *Mench.*; *C. grandiflora*, *Mayer.*

ENGRAVINGS.—*Bot. Mag.* t. 52; *Eng. Bot.* t. 1594; and our *fig. 5*, in *Pl.* 70.

SPECIFIC CHARACTER.—Stem very short, quadrangular, one-flowered; flowers very large; corolla campanulate, five-ten-cleft; segments obtuse, mucronate; leaves with cartilaginous margins; radicle ones crowded, imbricated.

DESCRIPTION, &c.—This very beautiful plant is probably well known to most of the readers of this work, particularly to those who have visited the gardens of the London Horticultural Society, at Chiswick, in the month of April, as it forms there an edging to some of the borders, so conspicuous, from the beauty of its colour, that few persons can pass it by unnoticed. It is a native of the Alps of middle Europe and Siberia, and it has occasionally been found wild in Britain; though it is probably not a true native of this country, the plants found in a wild state having been, most likely, thrown out from some garden. It generally thrives best when grown in peat soil. There are many varieties, one of which has double flowers, and another, the flowers of which are quite white.

10.—GENTIANA ADSCENDENS, *Pal.* THE ASCENDING, OR PORCELAIN-FLOWERED GENTIAN.

SYNONYMS.—*G. decumbens*, *Lin.*; *G. pneumonante*, *Gmel.*; *Pneumonante adscendens*, *Schmid.*; *Dasystephana adscendens*, *Borkh.*

VARIETIES.—The most remarkable of these is a dwarf plant with a simple decumbent stem, figured in the *Bot. Mag.* t. 723.

ENGRAVINGS.—*Bot. Mag.* t. 705; and our *fig. 2*, in *Plate* 71.

SPECIFIC CHARACTER.—Stem decumbent, afterwards ascending. Leaves lanceolate; radicle ones elongated. Calyx cleft on one side, and terminating in three teeth on the other. Corolla campanulate, five-cleft, toothed between the segments.

DESCRIPTION, &c.—This is a very beautiful species from the singularly transparent hue assumed by the flowers, which have a remarkably delicate gloss, like that of fine china. The species is a native of Siberia,

whence it was introduced in 1799; and its root is occasionally used in medicine, on account of its fine aromatic bitter. It is perfectly hardy, but it can only be propagated by seeds, as it has a tap-root, and, of course, does not send up suckers like these species which have an underground stem, or creeping root. It flowers in July, and continues in blossom a long time.

11.—GENTIANA SEPTEMFIDA, *Fœrsl.* THE SEVEN-CLEFT, OR CRESTED GENTIAN.

SYNONYMES.—*Pneumonanthe septemfida*, *Schmid.*; *Eurythale septemfida*, *Borkh.*

VARIETY.—*G. s. punctata*, *Sims*, *Bot. Mag. t. 1410.* Corolla spotted.

ENGRAVINGS.—*Bot. Mag. t. 1229.*

SPECIFIC CHARACTER.—Corolla salver-shaped, five or seven cleft, with a small crested segment, between every two of the larger segments. Leaves opposite and crossed; crowded, three-nerved.

DESCRIPTION, &c.—This is a very singular species, from the small crested segments which intervene between the larger segments. It is, however, more curious than beautiful, though the species is much handsomer than the variety. It is a native of the Persian Alps, near the Caspian Sea, the Crimea, and Mount Caucasus. It was introduced in 1804. It is quite hardy, and may be propagated by dividing the root.

12.—GENTIANA SAPONARIA, *Lin.* THE SOAPWORT-LIKE, OR BARREL-FLOWERED GENTIAN.

SYNONYMES.—*G. fimbriata*, *Vahl.*; *G. Catesbæi*, *Walt.*; *Pneumonanthe saponaria*, *Schmid.*

ENGRAVINGS.—*Bot. Mag. t. 1039*; *Aedr. Bot. Rep. t. 418*; and our *fig. 1*, in *Plate 71.*

SPECIFIC CHARACTER.—Flowers sessile, in verticillate heads; corolla somewhat ten-cleft, ventricose, closed; alternate segments smaller than the others, and slightly fringed. Leaves ovate-lanceolate, three-nerved, very smooth.

DESCRIPTION, &c.—This is a very singular species, from the flowers never expanding, but always remaining closed at the point; which circumstance, combined with the dark blue, and barrel-like form of the corolla, distinguishes it from all the other species. When the flower is opened artificially, the alternate segments will be found curiously fringed. It is a native of North America, and was introduced in 1776.

13.—GENTIANA OCHROLUCA, *Lin.* THE CREAM-COLOURED GENTIAN.

SYNONYMES.—*G. villosa*, *Willd.*; *G. saponaria*, *Walt.*; *Pneumonanthe villosa*, *Schmid.*

ENGRAVING.—*Bot. Mag. t. 1551.*

SPECIFIC CHARACTER.—Stem slightly angular, rough. Leaves ovate-lanceolate, wrinkled. Flowers sessile, forming a terminal fascicle. Corolla five-cleft, campanulate, ventricose; segments acute, closed.

DESCRIPTION, &c.—This species is very nearly allied to *G. Saponaria*; but it differs in the colour of the corolla, which is white with green veins; and in its shape, which is longer, sharper-pointed, and with the alternate segments not fringed. It is a native of North America, growing in dry, sandy fields, and on gravelly hills. It was introduced in 1803. It flowers in September.

14.—GENTIANA INTERMEDIA, *Sims.* THE INTERMEDIATE GENTIAN.

SYNONYMES.—*G. ochroluca*, *Pursh.*; *G. saponaria*, *Michx.*; *Pneumonanthe intermedia*, *G. Don.*

ENGRAVING.—*Bot. Mag. t. 2303.*

SPECIFIC CHARACTER.—Plant smooth; stem erect, simple. Flowers

in a terminal, few-flowered head. Calyx five-cleft; segments leafy; sometimes one longer than the corolla. Corolla ventricose, five-six-cleft; closed; interior segments simple. Leaves obovate-oblong, slightly three-nerved.

DESCRIPTION, &c.—This species is evidently nearly allied to the two preceding ones; but it is much less handsome, as the flowers are not produced in clusters or whorls, and each is almost hidden in its leafy calyx. The species is a native of North America, and was introduced in 1820. It flowers in October.

OTHER SPECIES OF GENTIANA.

G. INCARNATA, *Sims.*

A native of North America, with dingy pink flowers, introduced by Mr. Lyon in 1812.

G. VISCOSA, *Ait.*

A very handsome biennial, a native of the Canaries, introduced in 1781. The flowers are yellow.

CHAPTER XXXV.

POLEMONIACEÆ.

CHARACTER OF THE ORDER.—Calyx tubular, five-cleft. Corolla with a five-lobed limb, imbricate or twisted in æstivation. Anthers sagittate, incumbent, two-celled. Style very long. Stigma three-lobed; lobes linear, obtuse. Capsule three-celled, three-valved, generally oblong. Placenta trigonal, central, applied to the angles of the dissepiments. Seeds mucilaginous; albumen fleshy; embryo large, straight.

DESCRIPTION, &c.—The plants belonging to this order are generally ornamental; but the greater part of the hardy genera contain only annuals.

GENUS I.

POLEMONIUM, *Lin.* THE GREEK VALERIAN.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx campanulate, five-cleft. Corolla rotate, with a short tube, and a five-lobed limb. Stamens five, equal, inserted in the throat of the corolla. Filaments dilated at the base, and forming a continuous ring, which nearly closes the mouth of the tube. Anthers incumbent. Capsule roundish, with crustaceous valves, covered with a permanent calyx. Cells many-seeded. Seeds oblong, filled with large albumen.

DESCRIPTION, &c.—All the species are hardy herbaceous plants, with very ornamental flowers, which are either blue or white. The word Polemonium is said to signify war, and to arise from the circumstance of the plant having occasioned a war between two kings, each of whom claimed the honour of its discovery, on account of its valuable medicinal properties. The story is, however, extremely vague; and it is more than probable that the singular name of the genus alluded to the plant being useful in war, on account of its property of stanching blood.

1.—POLEMONIUM CŒRULEUM, *Lin.* THE BLUE GREEK VALERIAN, OR JACOB'S-LADDER.

SYNONYMS.—*Valeriana cœrulea*, *Bauh.*; *V. græca*, *Dod.*; *Ladder of Heaven*; *Charity*.

ENGRAVINGS.—*Eng. Bot.* t. 17; *Bot. Reg.* t. 1303.

SPECIFIC CHARACTER.—Stem glabrous; leaves pinnate; leaflets ovate-lanceolate, acuminate, glabrous; segments of the calyx ovate, acuminate; flowers erect, corymbose; segments of corolla roundish.

DESCRIPTION, &c.—This species is found in poor sandy soils, in various parts of England, and throughout the whole of the north of Europe. There are numerous varieties—one of which has the flowers white, another the leaves variegated, and another the flowers white and blue. Another variety, that figured in the *Botanical Register*, is a native of North America, and has large flowers of a most beautiful pale blue.

2.—*POLEMONIUM SIBIRICUM*, *D. Don.* THE SIBERIAN POLEMONIUM.SYNONYMES.—*P. lacteum*, *Leh.* ; *P. dissectum*, *Rchb.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard. t. 182.

SPECIFIC CHARACTER.—Leaves bipinnate, pubescent; leaflets linear-lanceolate, acute; corymb paniculate, crowded; calyx hairy; segments of the corolla broadly ovate, acute.

DESCRIPTION, &c.—This is a very handsome species. The stems are angular; several rising erect from the same plant, and growing from a foot to eighteen inches high. The leaves are pinnate; and the leaflets are either pinnate or pinnatifid, being frequently crowded together, so as to appear tufted. The flowers are white, and much smaller than those of the other species, though they are very handsome, from their abundance, and the manner in which they are disposed. The species is a native of Siberia, whence it was introduced in 1800. It will grow freely in any common garden soil that is light and sandy, but it requires an open situation, where it can have abundance of free air.

3.—*POLEMONIUM RICHARDSONII*, *Graham.* DR. RICHARDSON'S GREEK VALERIAN.SYNONYMES.—*P. speciosum*, *Fisch.* ; *P. cœruleum*, var. *nanum*, *Hook.*

ENGRAVINGS.—Bot. Mag. t. 2800

SPECIFIC CHARACTER.—Stem hairy, angular, erect; leaves pinnate,

with numerous leaflets; pinnae ovate, rotund, mucronate, pubescent beneath; flowers corymbose, naked; segments of the corolla obtuse, crenulated; roots subfusiform, very long.

DESCRIPTION, &c.—The root of this plant is very remarkable, as it is frequently three or four feet long, and as thick as a finger, though the plant is not more than six inches high. The root is also branched at the tip like a grappling-iron, as though to take a firm hold of the loose sand in which the plants generally grow. The root is yellow, and much resembles that of licorice. The plant is a native of the Great Bear Lake, where it was found by Dr. Richardson, in 1825, growing in 66° north latitude. It will, of course, bear any degree of cold in this country; but it is easily injured by an excess of moisture, and requires a deep sandy soil.

4.—*POLEMONIUM HUMILE*, *Ram. et Schult.* THE DWARF GREEK VALERIAN.SYNONYMES.—*P. villosum*, *Swt.* ; *P. lanatum*, *Fisch.* ; *P. cœruleum*, *B Gmel.* ; *P. gracile*, *Dougl.* ; *P. Richardsonii*, *B G. Don.*

ENGRAVINGS.—Bot. Reg. t. 1304 ; Swt. Brit. Flow. Gard., t. 266.

SPECIFIC CHARACTER.—Stem pilose, angular, erect; leaves with many pairs of leaflets, which are ovate, bluntnish, pilose on both surfaces; flowers a little panicled, drooping; segments of the corolla roundish, crenulated. (*G. Don.*)

DESCRIPTION, &c.—This species, like *P. Richardsonii*, has the root excessively elongated. The stem is erect, and covered with soft hairs; the petioles are slightly winged and dilated at the base, which is tinged with purple. The leaflets are hairy on both sides, and delicately fringed at the margin. The flowers have rather a disagreeable smell. This species is very nearly allied to *P. Richardsonii*, but it is not so handsome. It was raised from seeds collected by Dr. Richardson during the Arctic expedition, which took place about 1828, and it has been also found in Siberia. It should be grown in poor gravelly soil, kept moist; as, when grown in rich mould, it produces more leaves than flowers.

5.—*POLEMONIUM MEXICANUM*, *Cerv.* THE MEXICAN POLEMONIUM.

ENGRAVING.—Bot. Reg. t. 460.

SPECIFIC CHARACTER.—Leaves pinnate, with many leaflets; terminal, one or three lobed; flowers nodding; calyx covered with viscid hairs.

DESCRIPTION, &c.—This species is a native of Mexico, whence it was sent to Madrid in 1815. The flowers are small, and more tubular than those of most of the other species, but they do not possess much beauty. The plant is, indeed, scarcely worth the trouble of cultivating, as it is rather tender.

6.—POLEMONIUM PULCHERRIMUM, *Hook.* THE PRETTIEST POLEMONIUM.ENGRAVING.—*Bot. Mag.* t. 2979.

SPECIFIC CHARACTER.—Stems numerous, ascending; segments of the

calyx pubescent; leaflets ovate, glabrous; panicles sub-corymbose; segments of the corolla oval, subacute.

DESCRIPTION, &c.—The root of this species is partly subfusiform and partly fibrous; the tap root being very much attenuated at the base, and striking deeply into the earth. There are numerous slender stems, which are much branched, and which bear a great quantity of flowers, having very small leaflets. The flowers are very numerous, and they are produced in small terminal corymbs. The species is a native of the Rocky Mountains of North America, whence it was introduced in 1827, and where there is a variety with white flowers. Both are perfectly hardy in British gardens. The following observations, extracted from the *Bot. Mag.*, point out the more important differences and peculiarities of this plant:—"In size it comes nearest to *P. Richardsonii*, but it is more tufted in its growth, having smaller and shorter leaflets, numerous and ascending stems, much smaller and differently-coloured flowers, with their segments greatly narrower, and truly oval. The bright colour of the blossoms is retained long after the plant is dried." It should be grown in moist gravelly soil, which should never be suffered to become too dry.

7.—POLEMONIUM REPTANS, *Lin.* THE CREEPING GREEK VALERIAN.ENGRAVING.—*Bot. Mag.* t. 1837.

SPECIFIC CHARACTER.—Root creeping; stems leafy, glabrous; leaves

pinnate; leaflets seven, ovate, acute, glabrous; flowers nodding; segments of the corolla wedge-shaped.

DESCRIPTION, &c.—This is a very pretty little plant, with a creeping stem, and the flowers in a loose paniced corymb, varying from dark-blue to white. It is a native of North America, whence it was introduced in 1758. It is of easy culture in any common garden soil, but it is best adapted for rockwork.

OTHER SPECIES OF POLEMONIUM.

P. GRACILE, *Willd.*

A native of Dahuria, with pale-blue flowers; nearly allied to the common species. Introduced in 1828.

P. PULCHELLUM, *Bunge.*

A dwarf plant; a native of Siberia, with blue flowers, having white anthers and stigma. There is a variety the flowers of which are white. This species has not yet been introduced.

P. ACUTIFLORUM, *Willd.*

A native of the North-west coast of America; not introduced. This is the same as the *P. boreale* of Adams.

P. MOSCHATUM, *Worm.*

Nearly allied to *P. Richardsonii*, but with a musky scent. A native of North America; introduced in 1827.

GENUS II.

PHLOX, *Lin.* THE PHLOX.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx deeply five-cleft, connivent. Corolla silver-shaped; tube elongated; limb twisted in aestivation, with

cuneated segments. Stamens inserted above the middle of the tube. Cells of capsule one-seeded. (*G. Don.*)

DESCRIPTION, &c.—The species are herbaceous perennial plants, sometimes, but rarely, becoming shrubby at the base, with simple leaves, which are generally opposite. The flowers are terminal, and are generally

produced in either panicles or corymbs. All the plants belonging to this genus are easily distinguished by the singular shape of the bud, which resembles that of a flame; the segments of the limb of the corolla are twisted, so as to lie over each other, like those of the Periwinkle, and this construction is not found in any other genus belonging to the order. The word Phlox signifies flame. The old name of these plants was Lychnidea.

§ 1. *Leaves broad; barren stems wanting.*

1.—PHLOX ACUMINATA, *Pursh.* THE POINTED-LEAVED PHLOX, OR COMMON LYCHNIDEA.

SYNONYMS.—Phlox decussata, *Lyons*; the cross-leaved Phlox.

ENGRAVING.—*Bot. Mag.* t. 1880.

SPECIFIC CHARACTER.—Erect, pubescent; stem angular; leaves ovate-lanceolate, acuminate; lower ones narrow towards the base, and

sub-petiolate, exactly decussate, rough on the upper surface, and hairy below; flowers in a paniced corymb, on very short pedicels; segments of the corolla rounded; tube pubescent; segments of the calyx bristly.

DESCRIPTION, &c.—This is a very handsome species, the flowers varying in colour from a dark blue or purple to a rose-colour. The stem, which is square, grows about three feet high, and the leaves are decussate; that is, if one pair points north and south, the next pair points east and west, and so on. The leaves are all hairy beneath, and rough on the upper surface. This species is a native of Georgia and South Carolina, whence it was introduced in 1812. It is rather more tender than most of the other species of Phlox, and it flowers very late in the season, its blossoms seldom expanding before September or October. It will grow in any common garden soil, and it is propagated by dividing the root.

2.—PHLOX ODORATA, *Swt.* THE SWEET-SCENTED PHLOX.

SYNONYME.—Phlox bimaculata, *Hort.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.* t. 224; and *our fig. 2,* in Pl. 72.

SPECIFIC CHARACTER.—Stem erect, branching in the upper part, and

spotted with irregular scabs or marks; leaves acuminate, smooth, rough at the margin; flowers disposed in a paniced raceme, sweet-scented; teeth of the calyx ovate, very short; segments of the corolla wedge-shaped.

DESCRIPTION, &c.—This species is remarkable for the beauty of its flowers, which are of a bright rose-colour, and remarkably sweet-scented. The stem generally grows about three feet high, and the panicle of flowers is frequently above a foot in length. The blossoms, which begin to expand in June, remain open for a long time. It will grow in any common garden soil; and though the stems are frequently killed down to the ground in severe weather, the roots will generally send up fresh shoots in spring. The species is a native of North America, and was introduced about 1825. It is remarked that the flowers of this plant will preserve their fragrance for a very long time when dried. The plant is increased by dividing its roots, or by cuttings, which strike readily.

3.—PHLOX REFLEXA, *Swt.* THE REFLEXED-LEAVED PHLOX.

ENGRAVING.—*Sweet's Brit. Flow. Gard.* t. 232.

SPECIFIC CHARACTER.—Stem clothed with a short rough pubescence, spotted. Leaves very much reflexed, smooth, and shining. Flowers

in a close, crowded panicle, very sweet-scented; teeth of the calyx lanceolate, spreading; tube of the corolla smooth, curved, segments of the limb roundly ebovate, imbricated at the base.

DESCRIPTION, &c.—This species very closely resembles the last, excepting in the leaves, which are very distinct, and in the colour of the flowers, which is much darker; besides which, each segment of the limb is marked with a dark purple spot at the base. The stamens are more seen than in most of the other kinds of Phlox, and the pollen is of a golden yellow. This plant is evidently a hybrid, but its exact parentage is not known. It grows best in peat soil, and it is propagated by cuttings, which, if taken off early in spring, and struck under hand-glasses, will make flowering plants the following summer.



1. *Phlox Coldreyana*. — *Phlox odorata*. — 3. *Phlox Canadensis*. — 4. *Van Houttei Phlox*.

4.—PHLOX PYRAMIDALIS, *Smith.* THE PYRAMIDAL PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 233.

SPECIFIC CHARACTER.—Stem erect, scabby, spotted. Leaves cordate, oblong, acuminate; smooth, but rough at the margin. Flowers in a

close compact panicle, forming a pyramid on the main stem. Segments of the corolla euneate, truncate; teeth of the calyx suberect, lanceolate, acute.

DESCRIPTION, &c.—This species, though it bears considerable resemblance to the last, is yet very inferior in beauty, from the small size of its flowers and their somewhat dingy colour. It grows three or four feet high, and has smooth, handsome leaves. It is quite hardy, and will grow readily in any common garden soil that is tolerably rich, provided the ground be occasionally watered in hot, dry weather. It is propagated by cuttings planted under hand-glasses in spring, or it may be increased by dividing the roots. It is a native of North America, whence it was introduced in 1800 and it flowers from June to October.

5.—PHLOX PENDULIFLORA, *Swt.* THE DROOPING-FLOWERED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d ser. t. 46.

SPECIFIC CHARACTER.—Stems subflexuose, very slightly quadrangular, rough, spotted. Leaves oblong, lanceolate, acuminate, sessile; upper surface smooth and shining; under surface hairy and rough at

the margin and on the nerves. Cerymb many-flowered, paniculate, drooping before expansion; calyx pubescent; segments lanceolate, mucronate; segments of the corolla roundish, imbricated.

DESCRIPTION, &c.—This is a very beautiful species, from the large size of its separate flowers, and their brilliant colour. It grows to a considerable height, and forms a stately plant when covered with its flowers. It grows best when planted in a bed of peat mould. It is a native of North America, and was introduced in 1824. It takes its name of penduliflora from the side-branches of the panicle drooping a little before the flowers expand.

6.—PHLOX CORDATA, *Eu.* THE HEART-LEAVED PHLOX.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d ser. t. 13; Paxton's Mag. of Bot. vol. 1, p. 268.

SPECIFIC CHARACTER.—Leaves oblong-cordate, subacuminate, rough

at the margin. Cerymb paniculate; calyx terminating in five long bristles.

DESCRIPTION, &c.—This species being a native of Carolina, is rather tender in British gardens, and requires protection during severe winters. It is, however, worth some trouble in cultivating, on account of the delicate tint of its flowers, which are of a pale rose-colour, and their delightful fragrance. The species was introduced in 1826, and it flowers from June till October. A very splendid variety of this species was raised by Mr. Clark of East Retford. The flowers are very large, and have a white eye.

7.—PHLOX LONGIFLORA, *Penn.* THE LONG-FLOWERED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d ser. t. 31.

SPECIFIC CHARACTER.—Stem rough, but not hairy, slightly spotted. Leaves lanceolate-acuminate, very smooth and shining, rough at the

margin; upper ones broader than the lower ones. Raceme paniculated; segments of the corolla roundish, tube very long; teeth of the calyx lanceolate, acute.

DESCRIPTION, &c.—This is one of the few species of Phlox which have white flowers, and it has also the peculiarity of producing numerous stems from the same root. The leaves are opposite, and cross each other like those of *P. acuminata*, but the species is easily distinguished by the colour of its flowers; while it differs from the other white-flowered species in the great length of the tube of the corolla. It flowers very late in the season; the blossoms continuing expanded till killed by the frost. It is a native of North America, whence it was introduced in 1827.

8.—PHLOX GLABERRIMA, *Lin.* THE SMOOTH-STALKED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard. 2d ser. t. 36.

SPECIFIC CHARACTER.—Tufted; stem erect, very smooth; leaves linear-lanceolate, quite smooth and glossy; corymb terminal in three

tufts, each consisting of three or four flowers; teeth of the calyx acuminate, spreading; segments of the corolla rounded.

DESCRIPTION, &c.—This is rather a dwarf plant, as it grows in dense tufts with erect stems, from a foot to eighteen inches high. In most of the other species the stem is rough and hairy, but in this it is perfectly smooth. The flower-stem is also distinctly divided into three tufts of flowers. The species is a native of North America, whence it was introduced in 1725. It flowers from June till August, and grows well in any common garden soil.

9.—PHLOX SCABRA, *Sut.* THE ROUGH-LEAVED PHLOX.

SYNONYMS.—*P. Sickmanni, Lehm.*; *P. Americana, Hort.*

ENGRAVING.—Sweet's Brit. Flow. Gard. t. 248.

SPECIFIC CHARACTER.—Stem glabrous in the lower part, but hairy above; leaves oblong-lanceolate, acute, very rough and rasp-like on

the upper surface, undulated at the margin; flowers in a very loose panicle; calyx hairy; teeth awl-shaped, erect; tube of the corolla curved, hairy; segments of the limb obovate, spreading.

DESCRIPTION, &c.—The flowers of this species are very handsome, but the leaves have nothing to recommend them, being coarse on the upper surface, and of a dingy green. The flowers are very fragrant. The species is a native of North America, whence it was introduced in 1812; and it is easily propagated by its suckers, which it sends up in great abundance.

10.—PHLOX CAROLINA, *Lin.* THE CAROLINA PHLOX.

SYNONYMS.—*Lychnidea Caroliniana, Mart.*; rough-stemmed *Lychnidea.*

ENGRAVING.—Bot. Mag. t. 1344.

SPECIFIC CHARACTER.—Leaves lanceolate, very smooth; stem rough; corymb subfastigate.

DESCRIPTION, &c.—This species was the first kind of Phlox introduced into our gardens, as it appears to have been grown by Mr. Cowell, a nurseryman at Hoxton, before the year 1728. The flowers are large, and very handsome, with a dark, star-like mark in the centre. The corymb is rather small and roundish. The species is a native of South Carolina, and is consequently somewhat tender in our gardens.

11.—PHLOX SUFFRUTICOSA, *Willd.* THE SHRUBBY PHLOX.

SYNONYMS.—*P. nitida, Pursh.*; shining-leaved Phlox.

ENGRAVING.—Bot. Reg. t. 68.

SPECIFIC CHARACTER.—Stem erect, very smooth, round, slightly spotted; leaves ovate-oblong, somewhat fleshy, shining above, and of

a very dark green, but pale below; corymb fastigate, lower branches elongated and naked; segments of the corolla broadly ovate, and somewhat retuse; teeth of the calyx lanceolate, mucronate.

DESCRIPTION, &c.—This species is nearly allied to Phlox Carolina, but in this both the stem and leaves are smooth, and the flowers are of a much darker and more brilliant purple. The leaves are also darker, more shining, and of a much thicker texture; and the stem, which is somewhat shrubby at the base, continues partly undecayed and in leaf during the winter. The species is a native of South Carolina, and was introduced in 1790.

12.—PHLOX TRIFLORA, *Michx.* THE THREE-FLOWERED PHLOX.

SYNONYME.—*P. carnea, Bot. Mag.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard. t. 29; and Bot. Mag. t. 2155.

SPECIFIC CHARACTER.—Stems erect, branching, somewhat pubescent; leaves lanceolate, smooth, each branch having a three-flowered corymb; teeth of the calyx linear.

DESCRIPTION, &c.—This species has a very loose branching corymb of large pale-pink flowers. It grows well in the open ground to the height of about a foot or eighteen inches, and continues flowering from July till October. It is a native of North America, whence it was introduced in 1816.

13.—PHLOX COLDRYANA, *Paxt.* MR. COLDRY'S PHLOX.

ENGRAVINGS.—Paxton's Mag. of Bot. vol. 7, p. 197; and our *fig.* 1, in Pl. 72.

SPECIFIC CHARACTER.—Stems erect, slightly downy, spotted; leaves

ovate-lanceolate, acuminate, subcordate, slightly scabrous on the upper surface; corymb spreading; segments of the corolla cuncate; teeth of the calyx very short.

DESCRIPTION, &c.—This very handsome species is a hybrid, raised about 1835, in the Bristol Nursery. It grows about two feet high, and is of a compact bushy habit of growth. It should be grown in light soil, partly composed of leaf mould; and it should be removed to a fresh bed about every third year, or the flowers will degenerate in both size and colour. The plant is propagated by dividing the roots.

OTHER SPECIES OF PHLOX BELONGING TO § 1.

P. OMNIFLORA, *Hort.*

This is a remarkably handsome species, with an elongated corymb of clear white flowers, which it continues producing from June till the latter end of October. It rarely grows above a foot or eighteen inches high, and is equally well suited to keep in a pot or to plant in the open ground. Even when it has flowered in the open ground all the summer, it may be taken up and put into a pot to force for flowering in early spring. It is thus one of the most useful kinds of Phlox for a suburban garden.

VAN HOUTTE'S PHLOX. *Bot. Reg.* for 1843, t. 5; and our *fig.* 4, in Pl. 72.

This is a very beautiful garden variety, raised by a nurseryman at Ghent. It is very pretty, being distinctly marked with a crimson star on a white ground, and the flowers are delightfully fragrant. Its habit of growth resembles that of *P. omniflora*, and it requires the same treatment.

P. PANICULATA, *Lin.*

This was one of the first species introduced, having been sent to England in 1732. It is a native of Virginia, where it is found in rich moist meadows. The flowers of the species are purple; but there is a variety the flowers of which are white, with a slight tinge of red.

P. UNDULATA, *Ait.*

This is probably only a variety of the preceding species, as the only difference is in the leaves, which are somewhat undulated; and in the stem, which grows tall and stronger, frequently attaining the height of five feet. It is a native of Virginia, and was introduced in 1759.

P. LATIFOLIA, *Michx.*

Is probably only a variety of *P. pyramidalis*, but the flowers are larger, and of a darker colour. It is a native of Carolina, and was introduced in 1812.

P. MACULATA, *Lin.*

This species has a stem marked with very conspicuous brown spots, with violet-coloured flowers. It is a native of Carolina, and was introduced in 1740.

P. NITIDA, *Pursh.*

This is a very handsome species, nearly allied to *P. Carolina*, but with large purple flowers and smooth shining leaves. It is a native of South Carolina, and it was introduced in the year 1800.

§ 2. *Leaves broad; plants with barren stems.*14.—PHLOX OVATA, *Lin.* THE OVATE-LEAVED PHLOX.

ENGRAVING.—Bot. Mag. t. 528.

SPECIFIC CHARACTER.—Radical leaves ovate, acute, somewhat fleshy; corymb subfastigate; segments of the corolla undulated, retuse.

DESCRIPTION, &c.—This species was first described by Linnæus as having its flowers produced singly, and not in corymbs; but the specimen from which Linnæus wrote his description was probably an abortive one. The flowers are large and very handsome. The segments of the corolla are quite distinct, and bend back, so as to give quite a peculiar character to the whole. The species is a native of North America, whence it was introduced in 1759.

15.—PHLOX STOLONIFERA, *Curt.* THE CREEPING PHLOX.SYNONYMES.—*P. reptans, Michx.; P. crassifolia, Lodd.; P. prostrata, G. Don.*ENGRAVINGS.—Bot. Mag. t. 563; Sweet's Brit. Flow. Gard., 2d ser., t. 293; Lodd. Bot. Cab., t. 1596; and our *fig. 1*, in Pl. 73.

SPECIFIC CHARACTER.—Stoloniferous, creeping; leaves fleshy, spatulate, obovate.

DESCRIPTION, &c.—This is a very handsome and well-known species, of which there are two very distinct varieties: one with violet-coloured flowers, and the other with flowers of a reddish-purple, and thick fleshy leaves. The species was first discovered in Georgia, in 1786; but living plants were not brought to England till 1801. The variety was introduced in 1825. Both the species and the variety are dwarf plants, suitable for rockwork.

16.—PHLOX PILOSA, *Mill.* THE HAIRY PHLOX.SYNONYMES.—*P. aristata, Michx.; Lychneides Marilandica, Ray; Lychnidea umbellifera, Pluk.*

ENGRAVINGS.—Bot. Mag., t. 1307; and Lodd. Bot. Cab., t. 1371.

SPECIFIC CHARACTER.—Hairy; stem erect; leaves linear-lanceolate; segments of the calyx subulate; tube of the corolla curved, pubescent.

DESCRIPTION, &c.—This is by no means a handsome species, on account of the length and number of the segments of the calyx. The flowers are comparatively small, and few in number. The species is a native of North America, whence it was first introduced in 1759; but as it was soon lost, and was reintroduced in 1764, that date is frequently affixed to it in the catalogues. There are two varieties; the flowers of one of which are flesh-coloured, with a dark-red centre, and those of the other white, with a pink centre. Both kinds become quite white when dried. The species is tolerably hardy, and the flowers are produced from May till July.

17.—PHLOX AMÆNA, *Sims.* THE PLEASING PHLOX.SYNONYMES.—*P. pilosa, Michx.; Fraser's hairy Phlox.*

ENGRAVING.—Bot. Mag., t. 1308.

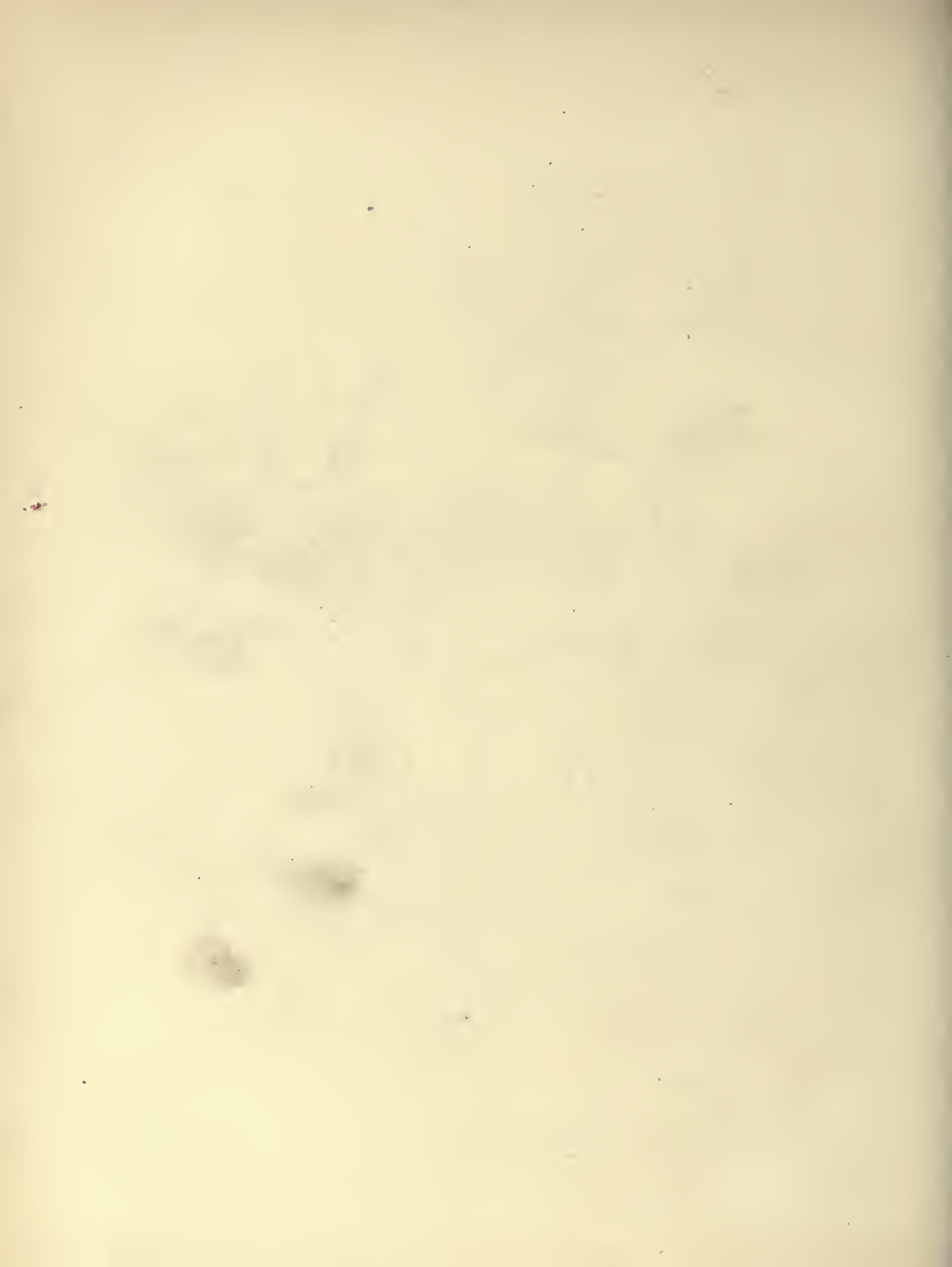
SPECIFIC CHARACTER.—Hairy; stem decumbent; leaves ovate-lan-

ceolate; segments of the calyx subulate-acuminate; tube of the corolla straight, glabrous.

DESCRIPTION, &c.—This is a very handsome species, and quite distinct from the last, of which it has been sometimes supposed to be a variety. It is a native of South Carolina, where it was discovered in 1786, though it was not introduced till 1809. The flowers are large, of a bright rose-colour, and they are so disposed as to make the corymb appear quite round.



1 *Phlox stolonifera*. — 2. *Phlox procumbens*. — 3. *Phlox setacea*.
 4. *Phlox subulata*. — 5 *Phlox nivalis*.



18.—PHLOX CANADENSIS, *Sweet.* THE BLUE CANADIAN PHLOX.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 221; and our *fig. 3*, in Pl. 72.

SPECIFIC CHARACTER.—Stems erect, subpubescent; lower leaves

ovate, upper ones broadly lanceolate; corymbs few-flowered, compact; segments of the calyx subulate-linear; segments of the corolla broadly obcordate; tube curved, longer than the calyx.

DESCRIPTION, &c.—The plant grows in a thick tuft, each root producing a great many erect branches. The leaves are smooth, but slightly fringed with short hairs round the margin. The flowers are blue, tinged with lilac, and are disposed in small, few-flowered panicles. The species is a native of Canada, whence it was introduced in 1826, and it is quite hardy in British gardens, where it flowers from May to October. It is generally increased by dividing the roots.

19.—PHLOX DIVARICATA, *Lin.* THE SPREADING-FLOWERED PHLOX.

SYNONYMS.—*Lychnidea Virginiana*, *Pluk.*; the early-flowering Phlox.

ENGRAVING.—*Bot. Mag.*, t. 163.

SPECIFIC CHARACTER.—Stem branched, spreading; peduncles twin.

Leaves broadly-lanceolate, upper ones alternate. Flowers in a loose, spreading panicle; segments of the corolla somewhat wedged-shaped, bifid; tube curved.

DESCRIPTION, &c.—A very handsome species of Phlox, with large, pale-blue flowers. It seldom exceeds a foot in height, and produces its flowers in great abundance in April and May. It does not, however, continue so long in flower as most of the other species of the genus. It is a native of North America, and was introduced in 1746.

§ 3. *Leaves narrow.*20.—PHLOX PROCUMBENS, *Lehm.* THE PROCUMBENT PHLOX.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, 2d. ser., t. 7; and our *fig. 2*, in Pl. 73.

SPECIFIC CHARACTER.—Stem procumbent, branched; branches ascending, and slightly hairy. Leaves lanceolate, acute, attenuated

at the base, very smooth, ciliated at the margin. Segments of the calyx linear, acute; segments of the corolla cuneate, obcordate; tube hairy, erect, twice as long as the calyx.

DESCRIPTION, &c.—A dwarf plant, with numerous procumbent stems, each generally dividing into several branches at the extremity, and frequently sending out roots at the joints near the base. The flowers which terminate the branches can scarcely be said to form a panicle, there seldom being above two or four to each branch. The plant is a native of North America, whence it was introduced in 1829, and it flowers in May and June. It is propagated either by cuttings, or by dividing the root.

21.—PHLOX SUBULATA, *Lin.* THE AWL-LEAVED PHLOX.

ENGRAVINGS.—*Bot. Mag.* t. 411; and our *fig. 4*, in Pl. 73.

SPECIFIC CHARACTER.—Leaves subulate, hairy. Flowers terminal, sometimes twin.

DESCRIPTION, &c.—This is a very pretty little species, admirably adapted for rockwork. Its stems are procumbent, and when left to themselves either hang down in a very graceful manner, or trail on the ground. The flowers are produced in great abundance and are very pretty, as they are generally of a delicate pale pink, with a dark eye. The stems are also pink. The species is a native of Virginia, whence it was introduced in 1786. The flowers are produced in April or the beginning of May; and are easily injured by the cold winds which sometimes prevail at that season. It is always propagated by cuttings, as the root descends, and will not bear dividing.

22.—PHLOX NIVALIS, *Lodd.* THE SNOW-WHITE PHLOX.

ENGRAVINGS.—*Lodd. Bot. Cab.* t. 1780; *Swt. Brit. Flew. Gard.* t. 135; and our *fig. 5*, in *Pl. 73*.

SPECIFIC CHARACTER.—Stem suffruticose, very much branched, procumbent; branches ascending, thickly covered with short hairs; flowers

terminal, in threes. Leaves linear, fasciculate, recurved, ciliated at the margin. Calyx hairy; tube of the corolla twice as long as the calyx; segments of the corolla obovate, somewhat plicate.

DESCRIPTION, &c.—This is a very singular little plant, from the curious manner in which the branches are clothed with short recurved linear leaves, which give the plant a heath-like appearance when not in flower. The flowers are large, and of a snowy white. They are produced in great abundance, and look exceedingly well on rockwork. The plant is a native of Carolina, whence it was introduced in 1820. It should be grown in sand or peat, and it is propagated by cuttings.

23.—PHLOX SETACEA, *Lin.* THE BRISTLED-LEAVED PHLOX.

ENGRAVINGS.—*Bot. Mag.* t. 415; and our *fig. 3*, in *Pl. 73*.

SPECIFIC CHARACTER.—Leaves bristly, very smooth. Flowers solitary.

DESCRIPTION, &c.—This is a very handsome species, from the large size and bright colour of the flowers. The stems are at first procumbent; but they are ascending at the tip. The species is nearly allied to *P. subulata*, and requires the same treatment. It is a native of Carolina, and was introduced in 1788. It flowers in April and May, and it is propagated by cuttings. It is rather tender, and requires protection during severe winters.

CHAPTER XXXVI.

CONVOLVULACEÆ.

CHARACTER OF THE ORDER.—Calyx of five-sepals; sepals permanent, equal or unequal, disposed in one, two, or three series, often enlarged round the fruit. Corolla monopetalous, hypogynous, regular, tubular, campanulate or funnel-shaped; having the limb sometimes of five plaits, and sometimes of five lobes, which are twisted in aestivation. Stamens five, opposite the sepals, and therefore alternating with the lobes or plaits of the corolla, inserted more or less towards the bottom of the corolla; filaments usually unequal, dilated at the base, sometimes villous, naked, or furnished with scales, usually inclosed, rarely exerted; anthers long, usually sagittate, and adnate at the base, often twisted afterwards. Nectarium or hypogynous disk annular, surrounding the ovarium in most of the species, more or less showy.

Ovarium usually simple, two-four celled, rarely almost one-celled, or altogether one-celled: sometimes the ovarium is double or quadruple; in each cell there is one or two erect ovula. Style usually simple, entire, or more or less deeply cleft; rarely two. Stigmas acute, flattened or globose; in those with the simple style two-lobed. Fruit a capsule or a dry berry, one-four-celled; cells one, two-seeded. Capsule usually dehiscent valvately, rarely transversely. Seeds usually rounded on one side, and flattened on the other, inserted by the base, glabrous or villous; having the testa usually black and hard. Albumen mucilaginous. Cotyledons foliaceous and corrugated. Radicle incurved, inferior. (*G. Don.*)

DESCRIPTION, &c.—Most of the plants belonging to the order Convolvulaceæ are herbaceous, either annuals or perennials; occasionally becoming shrubby near the base, but very rarely having a woody stem. The stems are generally twining or creeping, and very seldom erect. The roots are frequently tuberous, and used in medicine; and all the plants abound in a milky, acrid juice. The flowers are generally very showy, and the leaves simple and alternate. These plants are found in almost every part of the world. The name of Convolvulus, from which that of the order is derived, signifies to entwine; and refers to the habit of growth of the species.



1 *Convolvulus sepium Americanus*. — 2 *Convolvulus reniformis*. — 3 *Convolvulus bryoniaefolia*.
4 *Ipomoea pandurata*. — 5 *Ipomoea sagittifolia*.



GENUS I.

CONVOLVULUS, *Lin.* THE BIND-WEED.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx of five sepals. Corolla campanulate. Style one; stigmas two, linear-cylindrical, often revolute. Ovarium two-celled, four-ovulate. Capsule two-celled. (*G. Don*).

DESCRIPTION, &c.—The plants commonly called Convolvulus were divided into the two genera, Convolvulus and Ipomœa, by Linnæus, principally on account of the shape of the lobes of the stigma, which in Convolvulus are slender and quite distinct, while in Ipomœa they form a globose head. Modern botanists have made several other genera out of the old genus Convolvulus, the principal of which, are:—Calystegia, from two Greek words, signifying a covered calyx, in allusion to two large bracts which inclose the flower; and Pharbitis, which is said to signify, highly-coloured, and which is distinguished by the capsule having three or four cells instead of two. The first of these genera includes the common bind-weed of the hedges, and the allied species; and the second, the major Convolvulus and other species with brilliantly-coloured flowers. All the species described in the present work will be given under their Linnæan names of Convolvulus and Ipomœa.

1.—CONVOLVULUS CHINENSIS, *Ker.* THE CHINESE BIND-WEED.SYNONYME.—Convolvulus japonicus, *Banks.*

ENGRAVING.—Bot. Rec., t. 322.

SPECIFIC CHARACTER.—Stem twisted, nearly simple, angularly

striated. Leaves secund, fleshy, hastate. Peduncles solitary, fleshy, longer than the leaves.

DESCRIPTION, &c.—This is a very pretty little plant, with purplish crimson flowers, marked with a pale yellow star. The root is creeping, and spreads rapidly. The leaves are fleshy, halbert-shaped, and of a greyish green. The plant is well deserving of cultivation; the only objection to it being the short duration of its flowers, which open early in the morning and often fade before the middle of the day. It is a native of China, whence it was introduced in 1816.

2.—CONVOLVULUS SCAMMONIA, *Lin.* THE COMMON SCAMMONY.SYNONYMS.—*C. Syriacus*, *Tourn.*; *Scammonia Syriaca*, *Bauh.*

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d series, t. 173.

SPECIFIC CHARACTER.—Leaves sagittate or truncate. Peduncles cylindrical, three-flowered; bracts lanceolate, remote from the calyx.

DESCRIPTION, &c.—This species is remarkable for its long, fusiform root, which abounds in an acrid, milky juice, and is used in medicine. The stems are numerous, and generally grow from ten to fifteen feet high, twining themselves round any object they can meet with, that will afford them support. The flowers are large and white, greatly resembling those of the common bind-weed of the hedges, but produced in much greater abundance. The species is perfectly hardy, and continues to flower till late in the autumn. It is generally increased by seeds, which it ripens freely. It is a native of the Levant, and was introduced before 1596.

3.—CONVOLVULUS BRYONIFOLIUS, *Sims.* THE BRYONY-LEAVED CONVULVULUS.ENGRAVINGS.—Bot. Mag., t. 943; and our *fig. 3*, in Pl. 74.

SPECIFIC CHARACTER.—Leaves seven-lobed, palmate, hispid; middle lobes sinuated. Peduncles axillary, very long, articulated. Flowers solitary

DESCRIPTION, &c.—This very beautiful little plant is of a dark rose colour. The leaves are hairy on both sides; and though they vary considerably in shape, they are generally divided into seven unequal lobes, of which the central one is much the largest. The petioles are generally as long as the leaves, and channelled on the upper

side. The peduncles of the flowers are also very long, and spring from the axils of the leaves, being jointed or articulated with the stem. It is a native of China, whence it was introduced in 1802. It is quite hardy in the open border, flowering from June till August, and perfecting its seeds in the autumn.

4.—CONVOLVULUS ALTHÆOIDES, *Lin.* THE MARSH-MALLOW-LIKE CONVULVULUS.

SYNONYMS.—*C. argenteus*, *Bauh.*; *C. Althæifolius*, *Clus.*; *Pa-*
paver cornutum, *Ger.*; Silky-leaved Convolvulus.

ENGRAVING.—*Bot. Mag.*, t. 359.

SPECIFIC CHARACTER.—Lower leaves cordate, sinuated, silky; upper
ones deeply cut; lobes linear, spreading.

DESCRIPTION, &c.—This is a most elegant plant, remarkable for the silvery whiteness of its leaves, and its beautiful rose-coloured flowers. It is a native of the south of Europe, being found in great abundance on the mountains of Naples, and of Spain and Portugal. It was introduced in 1656. It flowers in June and July, and is increased by dividing its stoloniferous roots, as it seldom ripens its seed in this country. It requires a slight protection during very severe winters.

5.—CONVOLVULUS AMERICANUS. THE AMERICAN CONVULVULUS.

SYNONYMS.—*C. sepium*, *var. Americanus*, *Sims*; *Calystegia in-*
flata, *Desf.*; the American Bear-bind.

ENGRAVINGS.—*Bot. Mag.*, t. 732; and our *fig. 1*, in *Pl. 74*.

SPECIFIC CHARACTER.—Leaves sagittate; peduncles quadrangular;
one-flowered; bracts cordate, shrouding the calyx.

DESCRIPTION, &c.—This very beautiful plant is nearly allied to the common great bind-weed, or large white convolvulus of the hedges. It is, however, much handsomer, the leaves being larger, and the flowers of a deep rose-colour. It is a native of North America, whence it was introduced about 1750; and it is quite hardy in British gardens, flowering abundantly, and retaining its flowers much longer than the common wild plant, which it so nearly resembles. The near approach of the bracts to the calyx, mark it as of the modern genus, *Calystegia*, which is distinguished by this peculiarity. This species of *Convolvulus* produces a very good effect, when trained to trellis-work; and there is a very striking instance of this in the garden of the Dowager Duchess of Bedford, at Camden Hill.

6.—CONVOLVULUS RENIFORMIS, *Spreng.* THE KIDNEY-LEAVED CONVULVULUS.

SYNONYME.—*Calystegia reniformis*, *R. Br.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 181; and our *fig. 2*,
in *Pl. 74*.

SPECIFIC CHARACTER.—Stem angularly branched, elongated, pro-
strate; leaves kidney-shaped, fleshy; peduncles round; bracts cor-
date, emarginate, close to the calyx. Root succulent, creeping.

DESCRIPTION, &c.—This is a pretty little species, very desirable for rockwork or covering a bank, as its stems and branches lie flat on the ground, and are not only very numerous, but extend to a great length. The species is a native of New Holland, whence it was introduced in 1822. It is easily propagated by dividing the roots; but it requires protection when the winter happens to be severe.

7.—CONVOLVULUS DAHURICUS, *W. Herb.* THE DAURIAN CONVULVULUS.

SYNONYME.—*Calystegia daurica*, *R. Br.*

ENGRAVING.—*Bot. Mag.*, t. 2609.

SPECIFIC CHARACTER.—Root creeping; stem tomentose; leaves
oblong, cordate, glabrous, but with a soft tomentum on the margin and

nerves of the under surface. Peduncles axillary, one-flowered, tomen-
tose; bracts ovate, close to the calyx. Segments of the calyx lance-
olate, acute, outer two broader than the others. Style longer than
the stamens.

DESCRIPTION, &c.—A pretty little plant, with pink flowers and cordate leaves. A native of Siberia, whence it was introduced in 1820. It is quite hardy in British gardens, and it is propagated either by seeds, or by

dividing its creeping, fleshy roots. All the species of this habit of growth are apt to become troublesome, particularly in small gardens, from the rapidity with which they spread through a border, their roots taking firm hold of the soil, and destroying those of every other plant. To avoid this inconvenience, all the species with creeping roots do best cultivated in pots, sunk in the ground.

OTHER SPECIES OF CONVULVULUS.

These are numerous, but only a few of them are cultivated in British gardens, and they differ very slightly from those that have been already described.

GENUS II.

IPOMŒA, *Lin.* THE IPOMŒA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx of five sepals. Corolla campanulate. Ovarium two-celled; cells two-seeded. Capsule two-celled; cells Stamens inclosed. Style one; stigma two-lobed; lobes capitate. two-seeded. (*G. Don.*)

DESCRIPTION, &c.—It has been already mentioned that the plants composing the genus *Ipomœa* are distinguished from those belonging to *Convolvulus* by the capitate lobes of the stigma. By far the greater number of the species require a stove in England; and even some of those which will flower in the open air during summer, are killed by the first frost in winter. The flowers are all exceedingly beautiful, but they are of short duration. The word *Ipomœa* signifies “like the *Convolvulus*,” from the great resemblance between the flowers of the two genera.

1.—IPOMŒA PANDURATA, *Lin.* THE POTATO VINE.

SYNONYMES.—*Convolvulus panduratus*, *Michx.*; *C. candicans*, *Sol.*; Tennessee Bind-weed.

ENGRAVINGS.—*Bot. Reg.*, t. 588; *Bot. Mag.*, t. 1603; and our *fig. 4*, in *Pl. 74*.

SPECIFIC CHARACTER.—Leaves cordate or panduriform, acuminate, entire; peduncles many-flowered; segments of the calyx obtusely nerved.

DESCRIPTION, &c.—This species varies very much in its leaves and flowers; but it is always distinguished by its tuberos cylindrical root, which is generally about the thickness of a man’s wrist, two or three feet long, and furnished with eyes like a potato; and hence its American name of “potato vine.” The root, however, is not eatable, being extremely bitter; and, indeed, it is used in medicine as a kind of jalap. The stem is twining, and the leaves vary very much in shape; those near the root being large and cordate, and those of the stem being frequently lobed, so as to become panduriform, or fiddle-shaped. The flowers are produced in panicles, and vary considerably in size; but the limb of the corolla is always white, and the tube dark, though the latter varies from a pink to deep crimson or purple. The species is a native of North America, from Canada to Carolina, and it was introduced in 1732. When grown from imported roots, it sometimes appears quite hardy, and sometimes tender, according to the part of America from which the tubers were brought. It is propagated by dividing the tubers, as every eye will grow, like those of a potato. Even when the stems are killed down to the ground, fresh shoots will generally rise in spring from the eyes of the tubers. A variety of this species has been found in America with double flowers, a very rare circumstance in any plant belonging to the order *Convolvulacæ*.

2.—*IPOMŒA SAGITTIFOLIA*, Ker. THE SAGITTATE-LEAVED IPOMŒA.

SYNONYMES.—*Convolvulus sagittifolius*, Michx.; *C. speciosus*, Walt.; *C. csroliensis*, Catesb.; Catesby's *Ipomœa*.

ENGRAVINGS.—Bot. Reg., t. 437; and our fig. 5, in Plato 74.

SPECIFIC CHARACTER.—Stem twining, very smooth; leaves sagittate-oblong, deeply sinuated; auricles subacuminate; peducles one-flowered; segments of the calyx rotundately oval.

DESCRIPTION, &c.—This species is remarkable for the shape of its leaves, which are decidedly sagittate, that is, resembling the head of an arrow. The species is a native of Carolina, where it is said to grow wild along the sides of salt waters, that is, among bushes and saline plants. It is, consequently, very difficult to cultivate in this country. It was introduced about the year 1818. In America, the Indians are said to use the juice of this plant to preserve themselves from the bite of the rattle-snake. This species is often confounded with *Ipomœa sagittata*, a native of the South of Europe, with rose-coloured flowers, which was introduced in 1826; but this latter species is said not to have tuberous roots like the American kind, and to be much more easy of cultivation. It is, however, rarely met with in British gardens.

OTHER SPECIES OF IPOMŒA.

These are either too tender for the open air in British gardens, or too shrubby for the present work.

GENUS III.

CALYSTEGIA, R. Br. THE BINDWEED.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx six-parted, inclosed within two foliaceous bracteas. Corolla campanulate, five-plicate. Style one; stigma two-lobed; lobes terete, or globose. Ovary, two-celled; cells, two-ovulate. Capsule one-celled, from the shortness of the dissepiment.—(G. Don.)

DESCRIPTION, &c.—This genus was separated from the genus *Convolvulus*, partly on account of the two leafy bracts below the calyx; and partly from a slight difference in the seed vessel. The *Anemone*, *Convolvulus*, and some other species which we have described in the genus *Convolvulus*, as they are generally known by that name, really belong to this genus; and we have introduced it here on account of the new Chinese species, which has never been called any thing but *Calystegia*.

1.—*CALYSTEGIA PUBESCENS*, Lindl. THE DOWNY CALYSTEGIA.

ENGRAVING.—Part. Mag. of Bot. vol. xiii. p. 243.

SPECIFIC CHARACTER.—Plant perennial. Stems herbaceous, twiolog, pubescent. Leaves oblong, hastate, rather pubescent,

acute, with angular lobes at the base. Peduncles unifloral, with numerous angulosities. Bracts ovate, ciliate, with reflexed margins.—(Lindley.)

DESCRIPTION, &c.—This plant was introduced from China, by Mr. Fortune in 1844. Its flowers are very interesting, as they are the only ones in the whole order that are double. They are nearly white, very slightly tinged with pink, and they are produced in great abundance nearly all the summer.

CHAPTER XXXVII.

SOLANACEÆ.

CHARACTER OF THE ORDER.—Calyx usually five-cleft below, and remaining on the fruit. Corolla monopetalous, and beneath the pistil; limb generally five-cleft; plicate in æstivation. Stamens epipetalous; equal in number to the segments of the corolla. Embryo much curved. Fruit baccate. Placentas usually adnate to the dissepiment. Seeds numerous.

DESCRIPTION, &c.—The plants belonging to this order are easily known by their flowers and their habit of growth. The flowers are generally regular, with the limb of the corolla divided into five equal segments, each of which is folded down the middle, when the flower is in the bud; this fold is very conspicuous in some of the kinds of tobacco, and in the White Petunia. The stamens are equal in size, and generally form a projecting mass in the centre of the flower, as in the flowers of the common potato. Nearly all the plants belonging to this order have showy flowers, but a coarse foliage, which has always a disagreeable smell; and nearly all are more or less poisonous, though they may be deprived of their deleterious qualities by being cooked. They are chiefly natives of North and South America.

GENUS I.

SOLANUM, *Tourn.* THE NIGHTSHADE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx generally five-cleft. Corolla rotate or campanulate, generally five-cleft. Anthers connivent, opening by pores at the apex. Berry roundish, usually two-celled.

DESCRIPTION, &c.—The plants belonging to this genus are of various kinds; some are herbaceous, some shrubs; some are prickly, and others perfectly smooth; and the leaves and flowers vary considerably in form, colour, and texture. There is, however, always a strong family likeness in the flowers, which renders it easy to recognise any species of this genus at first sight. The derivation of the word Solanum is not exactly known; some persons say it is from *sol*, the sun; others, from *solor*, to comfort, from the narcotic qualities of some of the species; and others, from *sularium*, from *sus*, swine, potatoes being formerly only used to feed swine. The word was used by Pliny, but Tournefort was the first systematic botanist who adopted it.

1.—SOLANUM ETUBEROSUM, *Lindl.* THE TUBERLESS NIGHTSHADE.

ENGRAVINGS.—Bot. Reg., t. 1712.

SPECIFIC CHARACTER.—Rhizoma fleshy, but without tubers; leaflets unequal, complicated, undulated, approximate, alternate ones very small. Pedicels articulated. Calyx and corolla five-angled, glabrous.

DESCRIPTION, &c.—This plant bears considerable resemblance to the common potato, both in its habit of growth and its flowers; but its flowers are larger, and it has no tubers. The flower-stalks are also smooth and shining, instead of having "the rough dull appearance" of those of the potato. The plant is a native of Chili, whence it was introduced in 1833, and it will grow in any common garden soil. It flowers from July to October, and is propagated by dividing the roots, or rather, the underground stems. *S. Commersoni* introduced from Monte Video about 1822, is supposed to be a variety of this species, or, at any rate, nearly allied to it. It is now lost in British gardens. *S. Commersoni*, and a white-flowered variety of the common potato, are both figured in the Fifth vol. of the Hort. Trans.; the latter is very ornamental.

2.—*SOLANUM LACINIATUM*, *Ait.* THE CUT-LEAVED NIGHTSHADE.

SYNONYMS.—*S. pinnatifidum*, *Lam.*; *S. aviculare*, *Pers.*; *S. reclinatum*, *Hort.*

ENGRAVING.—*Bot. Mag.*, t. 349.

SPECIFIC CHARACTER.—Quite smooth. Leaves pinnatifid, segments linear-lanceolate. Berry oval.

DESCRIPTION, &c.—This is a very handsome species, and one which would scarcely be known for a *Solanum*, both from the anthers in the flowers being separated, and from the leaves, which are pinnatifid. The berries are of the shape of small plums, and their pulp, which is sweet and resembles that of a fig, is eatable. The species is a native of New Zealand, and was introduced in 1772. When it was first brought to England it was kept in a stove; it was afterwards placed in a greenhouse; and it was finally found to be quite hardy, and even to ripen its fruit thoroughly in the open air. It flowers nearly all the summer, and it is easily propagated either by cuttings or seeds.

OTHER SPECIES OF *SOLANUM*.*S. QUERCIFOLIUM*, *Lin.*

The leaves resemble those of the oak; and the flowers are violet-coloured, with two green marks at the base of each segment of the corolla. A native of Peru; introduced before 1787.

S. RADICANS, *Lin. fl.*

A native of Peru; introduced in 1771, with small violet-coloured flowers, and red berries about the size of a pea.

S. ZUCCAGINANUM, *Dun.*

A very handsome species, sometimes called the warted *Solanum*, much cultivated in the gardens of Florence and Montpellier. The plant is of a bright green, but it is covered all over with minute crystalline warts. The flowers are white, and the berries cherry-shaped, and of a bright red when ripe. It was introduced in 1823.

GENUS II.

PHYSALIS, *Lin.* THE WINTER CHERRY.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-toothed; corolla campanulately rotate, five-lobed, lobes plicate; anthers connivent, opening length-ways; stigma capitate; berry two-celled, many-seeded, covered entirely with the inflated calyx, which remains on till the seeds are ripe.

DESCRIPTION, &c.—All the species are remarkable for the inflated bladder-like calyx, which incloses and entirely conceals the fruit, and this gives rise to the botanic name of the genus, the word *Physa* signifying a bladder. A very beautiful preparation may be made by macerating the inflated calyx of the common winter cherry, so as to leave only the network of veins remaining; and this has a striking effect, as the bright red fruit shines through the network like a large coral or cornelian bead. A preparation of this kind may be easily made by soaking the calyx inclosing the fruit for about six weeks in water, without changing the water, and then washing the decayed pulp away by shaking the calyx gently in clear water. All that is necessary is patience to separate the pulpy matter carefully from the fibrous part, so as to leave the latter quite clear and yet unbroken. The fruit is slightly acid and pleasant to eat, not possessing any unwholesome properties, even though uncooked, and in this respect being quite different from that of the other genera of the order. The species are mostly natives of America.

1.—*PHYSALIS VISCOSA*, *Lin.* THE CLAMMY WINTER CHERRY.

SYNONYMES.—*P. pennsylvanica*, *Pursh.*; *Alkekengi Bonariensis*,
Dill.

ENGRAVINGS.—*Bot. Mag.*, t. 2625.

SPECIFIC CHARACTER.—Leaves twin, repand, obtuse, submentous.
Stem herbaceous, panicled in the upper part.

DESCRIPTION, &c.—This plant has a creeping under-ground stem, which sends up suckers all round the plant. The stem branches in an angular manner, and the branches are square with sharp angles. The leaves, which are generally produced in pairs, are commonly waved at the edges, and covered with a soft down on the under side. The flowers are solitary, and not remarkable for their beauty; the fruit is slightly acid and good to eat. The species is a native of Brazil, and also of the whole of North America, whence it was introduced in 1699. It is of the easiest culture, and indeed, when once planted in any common garden soil, it spreads so fast, by means of its numerous suckers, as to be quite troublesome. The berries of the species are orange, but there is a variety the berries of which are not larger than those of a pea, and of a bright red.

2.—*PHYSALIS ALKEKENGII*, *Lin.* THE ALKEKENGII, OR COMMON WINTER CHERRY.

SYNONYMES.—*P. balicacabum*, *Scop.*; *Alkekengi officinarum*,
Tourn.

SPECIFIC CHARACTER.—The whole plant covered with a soft down,

consisting of simple hairs. Root creeping; stem almost simple; leaves ovate, deltoid, acuminate, repand; flowers spotless; calyx ovate, coloured.

DESCRIPTION, &c.—The flowers of this species are rather handsome, and the calyx inclosing the fruit is of a reddish yellow, with rather strongly marked ribs. The fruit itself is of a brilliant scarlet, and pleasantly acid, though after it has been eaten some time it leaves a bitter taste in the mouth. It was formerly used in medicine, and is still considered wholesome, particularly in dropsical complaints. In some parts of Germany it is used as a substitute for gooseberries in preserves or tarts. It is found wild in many parts of Europe, always growing on the exposed part of hills; and it is said to have been found also in Japan. It was known to the ancients, and is spoken of by Dioscorides. It was introduced into England before 1548, as it is mentioned by Dr. Turner, who wrote in that year, as good in medicine.

3.—*PHYSALIS PERUVIANA*, *Nees.* THE PERUVIAN WINTER CHERRY, OR CAPE GOOSEBERRY.

SYNONYMES.—*P. esculenta*, *Willd.*; *P. tomentosa*, *Medic.*; *P. pubescens*, *Lin.*; *P. tuberosa*, *Zucc.*; *P. latifolia*, *Roem. et Schult.*;
P. Barbadosensis, *Lam.*; *P. edulis*, *Sims.*

ENGRAVING.—*Bot. Mag.*, t. 1068.

SPECIFIC CHARACTER.—Plant covered with pubescent hairs. Stem erect, branched a little. Leaves cordate, acuminate. Calyx ovate.

DESCRIPTION, &c.—This is a very handsome species. The leaves are covered with a soft grayish down; the flowers are yellow, and are stained with a rich dark-brown spot at the base; and its calyx, which is very large, is strongly marked with brown ribs. The berry is yellow, and it is not only agreeable to the taste, but it has a very agreeable fragrance. The berries are considered very wholesome, and are frequently used even in England as a substitute for gooseberries in tarts; the plants being cultivated, occasionally, solely for their fruit. In other places they are cultivated in gardens as ornamental plants. The species is a native of South America the East Indies, New Holland, and Madeira; it was introduced in 1772, and it requires a slight protection during winter. All the other species of Winter Cherry common in British gardens are annuals.

GENUS III.

MANDRAGORA, *Tourn.* THE MANDRAKE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER. — Calyx turbinate, five-angled, five-cleft. Corolla campanulate, five-cleft. Stamens five. Filaments dilated at the base, and connivent; but filiform and divaricate at the apex. Ovarium furnished with a circular gland round the base, which is

drawn out into two horns. Stigma capitate having the receptacles rather prominent inside. Seeds many, reniform, disposed in a simple series. (*G. Don*).

DESCRIPTION, &c.—The Mandrake was celebrated in ancient times as having been employed by witches in their incantations, and many wild tales were told of it, and once firmly believed.

The fatal Mandrake is, I ween,
As strange a plant as e'er was seen:
Although it springs from mother earth,
Wild and unholy was its birth.

It grows from seed no eye shall see—
The fat that drops from the gallows-tree.
And screams ring from its quivering leaves,
When human hand its blossoms reeve.

The fictions related of this plant appear to have arisen from the shape of the roots, which bear some resemblance to the human form; and the bad character it has so long borne probably took its origin from its being poisonous, and one of those poisons which are difficult to detect on a *post-mortem* examination of the body. The name of Mandragora is said to be derived from two Greek words, signifying, cruel to oxen; and the English name of Mandrake is either derived from the Greek name, or alludes to the supposed half-human nature of the plant. The appearance of the Mandrake is rather singular; the leaves are very large, and broad, rising from the root; the plant has no proper stem, and the flower-stalks are always shorter than the leaves; the flowers are produced singly, with distinct segments to the corolla, and stamens which are widely apart, instead of having their anthers close together, as in the genus *Solanum*. The roots are large and fleshy, and they are usually forked, so as to bear some resemblance to human legs.

1.—MANDRAGORA OFFICINARUM, *Lin.* THE COMMON MANDRAKE.

SYNONYMS.—*M. officinalis*, *Mill.*; *M. vernalis*, *Spring.*; *M. acaulis*, *Gartn.*; *Atropa Mandragora*, *Ball.*

SPECIFIC CHARACTER.—Leaves oblong, lanceolate and ovate, acute,

a foot long, undulated, entire; at first erect, then spreading. Root and flowers white. Segments of the calyx lanceolate, linear, acuminate; segments of the corolla acute. (*G. Don*.)

DESCRIPTION, &c.—This is the plant that is fabled to grow under a gallows, from the decay of dead bodies hanging there; and that is said to utter shrieks and groans when its leaves and flowers are gathered, or when it is pulled up. Witches were also said to hold a plant of this mandrake in their hands while muttering their incantations. It was said to be so poisonous as to kill those who gathered it: and in the old herbals it is gravely advised to tie a dog to any plant of it that is to be pulled up, to avoid the danger of touching it. The flower is not remarkable for its beauty. It is of a pale blue. The fruit is as large as a nutmeg, and of a yellowish green when ripe. The root is very fleshy, usually white, and frequently from three to four feet long. Its only medicinal qualities are those of an opiate, and if taken in large quantities it generally proves fatal.

2.—MANDRAGORA PRÆCOX, *Swt.* THE EARLY-FLOWERING MANDRAKE.

SYNONYMS.—*Atropa Mandragora*, *B. Lam.*; *A. M. femina*, *Bull.*; *M. officinalis*, *B. Dec*

ENGRAVING.—*Swt. Brit. Flow. Gard.*, t. 198.

SPECIFIC CHARACTER.—Leaves lanceolate, oblong, obtuse, undulated,

bullately wrinkled, villosely pubescent, rising at the same time as the flowers; segments of the calyx lanceolate, acute, keeled; segments of the corolla reflexed, spreading.

DESCRIPTION, &c.—This is a very singular little plant, the root is very large and fleshy, dividing into two portions a little below the ground. The leaves rise in a mass directly from the root, forming a sort of cup, in



1. *Verbascum formosum*. — 2. *Verbascum phaniceum*. — 3. *Verbascum capreum*.
 4. *Celvia sublanata*. — 5. *Raymondia pyrenaica*.

which is placed a tuft or bundle of flowers, which grow with the leaves, and expand about the time the latter have attained their full growth. The flowers are of a yellowish-brown tinged with blue, and they are covered with a dense wool. The species is a native of Switzerland, whence it was introduced in 1819. It flowers early in March, and only grows about six inches high. The plants are quite hardy, but they require some care, as the roots are very liable to rot in winter. The species is generally propagated by seeds, which ripen in abundance.

3.—MANDRAGORA AUTUMNALIS, Bertol. THE AUTUMN-FLOWERING MANDRAKE.

SYNONYME.—*Atropa mandragora*, Sib. et Smith.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d ser., t. 325.

SPECIFIC CHARACTER.—Leaves oblong, very hairy; calyx covered with dense woolly hairs; segments lanceolate, acuminate; segments of the corolla elliptic, obtuse; berry oblong, mucronulate.

DESCRIPTION, &c.—The root of this species is long and thick, forked, and generally of an ash colour. The leaves are very large, of a dark green, very much wrinkled, and furnished with numerous warty bristles; they are also of a thick substance, and undulated at the margins. The flowers are of a dark violet; they are large, and are produced one on each stalk; the flower-stalks being of a bright pink, and growing four or five together. In the centre of each flower is a tuft of white, woolly hairs, which entirely fills up the throat of the corolla. The berry is oblong, and of a bright orange. The species is a native of the south of Europe, whence it was introduced before 1548. Like all the other species, it thrives best in a rich deep soil, and it can only be increased by seeds, which hang on all the winter, and do not ripen till the spring. This species is supposed to be the Mandrake mentioned in the Scriptures.

GENUS IV.

VERBASCUM, *Lin.* THE MULLEIN.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted; corolla rotate or funnel-shaped; stamens five, all bearing anthers, and usually bearded; the anthers lunate, that is, shaped like a half-moon; capsule with two valves, the valves bending in.

DESCRIPTION, &c.—All the species of *Verbascum* are strong, vigorous-growing plants, with broad, thick, woolly leaves, which are largest in size near the root. The flowers are disposed in long terminal racemes, and they are extremely showy. The whole plant, except the flowers, is generally covered with a kind of wool, which makes the leaves feel soft and thick to the touch, and hence one of the popular names of the British species is the flannel plant. The name of *Verbascum* is said to have been originally *Barbascum*, in allusion to the bearded filaments of the stamens. There are numerous species of *Verbascum*, but only a few of the most ornamental are common in British gardens. Most of the species are natives of Europe.

1.—VERBASCUM PHŒNICEUM, *Lin.* THE PURPLE VERBASCUM.

SYNONYMES.—*Blattaria perennis*, *Moris.*; *B. purpurea*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.*, t. 885; and our *fig. 2*, in *Pl. 75*.

SPECIFIC CHARACTER.—Leaves ovate, pubescent beneath; stem

nearly naked; raceme terminal, elongated; pedicels of the flowers solitary, spreading, much longer than the bractees.

DESCRIPTION, &c.—This is a well-known and very handsome plant, which is quite hardy and continues in flower a long time; the flowers in the upper part of the raceme opening gradually as those of the lower part

decay. No plant can require less care in its culture, though its stems are very apt to grow so long and weak as to require being tied to a stick to keep them erect. The species is a native of the south and east of Europe, whence it was introduced in 1796.

2.—*VERBASCUM CUPREUM*, *Sims*. THE COPPER-COLOURED MULLEIN.

ENGRAVINGS.—*Bot. Mag.*, t. 1226; and our *fig.* 3, in Pl. 75.

SPECIFIC CHARACTER.—Stem simple; leaves cordate-ovate, rugged, crenate, woolly below; peduncles with one bract, solitary.

DESCRIPTION, &c.—This species is a hardy biennial which flowers in July and August, and only requires the ordinary culture of plants of its kind. It is supposed to be a hybrid between *V. phœniceum* and *V. ovalifolium*; and it is remarkable, that when grown in the house, its flowers lose their copper colour, and become of a pale yellow, with a dark centre. It appears to have been raised about 1798. It grows from two to four feet high, and flowers from May till August.

3.—*VERBASCUM OVALIFOLIUM*, *Donn*. THE OVAL-LEAVED MULLEIN.

ENGRAVING.—*Bot. Mag.*, t. 1037.

SPECIFIC CHARACTER.—Stem erect, simple. Leaves oval, sessile; dentately crenate; smooth on the upper surface. Flowers spicate.

DESCRIPTION, &c.—This is a very handsome species, with large golden-yellow flowers, which are disposed in a crowded spike. The stamens are of a bright orange, and both the filaments and the moon-shaped anthers are bearded with a deep fringe. This species also differs from the preceding one in having three bracts to each flower instead of one. It is a native of Mount Caucasus, and was introduced in 1804. Like all the other species it is only propagated by seeds.

4.—*VERBASCUM FORMOSUM*, *Fisch*. THE HANDSOME VERBASCUM.

SYNONYMS.—*V. spectabile*, *Lenk.*; Fischer's Mullein.

ENGRAVINGS.—*Bot. Reg.*, t. 558; and our *fig.* 1, in Plate 75.

SPECIFIC CHARACTER.—Stem branching. Leaves woolly and white

below, but green and naked above; usually cordate, acuminate. Spike lax, tomentose. The two lower stamens bent down, and widely apart.

DESCRIPTION, &c.—This is a very handsome species, from the large size and brilliant colours of the flowers. It grows from two to four feet high, and flowers in July and August. It is a native of Caucasus, whence it was introduced in 1818.

OTHER SPECIES OF *VERBASCUM*.

These are numerous, but they are seldom seen in British gardens.

GENUS V.

CELSIA, *Lin*. THE *CELSIA*.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla rotate, five-lobed; stamens four, two much longer than the others, all bearded; anthers covered with a short, dense wool.

DESCRIPTION, &c.—All the plants belonging to this genus are herbaceous. The flowers are disposed in loose, terminal racemes, and are generally showy. There are very few species, and most of them require a slight protection during winter.

1.—*CELSIA SUBLANATA*, Jacq. THE WOOLLY CELSIA.

ENGRAVINGS.—Bot. Reg., t. 438; and our *fig.* 4, in Plate 75.

SPECIFIC CHARACTER.—The whole plant is covered with a thick, cotteny wool. Leaves oval-oblong, obtuse, crenate, wrinkled, and

sometimes winged with one or two pairs of very small leaflets, which are distant from the main one. Stamens hairy, and bearded at the base.

DESCRIPTION, &c.—The flowers of this species of *Celsia* bear considerable resemblance to those of some kinds of *Verbascum*, but they are easily distinguished by two of the stamens being longer than the other two, and by the anthers not being crescent-shaped. The present plant grows about two feet high, and is quite hardy. The flowers are fragrant. The native country of this species is unknown, but it is supposed to have been introduced about 1818.

2.—*CELSIA ARCTURUS*, Vahl. THE BEAR'S-TAIL CELSIA.

SYNONYMES.—*Verbascum arcturus*, Lin.; *V. humile*, Bauh.; *Arcturus creticus*, Clus.; the scollop-leaved *Celsia*.
ENGRAVING.—Bot. Mag., t. 1962.

SPECIFIC CHARACTER.—Radical leaves lyrate; stem leaves oblong. Pedicels much longer than the bracts. Segments of the calyx linear, entire.

DESCRIPTION, &c.—This plant was first described by Bellus, a physician living at Cydonia, in the Island of Candia, who found it growing in that island about the beginning of the last century. It was introduced in 1780; but it has since been found growing wild in New South Wales. It is a very handsome plant, growing from four to six feet high, with large golden-yellow flowers, the filaments of the stamens of which are fringed with long, dark-purple hairs. It is quite hardy, and is generally propagated by seeds, as it is a biennial, or lasts, at most, only about three years. The specific name, *arcturus*, signifies a bear's tail, and alludes to the long and thick raceme of flowers.

3.—*CELSIA CRETICA*, Lin. THE CRETAN, OR LARGE-FLOWERED CELSIA.

ENGRAVING.—Bot. Mag. t. 964.

SPECIFIC CHARACTER.—Radical leaves sinuate, on long petioles; upper leaves cordate, stem clasping. Lower filaments smooth.

DESCRIPTION, &c.—This is, perhaps, the most showy of all the species, on account of the large size of its golden-yellow flowers, which are marked with two reddish-brown spots at the base of the two upper segments. The plant generally grows five or six feet high, and its stem and leaves are covered with whitish hairs. It is a native of the north of Africa and Candia, whence it was introduced in 1752. It is a biennial, and requires protection during winter.

GENUS VI.

RAMONDIA, Rich. THE RAMONDIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Plant stemless. Calyx campanulate, five-parted; corolla rotate, five-lobed; lobes somewhat unequal, and hairy at the base. Stamens approximate; anthers perforated at the apex;

stigma rounded. Capsule one-celled, but two-valved, with the valves bent in at the margins and two parietal placentas; many-seeded.

DESCRIPTION, &c.—This genus consists of only one species, which was formerly considered to belong to the genus *Verbascum*, but which is so very different from that genus, both in its habit of growth and its flowers, that we can hardly conceive how it could ever have been placed there. It has no stem, and the anthers are gathered together in the centre of the flower, as in the genus *Solanum*. The name of *Ramondia* was given in honour of M. Ramond, a French Botanist, who travelled in the Pyrenees about the year 1800, and published an account of his journey.

1.—RAMONDIA PYRENAICA, *Rich.* THE PYRENEAN RAMONDIA.

SYNONYMES.—*R. scapigera*, *Jaume St. Hil.*; *Verbascum Myconi*, *Lin.*; *Myconia boraginea*, *Lapeyr.*; *Chaixia Myconi*, *Lapeyr.*; *Cortusa alpina*, *Trew.*; *Auricula Ursi Myconi*, *Dalech.*; *Sanicula alpina*, *Bauh.*; Borage-leaved Mullein.

ENGRAVINGS.—*Bot. Mag.*, t. 236; and our *fig. 5*, in Pl. 75.

SPECIFIC CHARACTER.—Radical leaves ovate, deeply crenate, clothed with long reddish silky hairs on the under side, and white hairs above.

DESCRIPTION, &c.—This is a very pretty little plant, growing only about three or four inches high, and the flower-stalks springing from a dense mass of rough, dark green leaves. The general habit of growth of the plant very much resembles that of a primrose. It is quite hardy, and admirably suited to rock-work; but it will grow in the border, in any common soil that is not too warm and dry. It is propagated by dividing its roots in autumn. It begins to flower in May, and it will continue in blossom nearly all the summer. It is a native of the Pyrenees, whence it was introduced before 1640; as it is described by Parkinson, gardener to the Queen of Charles I., who wrote in that year, as the “Blew Beares Eares with Borage leaves.” The colour of the flowers, however, is not blue, or even purple; but a pinkish lilac.

CHAPTER XXXIX.

SCROPHULARINÆ.

CHARACTER OF THE ORDER.—Calyx four or five-parted, permanent; corolla monopetalous, hypogynous, deciduous, irregular, bilabiate, personate, or ringent, imbricate in æstivation; stamens usually four, didynamous, sometimes only two, and sometimes with the rudiment of

a fifth; ovarium two-celled; style one; stigma two-lobed, or undivided; fruit capsular, rarely baccate, two-celled, two and four valved; seeds small; albumen copious; embryo terete, erect, inclosed, straight; radicle inferior, looking to the umbilicus. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this order are of various habits and forms; but they nearly all bear a considerable resemblance in their flowers, which are either personate or ringent; that is, bearing more or less resemblance to the Snapdragon, which has a personate corolla, or to the Mimulus, the corolla of which is ringent, or gaping. Some species, however, have a tubular corolla, like that of the Foxglove. Notwithstanding these differences, however, there is a strong family likeness in the flowers of almost all the genera. They are all monopetalous and bilabiate, that is, the petals which form the corolla appear to be joined together, and the mouth of the flower has decidedly two lips, which differ in size, and generally also in shape. The leaves are also generally opposite, and much alike in the different genera. The species are natives of all parts of the world, and their qualities are as various as their forms. The name of the order is taken from the genus *Scrophularia*, in allusion to the supposed use of some of the plants in the cure of scrofula.

GENUS I.

DIGITALIS, *Fusch.* THE FOXGLOVE.

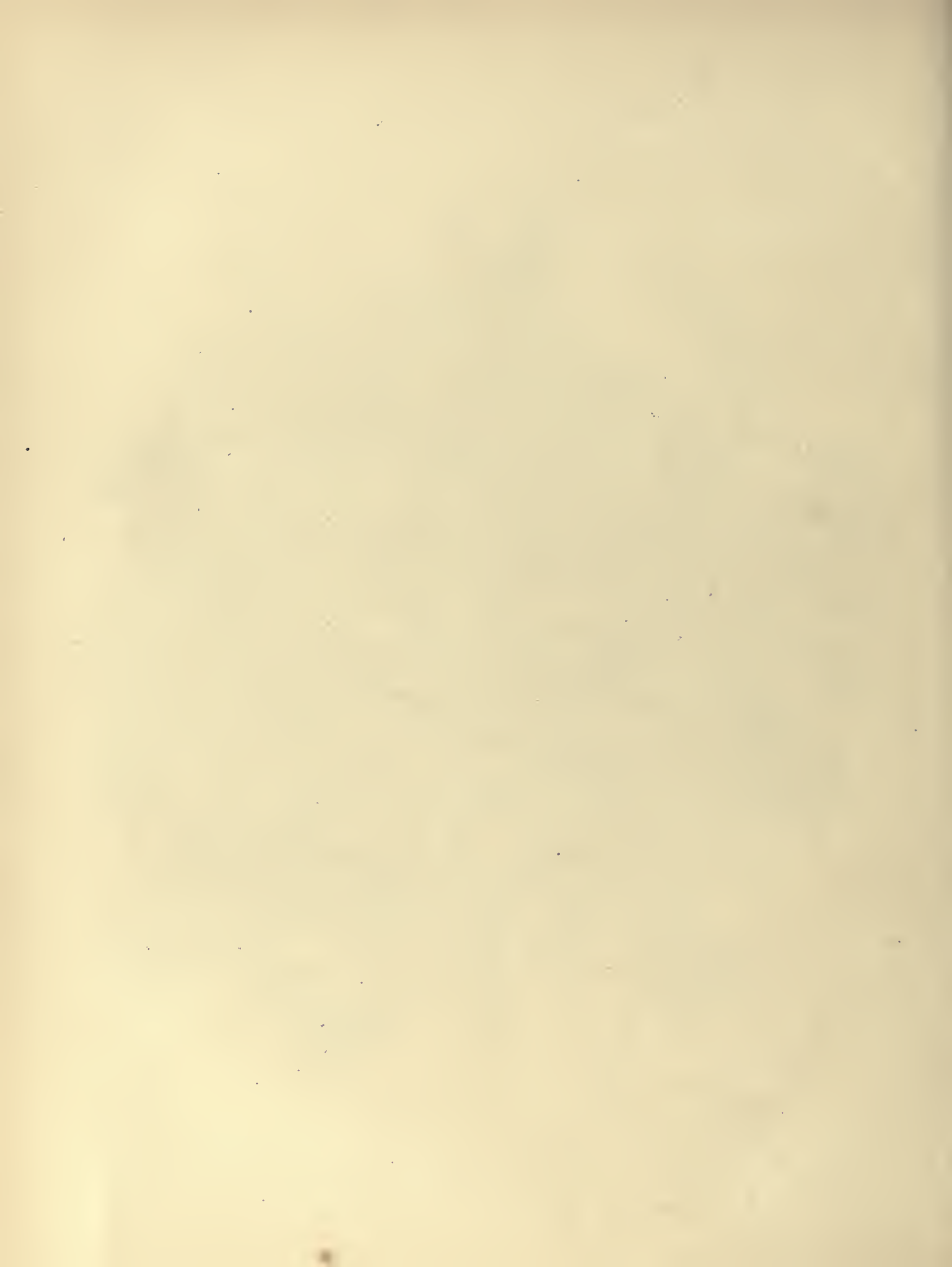
Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Corolla tubular, bilabiate, the lower lip the longest; limb obliquely four-lobed; stamens four, with a very slight rudiment of a fifth.

DESCRIPTION, &c.—This is a very large genus, but the flowers of all the species bear so much resemblance to each other in form, that they are easily recognised at first sight, notwithstanding the difference of colours which



1. *Digitalis Canariensis*.—2. *Digitalis ambigua*.—3. *Digitalis purpurea* var. *superba*.
 4. *Digitalis laciniata*.—5. *Digitalis lutea*.



is very striking, some being yellow, some purple, some scarlet, and some even white. The name of *Digitalis* is very appropriate, as it signifies the finger of a glove. The name of Foxglove does not appear to have been explained.

1.—DIGITALIS PURPUREA, *Fusch.* THE PURPLE OR COMMON FOXGLOVE.

ENGRAVINGS.—Woodville's *Med. Bot.*, t. 24; Stev. et Church *Med. Bot.*, t. 18; Paxton's *Mag. of Bot.*, vol. 10, p. 29; and our *fig. 3*, in Pl. 76.

SPECIFIC CHARACTER.—Leaves oblong, very rough, crenate; segments of the corolla ovate, oblong; peduncles straight, equal in length to the calyx.

DESCRIPTION, &c.—The common Foxglove is a well-known British plant, which has often a fine effect in forest scenery, from its showy flowers, and stately habit of growth. It grows wild in almost every part of Europe; but it has never yet been found in any part of North America or Australia. The variety *D. purpurea*, var. *superba*, is (see *fig. 3*, in pl. 76), highly ornamental, and is cultivated in gardens solely for its beauty. It will grow freely in any common garden-soil, though it appears to prefer a sandy loam. It was raised by Messrs. Young, of Epsom, about 1840. It continues in blossom for several months, and is propagated by cuttings, or dividing the root.

2.—DIGITALIS LACINIATA, *Lindl.* THE CUT-LEAVED FOXGLOVE.

ENGRAVINGS.—*Bot. Reg.*, t. 1201; and our *fig. 4*, in Pl. 76.

SPECIFIC CHARACTER.—Leaves lanceolate, acuminate, lacinated, glabrous; racemes nearly secund; corolla pubescent; segments ovate, fringed, always bracteate, much shorter than the pedicels.

DESCRIPTION, &c.—This is a very elegant species of Foxglove, extremely unlike the common kinds; the flowers are small, and of a pale yellow. They are also somewhat contracted at the mouth. The leaves are cut, or rather jagged, at the margin. It is a native of Malaga, where its seeds were collected on the mountains by Mr. Philip Barker Webb. It was introduced in 1826, and proves a hardy perennial in British gardens, where it is easily increased by division of the roots, and where it flowers in June and July.

3.—DIGITALIS LUTEA, *Lin.* THE YELLOW FOXGLOVE.

SYNONYMS.—*D. parviflora*, *All.*; *D. minor*, *Tourn.*

ENGRAVINGS.—*Bot. Reg.*, t. 251; and our *fig. 5*, in Pl. 76.

SPECIFIC CHARACTER.—Leaves lanceolate, toothed, glabrous;

racemes secund; segments of the corolla ovate, bearded; lower bractees longer than the flowers.

DESCRIPTION, &c.—This is a dwarf plant, with small flowers, and simple but angular stems. The flowers are of a very pale yellow, and they are disposed in dense racemes. The species is a very old inhabitant of our gardens, for it was introduced before 1629. It is found throughout the South of Europe. There are numerous varieties.

4.—DIGITALIS AMBIGUA, *Lin.* THE AMBIGUOUS, OR LARGE YELLOW FOXGLOVE.

SYNONYMS.—*D. grandiflora*, *All.*; *D. ocbroleuca*, *Jacq.*; *D. lutea*, *Matt.*; *D. major*, *Park.*

ENGRAVINGS.—*Bot. Reg.*, t. 64; and our *fig. 2*, in Pl. 76.

SPECIFIC CHARACTER.—Leaflets of the calyx lanceolate, unequal; corolla pubescent; helmet broad, raised, emarginate; segments of the lower lip moderately acute; leaves ovate-lanceolate, pubescent.

DESCRIPTION, &c.—This is a remarkably handsome plant, a native of Austria, Switzerland, and Germany; and also found occasionally in Siberia and Persia, but only in shady places. It was introduced before 1596, and is quite hardy in British gardens though it prefers a dry soil, and an open, airy situation. It may be propagated either by seed or by dividing the root. It is evidently nearly allied to the common Foxglove; but it is said not to possess any of the medicinal qualities for which the common Foxglove is so celebrated.

5.—DIGITALIS FERRUGINEA, *Ait.* THE IRON-COLOURED FOXGLOVE.

ENGRAVING.—Bot. Mag., t. 1828.

SPECIFIC CHARACTER.—Calyx very obtuse, glabrous at the margin; upper segments of the corolla obsolete; side ones acute; lower lip elongated, retuse, bearded.

DESCRIPTION, &c.—This species is easily distinguished from all the other kinds by its dense spike, or, rather, spike-like raceme of flowers, which is frequently two or three feet long, of a pyramidal form, tapering upwards to a point. It is a hardy perennial, a native of Italy; introduced before 1596. As it generally perishes after flowering, it can seldom be propagated by dividing the roots, and it is consequently necessary always to save the seed.

6.—DIGITALIS LANATA, *Waldst. et Kit.* THE WOOLLY-FLOWERED FOXGLOVE.SYNONYMES.—D. Winteri, *Roth.*; D. ferruginea, β , *Lam.*; D. orientalis, *Elm.*; D. eriostachya, *Fisch.*

ENGRAVINGS.—Bot. Mag., t. 1159; Sweet's Brit. Flow. Gard., t. 291.

SPECIFIC CHARACTER.—Raceme crowded, spike-like, woolly; lower lip of the corolla very large.

DESCRIPTION, &c.—This is a very remarkable species, from the great size of the lower lip of the corolla, which is drawn out, so as to be nearly twice the size of the upper lip. In other respects, the spike is not so handsome as that of *D. ferruginea*, as it is narrow at the base. The colour of the flowers is white, delicately veined with pinkish lines. It is a native of Hungary, whence it was introduced in 1790. It is quite hardy in British gardens, where it is generally propagated by seeds.

7.—DIGITALIS ORIENTALIS, *Willd.* THE EASTERN FOXGLOVE.

ENGRAVINGS.—Bot. Mag., t. 2253; Rot. Reg., t. 554.

SPECIFIC CHARACTER.—Segments of the calyx lanceolate, pubescent; lower lip of the corolla very large.

DESCRIPTION, &c.—This species, though it agrees with the preceding one in the large size of the lower lip of the corolla, yet differs from it greatly in the position of its flowers, which form a very lax raceme instead of a very dense one. The plant is a native of the Levant, and it was introduced in 1820. It requires protection during winter, and is hardly worth the trouble of cultivating, as its flowers are but few in number; and, from their pale colour, and great distance from each other, they are by no means ornamental.

8.—DIGITALIS TOMENTOSA, *Sims.* THE WOOLLY-LEAVED FOXGLOVE.SYNONYMES.—D. verbascofolia, *Bocc.*; D. hispanica, *Tourn.*; D. purpurea, *Tab.*

ENGRAVING.—Bot. Mag., t. 2194.

SPECIFIC CHARACTER.—Leaves woolly, rugged, serrated; petioles somewhat decurrent; flowers spreading.

DESCRIPTION, &c.—This species grows about 2 feet high, with the stem somewhat branched, and numerous pale-reddish flowers, which spread widely in all directions. It is a native of the Continent, whence it was introduced in 1819. It is a hardy biennial, and it is always propagated by seeds. Some botanists suppose it to be a variety of *D. Thapsi*; but it differs from that species in the leaves being of the same colour on both sides, and the footstalks being long instead of being sessile; also in the flowers not being secund, but spreading widely on different sides.

9.—DIGITALIS CANARIENSIS, *Lin.* THE CANARY ISLAND FOXGLOVE.SYNONYME.—*Isoplexis canariensis*, *Lin.*ENGRAVING.—*Bot. Reg.*, t. 48 ; and our *fig. 1*, in *Pl. 76*.

SPECIFIC CHARACTER.—Segments of the calyx lanceolate, upper lip

of the corolla bifid, acute ; lower lip lanceolate, nearly equal ; leaves lanceolate, serrated.

DESCRIPTION, &c.—This species is properly a shrub, and will grow to the height of five or six feet ; but as it is generally raised from seed, and will flower the first, or at most the second year, it may, for all practical purposes, be considered as a biennial, and treated accordingly : that is, the seeds may be raised on a hot-bed, kept in a pit during the first winter, and planted out in April in a warm, sheltered situation, where they will begin to flower in May, and continue the greater part of the summer. After the plant has ripened its seeds, it may be suffered to die, which it will do, as soon as the cold weather sets in, as it cannot sustain the severity of an English winter without protection. It is a native of the Canary Isles, whence it was introduced in 1698.

10.—DIGITALIS OBSCURA, *Lin.* THE OBSCURE DIGITALIS.SYNONYMS.—*D. hispanica*, *Tourn.* ; the Willow-leaved Fox-glove.ENGRAVING.—*Bot. Mag.*, t. 2157.

SPECIFIC CHARACTER.—Leaves linear-lanceolate, acuminate, entire, glabrous. Segments of the calyx oblong-lanceolate, acute ; upper lip of the corolla bifid ; central lobe of the lower limb ovate.

DESCRIPTION, &c.—This is a very handsome species ; the flowers being red on the outside of the tube, and of a bright yellow veined with red within. The stem is woody at the base ; but the plant is generally considered a perennial ; as, though the stem is woody, it is not permanent, and is generally killed down to the ground every winter, though a fresh stem springs up from the root the following spring. It is a native of Spain, and was introduced in 1778.

OTHER SPECIES OF DIGITALIS.

There are several other species ; but those which have been enumerated are the principal of the perennial kinds.

GENUS II.

ANTIRRHINUM, *Lin.* THE SNAP-DRAGON.*Lin. Syst.* DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted, oblique. Corolla personate ; tube ample, a little compressed, saccate at the base, and furnished with two parallel and interrupted lines of hairs inside beneath the palate ; lobes of the upper lip erect, and often adpressed to the back by turns ; lower lip spreading, having the middle lobes smaller than the lateral ones, with an ample bearded palate, which closes the throat. Stamens

compressed, rather hairy at the base, having the sterile or fifth one very short or wanting. Stigma two-lobed. Capsule two-celled, woody, ovate, or pear-formed, incurved at top, opening by three holes, or an irregular foramen, under the top. Seeds oblong, truncate, minute ; testa black, more or less engraven, or wrinkled. (*G. Don.*)

DESCRIPTION, &c.—All the species belonging to this genus are either perennial or annual plants ; generally with ornamental flowers, and natives of Europe. Many of the smaller species which were formerly considered to belong to this genus, have been removed by modern botanists to the genus *Linaria*. The name of *Antirrhinum* signifies like a snout, and hence also one of the vulgar English names is *Calf's Snout*. Both these names are evidently taken from the form of the flower ; as is the common English name of the plant, *Snap-dragon*.

1.—ANTIRRHINUM ASARINA, *Lin.* THE ASARINA, OR HEART-LEAVED SNAP-DRAGON.

SYNONYMES.—*A. asarinum*, *Lam.*; *Asarina cordifolia*, *Manch.*; *A. procumbens*, *Mill.*; *A. Lobelii*, *Dale*; *Orontium asarina*, *Pers.* | SPECIFIC CHARACTER.—Leaves opposite, cordate, crenated; stem procumbent.

ENGRAVINGS.—*Bot. Mag.*, t. 902; and our *fig.* 3, in Pl. 78.

DESCRIPTION, &c.—This is a very pretty species, and particularly suited for rock-work, on account of its procumbent stems. It is, however, rarely seen in British gardens, as it is tender during winter, and rather difficult to manage. It is a native of Italy, and was first introduced in 1699, but it was soon lost. It was again introduced in 1748, when it appears to have been a very popular plant for some time till it was again lost, and since that time it does not appear to have been re-introduced. It is a very handsome plant, and probably, now that our gardeners are so much more skilful than they were formerly, some means may be devised of keeping it through our winters.

2.—ANTIRRHINUM MAJUS, *Lin.* THE COMMON SNAP-DRAGON.

SYNONYMES.—*A. grandiflora*, *Stok.*; *A. murale*, *Sal.*; *Orontium majus*, *Pers.* | *Paxt. Mag. of Bot.*, vol. v., p. 55, and vol. x., p. 197; and our *figs.* 1 and 2, in Pl. 78.

ENGRAVINGS.—*Eng. Bot.*, t. 129, of the species; of the varieties,

SPECIFIC CHARACTER.—Stem thick, twisted, much branched; leaves oblong, tapering at both ends; flowers racemose, crowded.

DESCRIPTION, &c.—Few plants vary more than the common Snap-dragon, and few have more beautiful varieties. Some of the flowers are of a pure white, others are rose-coloured, or a rich scarlet; others are double; and another, mentioned by De Candolle, and called by him *Monteridense*, has white and yellow flowers. Besides these, there are two very beautiful varieties figured in Pl. 78, the first of which, *Antirrhinum majus*, *Caryophylloides*, the carnation-flowered Snap-dragon, is one of the most beautiful herbaceous plants in our gardens. It is, however, unfortunately very apt to sport, and consequently it seldom can be kept many years of equal beauty, unless cuttings are made every year from the part on which the flowers are most perfect in their colours. The other variety, *fig.* 1, in plate 78, is said also to be very handsome; but I have never seen it in flower, and have only copied the figure of it from *Paxton's Magazine*. The common Snap-dragon is a native of Great Britain.

OTHER SPECIES OF ANTIRRHINUM.

A. MOLLE, *Lin.*

This is a native of the Pyrenees, with white flowers, having a yellow palate, and the upper lip striped with purple. It is a procumbent plant, which was introduced in 1752, and requires protection during winter. It takes the name of *molle*, which signifies soft, from its leaves being completely covered with soft clammy hairs.

A. SEMPERVIRENS, *Lapeyr.*

The flowers of this plant are very like those of the last; but the leaves are only slightly downy, and they are evergreen. The stem is also somewhat shrubby at the base. The plant was introduced in 1715. It is a native of the Pyrenees.

A. LATIFOLIUM, *Dec.*

This is a very handsome species, which deserves to be much more generally cultivated than it has hitherto been; the flowers being yellow, with a deep orange palate. The leaves are also large and spotted with purple. It is a native of the south of France and the Pyrenees. There is a variety with purple flowers.



1. *Antirrhinum majus*, var. *quadricolor*. — 2. *Antirrhinum majus*, var. *Caryophylloides*
 3. *Antirrhinum Asarina*

A. TORTUOSUM, *Bosc.*

This is a native of Sicily and the south of Italy, which grows with curiously-twisted branches. The flowers are of a rich purple, and are larger than those of any other species of the genus.

A. SICULUM, *Lin.*

Is also a native of Sicily, introduced in 1804, with small straw-coloured flowers. There are two varieties, one of which has yellow flowers; and another, the flowers of which are purple and yellow.

There are some kinds of perennial *Linarias*; but the only species which is decidedly ornamental is *L. Dalmatica*, which was first introduced as far back as 1731, but which was soon lost; and though it was re-introduced in 1834, it seems to have again disappeared. It is a native of Persia, and requires protection in British gardens.

GENUS III.

MIMULUS, *Lin.* THE MONKEY-FLOWER.*Lin. Syst.* DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx tubular, five-angled, five-toothed. Corolla ringent; upper lip two-lobed; lower one trifid, usually gibbous at the base; segments all flat. Stamens four, didynamous, inclosed; cells of anthers diverging or divaricate, at length sub-con-

fluent. Stigma bilamellate. Capsule hardly furrowed, two-valved, with a loculicidal dehiscence; valves entire, with flat margins, dissepiment at length free; placentas adnate. (*G. Don.*)

DESCRIPTION, &c.—Most of the species of *Mimulus* are herbaceous plants, with rough hairy leaves and squaro succulent stems. The leaves are opposite, and generally toothed. The flowers are solitary, and spring from the axils of the leaves. The name of *Mimulus* is said to be derived from the Latin word for monkey, and hence the English name of Monkey-flower.

§ I.—Stems erect; leaves narrow, entire, feather-nerved; calyx tubular.

1.—MIMULUS RINGENS, *Lin.* THE GAPING MIMULUS.

SYNONYMS.—*Euphrasia floridana*, *Pluk.*; *Lysimachia galericulata*, *Gron.*; *Digitalis perfoliata*, *Moris.*

ENGRAVING.—*Bot. Mag.*, t. 233.

SPECIFIC CHARACTER.—Leaves oblong or lanceolate, a little toothed; flowers with a short tube, and very large lips.

DESCRIPTION, &c.—This plant has pale lilac flowers, which are remarkable for the large size of the lips, whence the specific name of *ringens*, or gaping. The leaves are narrow, and very slightly serrated. The plant is a hardy perennial, growing about two feet high, with an erect, though rather slender stem. Like all the kinds of *Mimulus*, it succeeds best in a moist and somewhat shady situation, with a loamy soil. It is a native of Virginia, whence it was introduced in 1759; but it is now seldom seen in British gardens, as we have so many handsomer species of the genus.

2.—MIMULUS ALATUS, *Ait.* THE WINGED MIMULUS.

ENGRAVING.—*Lodd. Bot. Cab.*, t. 410.

SPECIFIC CHARACTER.—Glabrous. Leaves large, oblong-elliptic; petioles decurrent; stem four-winged from the decurrence of the

leaves; leaves unequally but slightly serrated. Calyx plicate, truncate, with linear teeth.

DESCRIPTION, &c.—This species has very nearly the same habit as the last, but the flowers are of a bright blue. It is a native of North America, whence it was first introduced in 1783. It was, however, soon lost.

and was re-introduced in 1804. It is quite hardy, and easily propagated by dividing the roots; but it is rarely seen in British gardens.

§ 2.—*Stems frequently decumbent; leaves three or five-nerved, deeply toothed; calyx ovate, usually inflated.*

3.—MIMULUS LEWISII, *Pursh.* MR. LEWIS'S MIMULUS.

SPECIFIC CHARACTER.—Plant small, erect, downy; leaves oblong-lanceolate, acute, deeply denticulated; flowers few, on very long peduncles.

DESCRIPTION, &c.—This is a dwarf plant, with very large purple flowers, which do not appear till August. It was found on the head-springs of the Missouri, and was introduced in 1824.

4.—MIMULUS CARDINALIS, *Doug.* THE BRIGHT SCARLET MIMULUS.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d ser., t. 358; and our *fig. 2*, in Pl. 77.

SPECIFIC CHARACTER.—The whole plant is copiously clothed with long white viscid hairs, which emit, when rubbed, a musky odour;

leaves ovate-lanceolate, acutely dentate; the peduncles much longer than the calyx; teeth of the calyx acute; lobes of the corolla emarginate; anthers hispid.

DESCRIPTION, &c.—This very handsome species is one of the plants discovered by Douglas in California; and, though it was introduced only in 1835, it has become one of the commonest, as well as one of the most beautiful, ornaments of our flower-gardens. It will grow in any common soil which is not too dry; and it may be increased with the greatest facility, either by cuttings or by seeds: it ripens the latter so freely, that it may safely be allowed to sow itself when it is wanted to spread rapidly. The colour of the flowers varies considerably, according to the situation in which it is grown. Where the plant has plenty of free air and sun, the flowers are of a brilliant scarlet; but they become of a dull orange when the plant is grown in a close situation and a dense atmosphere.

5.—MIMULUS ROSEUS, *Doug.* THE ROSE-COLOURED MIMULUS.

ENGRAVINGS.—Bot. Reg., t. 1591; Sweet's Brit. Flow. Gard., 2d ser., t. 210; Lodd. Bot. Cab., t., 1976; and our *fig. 5*, in Pl. 77.

SPECIFIC CHARACTER.—Glandulously pubescent; leaves elliptic-

oblong, acute, nearly entire; calyx shorter than the peduncles; teeth of the calyx acuminate, nearly equal; lobes of the corolla emarginate.

DESCRIPTION, &c.—This is a smaller plant than *M. cardinalis*; it is completely covered with glandular hairs, which are very soft and slimy to the touch, and have a strong smell of musk. The flowers are rather small, and of a bright rose-colour, and the leaves are very slightly toothed. The stem is nearly round, with only two projecting ribs, instead of four, as is usual in plants belonging to this genus. This species is also a native of California, where it was found by Douglas, and sent home by him in 1833. It hybridises freely with *M. cardinalis*; and several magnificent varieties have been produced between these species, particularly in the Edinburgh Botanic Garden. *M. Maclayana* (see *fig. 1*, in Pl. 77) is a beautiful hybrid, raised in Ireland, between *M. cardinalis* and *M. roseus*.

6.—MIMULUS LUTEUS, *Lin.* THE YELLOW-FLOWERED MIMULUS.

ENGRAVINGS.—Bot. Reg., t. 1030; Bot. Mag., t. 1501, t. 3336, and t. 3363; Sweet's Brit. Flow. Gard., 2d ser., t. 406; and our *fig. 4*, in Pl. 77.

SPECIFIC CHARACTER.—Leaves dentate; upper ones sessile, ovate; lower ones petiolate; corolla much larger than the calyx; segments transverse; palate bearded.

DESCRIPTION, &c.—This plant varies very much, and hybridises freely with *M. roseus*. In the seedling varieties of the parent plant, the labellum, or lower lip, is often blotched with red. The flowers are very large,



1, *Mimulus Macgregoriae*.—2, *Mimulus cardinalis*.—3 *Mimulus Smithii*.
4 *Mimulus luteus*.—5 *Mimulus roseus*.

and the plant generally of robust growth. Most of the kinds of *Mimulus* do best in loam; but this species has the finest flowers when it is grown in a pot filled with coarse gravel, and placed in a saucer full of water. It requires a slight protection during winter. It is a native of Chili, whence it was introduced in 1812. Some of the most beautiful varieties are, *M. luteus Youngiana* and *M. l. Smithii* (see fig. 3, in Pl. 77).

7.—MIMULUS MOSCHATUS. *Doug.* THE MUSK PLANT.

ENGRAVING.—Bot. Reg., t. 1118.

SPECIFIC CHARACTER.—Stem creeping; leaves ovate, dentate,

glandulously hairy; peduncles twin, shorter than the leaves; limb of the corolla divided into five nearly equal lobes; lower segment pubescent.

DESCRIPTION, &c.—The whole of this little plant is entirely covered with glandular hairs, which emit a very strong, but an agreeable fragrance of musk, which, in very hot weather, is spread to a considerable distance, and is particularly powerful when the plant is trodden upon. The blossoms are of a clear bright yellow, and are produced in great profusion all the summer. The plant grows best in a damp, shady border, in peat soil. It is tolerably hardy, and does not require any protection, unless the winter happens to be uncommonly severe. It is easily propagated either by seeds or division; and, indeed, it spreads so rapidly from its creeping stems, which throw out roots at every node, as soon to become troublesome in small gardens, unless care be taken to keep it within bounds. Few plants are more suitable for rock-work.

OTHER SPECIES OF MIMULUS.

M. GUTTATUS, Dec.

This appears to be only a variety of *luteus*.

M. PROPINQUUS, Lin.

This species was introduced from North America in 1827, and appears nearly allied to *M. moschatus*, but is of more upright growth.

M. PERFOLIATUS, Kunth.

Is a curious little plant, with a winged stem, and small yellow flowers, but it is now removed to another genus, on account of its white, fleshy fruit, which resembles that of the Snowberry tree.

GENUS IV.

VERONICA, *Lin.* THE SPEEDWELL.

Lin. Syst. DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx four, rarely five-parted, campanulate or compressed. Corolla rotate, with a very short tube, and a four-parted spreading limb; segments all entire; upper one the broadest. Stamens two, situated at the sides of the upper segment of the corolla, diverging

without any vestige of the lower ones. Anthers two-celled; cells confluent at top. Stigma hardly thickened. Valves of capsule septiferous in the middle, or bipartite. Seeds naked.—(*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus are, generally speaking, too much like British weeds, and too small in their flowers, to be worth cultivating as ornamental plants in a flower-garden. They all bear so strong a family likeness to the common Speedwell (which is common in every wood), that I have not thought it worth while to figure any of them; and I have only described a few of the species, the flowers of which may be

considered pretty. The derivation of the word Veronica is very uncertain. Linnæus says that it has been changed from Vetonica, the ancient Roman name for one of the provinces of Spain, and that it is applied to this genus from several of the species growing wild in that country. Other botanists derive it from *ver*, the spring, but this appears very improbable, as very few of the species flower before the middle of summer

1.—VERONICA NEGLECTA, *Vahl*. THE NEGLECTED VERONICA.

SYNONYME.—*V. canescens*, *Sebr.*

ENGRAVING.—*Swt. Brit. Flow. Gard.*, t. 55.

SPECIFIC CHARACTER.—The whole plant is covered with a thick

white pubescence; stem branched and dividing into several terminal spikes of flowers; radical leaves petiolate; oblong-obtuse; stem leaves opposite, lanceolate, tapering at both ends.

DESCRIPTION, &c.—A very handsome species from the brilliant and very rich dark-blue of its flowers, and its whitish silvery leaves. It is quite hardy, and it may be propagated either by dividing the roots, or by seeds, which it ripens in abundance. In rich soil, it often grows about eighteen inches high; but in poor soil, or in pots, it rarely exceeds a foot. It is a native of Siberia, and was introduced in 1797.

2.—VERONICA GENTIANOIDES, *Vahl*. THE GENTIAN-LIKE VERONICA.

SYNONYMS.—*V. orientalis*, *Tourn.*; *V. gentianifolia*, *G. Don.*

ENGRAVING.—*Bot. Mag.* t. 1002.

SPECIFIC CHARACTER.—Stem ascending; raceme terminal; calyx

divided into four unequal parts. Stem leaves elliptic, sessile, radical ones elongated at the base.

DESCRIPTION, &c.—The flowers of this very distinct species are of a very pale blue, beautifully streaked with blue of a much darker colour. The leaves are also very remarkable; those of the root are at least six inches long, tongue-shaped, and decurrent; that is, with the petiole growing to the stem, so as to form a kind of wing. The species is a native of Mount Caucasus, whence it was introduced in 1805.

3.—VERONICA PERFOLIATA, *R. Brown*. THE PERFOLIATE VERONICA.

ENGRAVING.—*Bot. Mag.* t. 1936.

SPECIFIC CHARACTER.—Raceme lateral, pedunculate, many-flowered.

Leaves entire, very smooth, ovate-acuminate, connate at the base. Capsule bipartite.

DESCRIPTION, &c.—This species is remarkable for its connate leaves, and for the delicacy of its flowers. It grows about two feet high, with very few branches. It is a native of the country round Port Jackson, in Australia, and it requires protection during winter. It was introduced in 1815.

OTHER SPECIES OF VERONICA.

These are very numerous, but the handsomest kinds are the following:—

V. PANICULATA, *Pall.*

The racemes of this species are very long and loose, and the flowers are blue or purple. It is a native of Tartary, Siberia, and Caucasus. It was introduced in 1797.

V. AZUREA, *Schott.*

A very beautiful plant with pale-blue flowers. It first appeared in British gardens about 1821; but its native country is unknown.

V. LONGIFOLIA, *Lin.*

This plant is a native of Europe and Siberia; but it is only found in damp places. There are many varieties; but the species was introduced in 1731.

V. INCANA, *Lin.*

This plant is quite white with hoary tomentum, which covers both the leaves and stem. It was introduced in 1759. The flowers are either blue or purple.

V. SPICATA, *Lin.*

This is a very common species all over Europe; but in England it is only found in high, dry, chalky pastures. There are several varieties.

V. PINNATA, *Ait.*

This species has pinnate leaves. The flowers are either blue or white. It is a native of Siberia, whence it was introduced in 1776.

V. LACINIATA, *Ait.*

This species is remarkable for its leaves, which are produced in tufts, and are so curiously pinnatifid as to appear jagged. The species is a native of Siberia, whence it was introduced in 1780.

V. ALPINA, *Lin.*

This species is common on all the Alps of Europe, and it is found in various places from the Highlands of Scotland to the Himalayan Mountains.

V. OFFICINALIS, *Lin.*

This is the common English Speedwell. It is a well-known British plant, with a creeping root, or rather underground stem, which is always found in damp woods. It was formerly much used in medicine, and it was supposed by Simon Paullix, an old Danish Botanist, to be the true Chinese tea. It is now very seldom used.

There are many other species of Veronica, several of which are common British plants. The most remarkable of these is, perhaps, the Brook-lime, *V. Beccabunga*.

 GENUS V.
PENTSTEMON, *Mich.* THE PENTSTEMON.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted, with one distinct solitary | of a fifth; two of them longer than the others; anthers distinct.
bract. Corolla ventricose, bilabiate. Stamens four, with the rudiment | Capsule ovate, two-celled, two-valved, many-seeded. Seeds angular.

DESCRIPTION, &c.—All the species belonging to this genus are either perennials or under-shrubs, with smooth opposite leaves, which are generally drawn out to a long point. The flowers are disposed in loose racemes, and are generally very showy; the shape of the corolla is generally tubular, and decidedly bilabiate, the upper lip being much shorter than the other; but sometimes it is almost campanulate, and five-lobed. The anthers are frequently woolly or hairy, and the lower lip bearded at the throat. All the species are natives of North America. The name of Pentstemon, which signifies five stamens, alludes to the rudiments of a fifth stamen being conspicuous in the plants belonging to this genus. Some botanists make this genus and *Chelone* into a separate order, called *Chelonæ*.

SECTION 1.—*Anthers naked.*§ 1.—*Corolla sub-campanulate ; limb almost equally five-lobed*1.—PENTSTEMON SPECIOSUM, *Doug.* THE SHOWY PENTSTEMON.ENGRAVINGS.—*Bot. Reg.*, t. 1270 ; *Swt. Brit. Flow. Gard.*, 2d ser., t. 259 ; and our *fig. 1*, in Pl. 79.

SPECIFIC CHARACTER.—The whole plant free from hairs or tomentum.

Leaves quite entire. Flowers disposed in numerous many-flowered cymes, so as to form a pyramidal panicle ; lobes of the corolla nearly equal.

DESCRIPTION, &c.—This is a very showy species, from the large size and great number of its flowers. It is a native of the north-west coast of North America, whence it was introduced by Douglas, in 1827. It grows about three feet high, with rather a stiff stem, and long, glossy, somewhat fleshy leaves, the upper surface of which is of a very dark green, while the under surface is pale and bluish. The flowers vary in colour, from a beautiful and brilliant cobalt blue to a dark purple, and they continue to appear in succession nearly all the summer. The plant thrives most in a mixture of peat and loam ; but it is rather difficult to propagate, as, from the great abundance of its flowering stems, it increases very little by the root, and though it produces abundance of seeds, they are difficult to manage, as they will not vegetate in heat ; and yet the young plants must be protected from too much cold.

2.—PENTSTEMON ACUMINATUM, *Dougl.* THE POINTED-LEAVED PENTSTEMON.ENGRAVINGS.—*Bot. Reg.*, t. 1285.

SPECIFIC CHARACTER.—Stem ascending. Leaves glabrous, glaucous ; radical leaves ovate-oblong, with a very long petiole, entire, somewhat

fleshy ; bracts cordate, acuminate, sessile ; stem clasping. Flowers in a close raceme ; mouth of the corolla inflated ; segments of the limb retuse.

DESCRIPTION, &c.—This species is very inferior to the preceding one, both in the size of the plant, and in the number and beauty of the flowers. It is a native of the sandy plains bordering the Columbia in California, and it grows there with the lower part of its stems and leaves "immersed in sharp, coarse white sand." It is probably from this habit of growth that it is so difficult to manage in this country, as it is found almost impossible to propagate it by any of the ordinary modes. It seldom ripens seeds, and it is very difficult to strike from cuttings. The stem grows about a foot high, and the flowers are purple. The species was discovered by Douglas, in California, and sent home by him in 1827, with the preceding species. *P. acuminatum* flowers from June to August, and produces abundance of blossoms ; it is easily distinguished from the other Pentstemons by its leaves.

3.—PENTSTEMON COBÆA, *Nutt.* THE COBÆA-LIKE PENTSTEMON.ENGRAVINGS.—*Swt. Brit. Flow. Gard.*, 2d ser., t. 348 ; *Bot. Mag.*, t. 3465 ; and our *fig. 3*, in Pl. 81.

SPECIFIC CHARACTER.—Glandularly pubescent. Leaves sharply

serrulated ; radical ones lanceolate and petiolate ; stem ones ovate, sessile, and somewhat stem-clasping. Corolla with the throat inflated ; sterile filament exerted and bearded.

DESCRIPTION, &c.—This species is remarkable for the large size and pale colour of its flowers, which bear considerable resemblance to those of the Cobæa, and which are produced in numerous cymes, bearing from three to five flowers each. The stem generally grows about three feet high, and the lower leaves are three or four inches long, so that this species is only suitable where there is abundance of room. It is a native of the rich meadows on the banks of the Red River, where it was first discovered by Nuttall, growing in dry situations, and always in calcareous soil. It has since been found in the interior of Texas by Drummond. It was introduced in 1835, and it appears quite hardy in British gardens, where it is generally propagated by cuttings, which strike readily. It is irregular in its time of flowering.



1. *Penstemon speciosa* — 2. *Penstemon trochylum*. — 3. *Penstemon Scouleri*
 4. *Penstemon prunosum*.

4.—PENTSTEMON DIGITALIS, Nutt. THE FOXGLOVE-LIKE PENTSTEMON.

SYNONYME.—*Chelone digitalis*, Swt.

ENGRAVING.—Swt. Brit. Flow. Gard., t. 120; and our *fig. 1*, in Pl. 82.

SPECIFIC CHARACTER.—Stem erect, sub-pubescent. Leaves smooth and glossy, slightly toothed with very small gland-like teeth, and covered with numerous small dots; lower leaves oblong-lanceolate,

attenuated at the base and running down the petiole, strongly nerveo beneath, and channelled on the upper side; stem-leaves cordate, ovate, serrinate, sessile. Flowers in racemose panicles; corollas clothed with glandular hairs, slightly bearded in the throat; sterile stamens longer than the others, and bearded half way down with long white hairs.

DESCRIPTION, &c.—This species was found by Nuttall in the Arkansa territory of North America, and sent to England in 1824. It is quite hardy in British gardens, and will grow in any common garden soil. It is most readily propagated by cuttings, which will soon strike root if planted under hand-glasses. The flowers are white, with a very slight tinge of pink, and they appear from June to September. The plant grows from one to two feet high.

§ 2. *Flowers appearing as if they were verticillate. Corolla bilabiate.*

5.—PENTSTEMON OVATUM, Dougl. THE OVAL-LEAVED PENTSTEMON.

ENGRAVINGS.—Bot. Mag., t. 2903; Swt. Brit. Flow. Gard., 2nd ser., t. 211.

SPECIFIC CHARACTER.—Pubescent. Leaves ovate-cordate, dentately

serrated; root leaves petiolate, upper ones stem-clasping. Flowers in a racemose panicle; segments of the calyx lanceolate; corolla glandular.

DESCRIPTION, &c.—This is a very beautiful species, as, though the flowers are small, they are extremely numerous, and of a most brilliant and beautiful blue. They are also disposed in a number of small cymes so as to form a large and very handsome panicle. The species is a hardy perennial, a native of the limestone rocks among the mountains near the Great Rapids of the Columbia River; and it was introduced by Douglas, in 1826. It grows best in calcareous soil, particularly in chalk, or chalk mixed with loam; and it is increased either by seeds which it ripens freely, or by cuttings. It varies very much as regards the colour of the flowers.

6.—PENTSTEMON PROCERUM, Dougl. THE TALL PENTSTEMON.

ENGRAVING.—Bot. Mag., t. 2954.

SPECIFIC CHARACTER.—Stem erect, straight, nearly simple. Leaves lanceolate, entire; lower ones petiolate, upper ones sessile, subcon-

nate. Flowers in a verticillate spike; segments of the calyx membranaceous, mucronate; sterile filaments toothless at the base. (*G. Don.*)

DESCRIPTION, &c.—This species is more singular than beautiful. The flowers, which are purple and very small, are disposed in small whorls round the stem, which is quite straight and erect, and from one to two feet high, the whole being at a considerable distance from each other. The species is a native of California, where it was found in swamps and overflowed meadows near the Grand Rapids, on the river Columbia. It was introduced in 1827, and it blossoms in June. It ripens seeds freely.

7.—PENTSTEMON CONFERTUM, Dougl. THE CROWDED-FLOWERED PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1260.

SPECIFIC CHARACTER.—Leaves quite entire, glabrous; radical ones spatulate, acuminate, on long petioles; superior one sessile, ovate, acuminate; peduncles axillary, short, bearing each a cyme of crowded

flowers, which appear verticillate; upper floral leaves reduced to jagged or serrated bractes; calycine segments acute, mucronate, jagged or serrated; corolla a little longer than the calyx; sterile filament bearded. (*G. Don.*)

DESCRIPTION, &c.—The flowers are yellowish, and very small, being disposed in distant whorls, like those of the preceding species. It is by no means handsome, but it has the advantage of being quite hardy, and ripening its seed freely. It is a native of California, whence it was introduced in 1827.

8.—PENTSTEMON PRUINOSUM, *Dougl.* THE BLOOM-LEAVED PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1280; and our *fig.* 4, Pl. 79.

SPECIFIC CHARACTER.—Leaves grey, radical ones petiolate, entire, or toothed; cauline leaves toothed, sessile; superior bractees entire; flowers verticillate; calyxes and bractees villous; corolla glabrous, twice as long as the calyx; segments of the limb roundish, entire. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this species are disposed in whorls like those of the two preceding kinds; but they are so much larger, that they make a much better appearance. They are of a very beautiful blue, with a white throat, and the leaves are perfectly glaucous. The species was found by Douglas, on the banks of the Columbia, whence it was introduced in 1827. It is quite hardy, and a true perennial; but according to Dr. Lindley, it is apt to exhaust itself so much by over-flowering, as frequently to die the second year. To prevent this, he advises the cultivator to pinch off part of the flower-buds.

§ 3.—*Corolla bilabiate. Upper lip of corolla compressed; the lower plaited.*

9.—PENTSTEMON ATTENUATUM, *Dougl.* THE ATTENUATED-LEAVED PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1295.

SPECIFIC CHARACTER.—Stem erect, pilose at top; radical leaves sessile, all quite glabrous and quite entire; panicle strict, and are, as well as the calyxes and corollas, downy; capsule glabrous; sterile filament bearded. (*G. Don.*)

DESCRIPTION, &c.—This is a very handsome species and quite hardy. The stem is from one to two feet high; it grows freely in any common garden soil, and it is propagated by division of the roots. The leaves are large and handsome, and of a very deep green; and the flowers, which are of a pale yellow, are disposed in a close panicle, and not in whorls. They are produced from July to the end of September. The species is a native of the mountains of California, whence it was sent home in 1827.

10.—PENTSTEMON DEUSTUM, *Dougl.* THE BURNED PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1318.

SPECIFIC CHARACTER.—Stem almost simple, ascending, glabrous; spatulate; cauline leaves oblong, acute, sessile; upper ones almost quite entire; calyxes glabrous; limb of the corolla flat, with retuse leaves deeply toothed; radical ones ovate-oblong; those near them segments; upper ones the smallest. (*G. Don.*)

DESCRIPTION, &c.—This species bears considerable resemblance to the last, both in its habit of growth, and in the colour of its flowers, but it differs in its coarsely-jagged leaves. It is a native of North West America, where it was found by Douglas, on open, rocky plains, exposed to the burning sun, and hence its somewhat singular name. It is quite hardy, and is readily increased by division. It was introduced in 1829.

11.—PENTSTEMON DIFFUSUM, *Dougl.* THE DIFFUSE PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1132.

SPECIFIC CHARACTER.—Stem branched; leaves ovate-oblong, glabrous, unequally serrated; peduncles axillary, many-flowered, the whole forming a terminal panicle; calyx turbinate, with jagged segments; sterile filament of about the same length as the tube, bearded.

DESCRIPTION, &c.—This is a very handsome species, with evergreen leaves, and decumbent rooting-stems, by which it is readily increased. It is a native of the open ground and banks of rivers in North West America, where it was found in great abundance by Douglas, by whom it was introduced in 1827. It grows freely in any light soil, and produces abundance of flowers from June to October.



1. *Penstemon Gentianoides*, var. *splendens*. 2. *Penstemon gracilis*. 3. *Penstemon leucostachyus*.
 4. *Penstemon campanulata*.

12.—PENTSTEMON STATICIFOLIUM, *Lindl.* THE STATICE-LEAVED PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1770.

SPECIFIC CHARACTER.—Stems ascending, pubescent; radical leaves oblong-lanceolate, narrowed to the base, entire, glabrous; cauline

leaves sessile, cordate-ovate, toothed, pubescent; cymes nearly sessile, tomentose; corolla ventricose, pubescent. (*G. Don.*)

DESCRIPTION, &c.—The flowers are large, and very handsome; but the plant, in its habit of growth, is very nearly allied to *P. diffusum*. It grows best in a peat border. It is a native of California, and was introduced in 1834. The root-leaves are sometimes seven inches long.

13.—PENTSTEMON TRIPHYLLUM, *Dougl.* THE THREE-LEAVED PENTSTEMON.ENGRAVINGS.—Bot. Reg., t. 1245; and our *fig. 2*, in Pl. 79.

SPECIFIC CHARACTER.—Humble; leaves three-four in a whorl, glabrous, bluntly cut; lower ones oblong; floral ones entire, linear-lanceolate, usually alterostate; peduncles two-three flowered, and are,

as well as the calyxes, clothed with cobwebbed down; segments of corolla oblong, obtuse; those of the lower lip equal; sterile filament bearded. (*G. Don.*)

DESCRIPTION, &c.—The elegance of the habit of growth of this plant forms an agreeable contrast to that of most of the other kinds of *Pentstemon*. The stem is slender, and very much branched, and the flowers are produced in small panicles at the tips of the branches. It is a native of California, whence it was introduced in 1827.

14.—PENTSTEMON GRACILIS, *Nutt.* THE SLENDER PENTSTEMON.ENGRAVINGS.—Bot. Mag., t. 2945; and our *fig. 2*, in Pl. 80.

SPECIFIC CHARACTER.—Stem smooth and slender; leaves smooth, linear, acute, half stem-clasping, sharply serrulated; panicles simple,

few-flowered; sterile filament bearded longitudinally; corolla smooth inside; segments of the calyx linear, oblong.

DESCRIPTION, &c.—The flowers are small and tubular, varying from blue to purple. The stem is erect, and the leaves sharply serrulated. The plant was discovered first by Mr. Nuttall, in the Mandan territory; but it has since been found by several collectors in different parts of North America. It was introduced in 1824.

15.—PENTSTEMON PUBESCENS, *Ait.* THE DOWNY PENTSTEMON.SYNONYMES.—*Chelone Pentstemon*, *Lin.*; *Asarina erecta*, *Mill.*

ENGRAVING.—Bot. Mag., t. 1424.

SPECIFIC CHARACTER.—Stem pubescent; leaves repandly serru-

lated, lanceolate-oblong, sessile, stem-clasping; flowers in panicles; the sterile filament bearded from the summit below the middle. (*G. Don.*)

DESCRIPTION, &c.—This is a very pretty plant, with rather broad leaves and abundance of flowers, slightly tinted with pink. It is a native of the Alleghany Mountains, in North America, whence it was introduced before 1738; and hence it was one of the first species of *Pentstemon* introduced into our gardens. It very frequently dies the second year, having exhausted itself by over-flowering.

16.—PENTSTEMON LÆVIGATUS, *Michx.* THE SMOOTH PENTSTEMON.SYNONYMES.—*Chelone lævigata*, *Pers.*; *Chelone Pentstemon*, var. *Mill.*ENGRAVINGS.—Bot. Mag., t. 1425; and our *fig. 3*, in Pl. 80.

SPECIFIC CHARACTER.—Leaves smooth, nearly entire; sterile filament bearded in the upper part; shorter than the corolla.

DESCRIPTION, &c.—The principal difference between this and the preceding species consists in *P. pubescens* having its leaves covered with a soft down; whilst in *P. lævigatus* these parts are perfectly smooth. The present species is also found in the more southern parts of North America, and it is rather more tender than

P. pubescens. It, however, partakes of the habit of that species in frequently dying after it has flowered. The seeds, however, ripen freely, and it may thus be easily preserved when treated as a biennial. It was introduced in 1776 by Dr. Fothergill.

§ 4.—*Corolla tubular ; lower lip usually bearded.*

17.—PENTSTEMON PULCHELLUM, *Lindl.* THE PRETTY PENTSTEMON.

ENGRAVING.—*Bot. Reg.*, t. 1138.

SPECIFIC CHARACTER.—Stem pubescent; leaves smooth, sessile, linear-oblong, serrulated. Panicles simple, secund; calyx pubescent;

corolla ventricose, slightly hairy within; sterile filament bearded; tube of the corolla longer than the stamens.

DESCRIPTION, &c.—This exceedingly handsome species is a native of Mexico, whence it was introduced in 1826. It greatly resembles a foxglove, and the colour of its flowers is a pale pinkish lilac. It is rather tender, but it will grow rapidly if planted in a warm border open to the south.

18.—PENTSTEMON ROSEUM, *G. Don.* THE ROSE-FLOWERED PENTSTEMON.

SYNONYMS.—*Pentstemon angustifolium*, *Lindl.*; *Chelone rosea*, *Sw.*

ENGRAVINGS.—*Bot. Reg.*, t. 1122.; *Sweet's Brit. Flow. Gard.*, t. 230; and our *fig. 2*, in *Pl. 82*, under the name of *P. angustifolius*.

SPECIFIC CHARACTER.—Stem smooth; leaves lanceolate, acute,

sharply serrulated, sessile, glabrous; upper ones broadest. Peduncles axillary, generally three-flowered; corolla small, somewhat inflated, the lower lip densely bearded; segments of the limb very short; sterile filament bearded in the upper part.

DESCRIPTION, &c.—The stem is very much branched, but the branches are all erect. They are smooth and glossy, but frequently covered with a glutinous substance. The leaves are crowded, and very sharply serrated, the points of the teeth being bent in a little. The flowers are produced in little tufts, which spring from the axils of the leaves; they are of a bright rose-colour, and rather small and tubular. The pollen is quite white. The species is a native of Mexico, whence it was introduced about 1825. It is propagated by cuttings.

19.—PENTSTEMON CAMPANULATUS, *Willd.* THE BELL-FLOWERED PENTSTEMON.

SYNONYME.—*Chelone Campanuloides*, *Andr.*

ENGRAVINGS.—*Bot. Mag.*, t. 1878; *Bot. Rep.*, t. 40; and our *fig. 4*, in *Pl. 80*.

SPECIFIC CHARACTER.—Stem smooth; sterile filament bearded in the upper part; corolla campanulate; segments of the calyx linear-lanceolate; leaves lanceolate, acuminate, sharply serrated.

DESCRIPTION, &c.—This species is very nearly allied to the last, but the flowers are much larger, and they are produced two together, instead of in threes. The species is a native of Mexico, whence it was introduced in 1794. It is quite hardy, and may be propagated either by cuttings or by seeds. It continues flowering all the summer, and is very ornamental. It was introduced by Sir Joseph Banks.

20.—PENTSTEMON ATROPURPUREUM, *G. Don.* THE DARK-PURPLE PENTSTEMON.

SYNONYME.—*Chelone atropurpurea*, *Sw.*

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, t. 235.

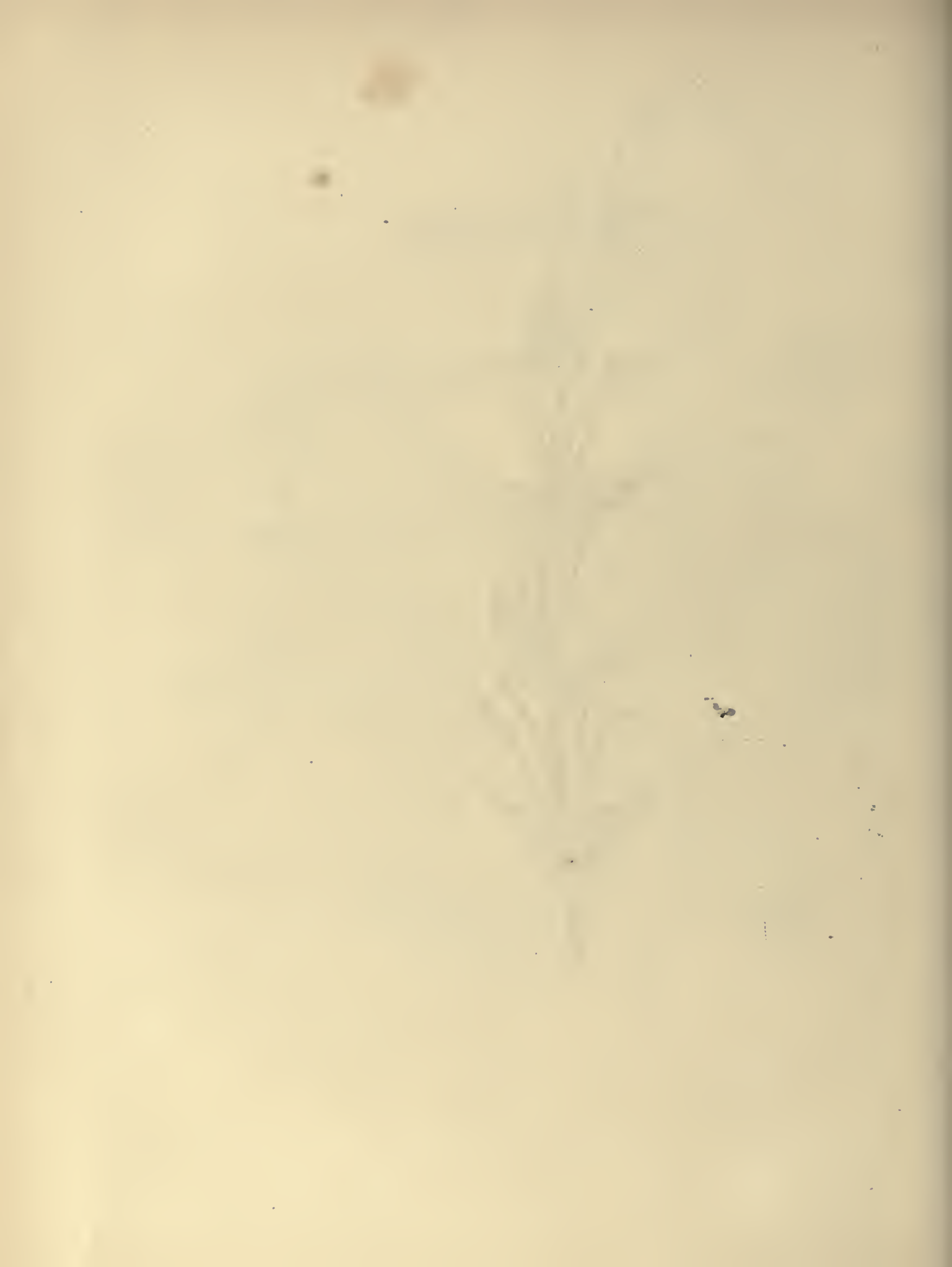
SPECIFIC CHARACTER.—Stem suffruticose at the base, but more or less flexuose in the upper part, shioing, but with the upper part covered with glandular hairs; leaves sessile, sharply serrulated, glabrous, lower

ones lanceolate, and attenuated at the base, upper ones ovate, acuminate, stem-clasping; peduncles axillary, generally three-flowered; calyx and corolla covered with glandular pubescence; corolla tubular, narrow towards the base.

DESCRIPTION, &c.—The shape of the flowers of this plant bears considerable resemblance to that of the flowers of *P. campanulatum*; but their colour is a dark purple, and they are produced in tufts of three each, instead of being in pairs. The whole plant is also larger, the stem growing from three to five feet high, and the



1. *Penstemon Murrayanus*. — 2. *Penstemon argutus*. — 3. *Penstemon Cobaea*.



flowers being disposed in long terminal paniced racemes. It is a native of Mexico, whence it was introduced in 1824, by the late A. B. Lambert, Esq. It should be grown in strong, rich soil, and it requires a little protection during severe frosts.

21.—PENTSTEMON GENTIANOIDES, *H. B. et K.* THE GENTIAN-LIKE PENTSTEMON.

ENGRAVINGS.—Bot. Reg. for 1838, t. 3; and our *fig. 1*, in Pl. 80, pubescent; leaves ovate-lanceolate, quite entire, smooth; segments of of var. *splendens*. | the calyx ovate; corolla beardless; sterile filament glabrous.

SPECIFIC CHARACTER.—Stem extremely slender in the upper part,

DESCRIPTION, &c.—This very popular plant is a native of Mexico, whence it was introduced in 1825; though for many years it was but little cultivated from its being supposed to be tender. About the year 1838, it was, however, found that it would grow freely in the open air, and stand the winter unprotected in any situation that was tolerably dry. It also seeds freely, and thus is very easily propagated. It grows about three feet high, and flowers freely from June to September; forming one of our most ornamental border flowers. It also varies very much when raised from seed, and some of the varieties thus raised are extremely splendid, particularly that figured in Pl. 86, the flowers of which are nearly three times as large as those of the species. The following mode of treating the plant when raised from seeds, is given in the *Botanical Register*:—“The seeds should be sown about the middle of May, on a bed of light rich soil (covering the seeds with a little sandy peat), in the open border, but not fully exposed to the mid-day sun; the plants will be fit to pot in the autumn (September), and should be kept in a cold pit all the winter: they should be planted out where they are to remain about the middle of April.” As this is one of the species which flower so freely as to exhaust themselves, it seldom lasts above two or three years; unless about half the flower-buds are pinched off as soon as they appear.

22.—PENTSTEMON MURRAYANUS, *Hook.* MR. MURRAY'S PENTSTEMON.

ENGRAVINGS.—Bot. Mag., t. 3472; and our *fig. 1*, in Pl. 81.

SPECIFIC CHARACTER.—Very tall; extremely smooth, glaucous; leaves entire, oblong; lower ones spatulate; upper ones or bracts

connately perfoliate; flowers racemose; corolla perfectly smooth; tube subcylindrical, longer than the stamens; sterile filament perfectly naked.

DESCRIPTION, &c.—This plant has been called stately from the habit of its growth. The stem grows from three to five feet high, bearing a paniced raceme of very showy flowers, which are sometimes so numerous, that Sir William Hooker says he counted 56 blossoms on one raceme. This species is a native of Texas, whence it was introduced in 1835; and it proves quite hardy in British gardens, where it only requires to be planted in beds, or borders, in any common garden soil.

23.—PENTSTEMON ARGUTUS, *Paxt.* THE CUT-LEAVED PENTSTEMON.

ENGRAVINGS.—Paxt. Mag. of Bot., Vol. VI., p. 271; and our *fig. 2*, in Pl. 81.

SPECIFIC CHARACTER.—Plant slightly suffruticose, covered with a short

pubescence; stems numerous, much branched towards the base. Leaves partly connate, deeply serrated; upper ones obovate or lanceolate; lower ones spatulate.

DESCRIPTION, &c.—This species is also a native of Texas, and bears considerable resemblance to the last, except that its stem is slightly pubescent, and its leaves are deeply serrated. If planted in the open border, the stem should be cut down to within a few inches of the ground in autumn, and the bed should have a slight

mulching of dead leaves, or the bark from an old pine pit, during the winter. Both this species and *P. Murrayanus* may be propagated either by seeds or by cuttings. *P. argutus* was introduced about 1836.

SECTION II.—*Anthers ciliated or downy.*

24.—PENTSTEMON GLABRUM, *Pursh.* THE GLABROUS PENTSTEMON.

SYNONYME.—*P. oriantbera*, *Nutt.*

ENGRAVING.—*Bot. Mag.*, t. 1672.

SPECIFIC CHARACTER.—Very smooth; leaves sessile, ovate-lanceolate, entire, having the margins partly undulated; peduncles many-

flowered, secund; segments of calyx roundish-oval, acuminate; corolla sub-campanulate; sterile filament slightly bearded under the retuse apex; anthers pubescent. (*G. Don.*)

DESCRIPTION, &c.—This is a very singular-looking plant, with the flowers crowded together in the same manner as in *Chelone*. The flowers are very large, and of a deep purple. The species is quite hardy, and it is a native of Louisiana, in North America, whence it was introduced in 1811. It grows about a foot or a foot and a half high, and flowers in June and July.

25.—PENTSTEMON GLANDULOSUM, *Dougl.* THE GLANDULAR PENTSTEMON.

ENGRAVING.—*Bot. Reg.*, t. 1262.

SPECIFIC CHARACTER.—Plant clothed with a glandular pubescence; radical leaves ovate, coarsely toothed; cauline ones stem-clasping,

acute, almost quite entire; peduncles many-flowered; calyx loose, with ovate segments; corolla ventricose; anthers ciliated; sterile filament glabrous. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of North America, where it was found by Douglas on the banks of a river in the Rocky Mountains, 6,300 feet above the level of the sea. It was introduced in 1827, and is quite hardy in British gardens; where it may be propagated either by its seeds or by division of its roots.

26.—PENTSTEMON VENUSTUM, *Dougl.* THE GRACEFUL PENTSTEMON.

ENGRAVINGS.—*Bot. Reg.*, t. 1309; and our *fig. 3*, in *Pl. 82*.

SPECIFIC CHARACTER.—Stem suffruticose, erect, glabrous; leaves sessile, ovate-lanceolate, acuminate, denticulated, glabrous; peduncles

many-flowered, the whole forming a panicle; calyx glabrous; corolla ventricose, ciliated; anthers pilose; sterile filament bearded at top. (*G. Don.*)

DESCRIPTION, &c.—This is a very handsome species, with flowers as large as those of the Foxglove, but disposed in a most graceful panicle. It may be propagated either by seeds or by cuttings; but the latter is the best mode, as the plants vary a good deal from seed. It is a native of North-West America, where Douglas found it in the dry channels of rivers, among the mountains. It was introduced in 1827.

27.—PENTSTEMON RICHARDSONII, *Dougl.* DR. RICHARDSON'S PENTSTEMON.

ENGRAVINGS.—*Bot. Reg.*, t. 1121; *Bot. Mag.*, t. 3391.

SPECIFIC CHARACTER.—Herbaceous; leaves sessile, pinnatifid; peduncles few-flowered; calyx clothed with glandular pubescence,

with ovate-acute segments; corolla ventricose; anthers ciliated; sterile filament bearded, with a few hairs at the apex. (*G. Don.*)

DESCRIPTION, &c.—This was one of the earliest species found by Douglas, and it was named by him in compliment to Dr. Richardson, the celebrated companion of Captain Franklin, in the overland expedition undertaken to discover the North-West passage. It is quite hardy in British gardens, and was introduced in 1825.







1, *Penstemon digitalis*. — 2, *Penstemon angustifolius*. — 3, *Penstemon venustum*.
 4, *Penstemon heterophyllum*. — 5, *Chelone barbata*. — 6, *Chelone Lyoni*.

28.—PENTSTEMON HETEROPHYLLUM, *Lindl.* THE VARIABLE-LEAVED PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1899; and our *fig.* 4, in Pl. 82. acuminated; corolla ventricose, beardless; sterile stamen glabrous; anthers sagittate, fringed at top.—(*G. Don.*)
 SPECIFIC CHARACTER.—Leaves glaucescent, quite entire; lower ones linear-lanceolate; superior ones linear; raceme twiggy; sepals ovate,

DESCRIPTION, &c.—The stems of this species are woody at the base, and yet so slender, that if not supported artificially, they fall on the ground, and throw out a great number of side shoots. The colour of the flowers is of a reddish purple when expanded, and of a dull yellow when in the bud. The species is quite hardy, and it is a native of California, whence it was introduced in 1834.

29.—PENTSTEMON SCOULERI, *Dougl.* DR. SCOULER'S PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1277; and our *fig.* 3, in Pl. 79. obovate-lanceolate, serrulated; upper ones entire, obtuse. Flowers racemose; corolla ventricose; segments serrulated; anthers woolly.
 SPECIFIC CHARACTER.—Plant suffruticose at the base. Leaves

DESCRIPTION, &c.—This species is a native of the Kettle Falls of the Columbia, where it was found by Douglas, and sent home by him in 1827. In its native country it is a shrub, but in England it is herbaceous, the stem becoming slightly woody at the base. It is propagated either by seeds or by cuttings.

SECTION III.—*Sterile filament glabrous; anthers glabrous; leaves narrow, entire, glaucous; flowers panicled.*

30.—PENTSTEMON BARBATUM, *Nutt.* THE BEARDED PENTSTEMON.

SYNONYMS.—*Chelone barbata*, *Cav.*; *C. formosa*, *Wend.*; *C. ruelloides*, *Andr.* SPECIFIC CHARACTER.—Glaucous; leaves entire, radical ones spatulate, petiolate, acute; stem leaves sessile, lanceolate. Flowers pendulous, paniculate; lower lip of the corolla bearded, revolute, three-parted.
 ENGRAVINGS.—Bot. Reg., t. 116; Bot. Rep., t. 34; and our *fig.* 5, in Pl. 82, under the name of *Chelone barbata*; and of the variety *carneum*, Bot. Reg. for 1839, t. 21.

DESCRIPTION, &c.—This species and its variety are both natives of Mexico. The species was introduced in 1794, by Sir Joseph Banks, and it was for many years, under the name of *Chelone barbata*, a very favourite plant in flower-gardens. The variety, which is of a pale flesh-colour, was introduced in 1838; but it is very inferior in beauty to the species. Both are readily increased by cuttings, or by seeds; though the latter, even if sown as soon as ripe, will not vegetate before spring. Though both plants are called quite hardy, it is sometimes necessary to protect them during the winter, as they never die quite to the ground, and the lower part of the stem is liable to be injured either by hard frost, or a long continuance of wet. Most flower-gardeners, however, make cuttings every year in the autumn, which they preserve during the winter in pots.

31.—PENTSTEMON CENTRANTHIFOLIUS, *Dec.* THE VALERIAN-LEAVED PENTSTEMON.

SYNONYMS.—*Chelone Centranthifolia*, *Benth.* late, entire; cordate and stem-clasping at the base; panicle elongated, corolla tubular, pendulous, very smooth, naked at the mouth; sterile filament not bearded.
 ENGRAVING.—Bot. Reg., t. 1737.
 SPECIFIC CHARACTER.—Very smooth, glaucous; leaves ovate-lanceo-

DESCRIPTION, &c.—This species is nearly related to the last, but it differs from it in the mouth of the corolla being destitute of a beard, and the leaves being of a different shape. It is a native of California, whence it was introduced in 1832; and it is quite hardy in British gardens.

OTHER SPECIES OF PENTSTEMON.

P. MACKAYANUS, *Flor. Cab.*, vol. II., t. 117.

This is a very pretty species, which is said to be a native of Ohio, where it was discovered by Mr. Drummond in 1834. It is a very small and delicate plant, with purple flowers, which are white inside, and have the beard of the sterile filament of a bright yellow. It is quite hardy, and is easily increased by dividing the roots.

P. CRASSIFOLIUS, *Lindl.*, *Bot. Reg.* for 1838, t. 16.

This is a very handsome species, with a suffruticose stem, and fleshy leaves. It grows about a foot high, and requires the same treatment as *P. Scouleri*. It is remarkable for the great number of shoots sent up by the roots, and consequently it is very easily propagated. It is a native of California, and it was introduced about 1835.

P. BREVIFLORUS, *Lindl.*, *Bot. Reg.*, t. 1946.

This is a curious little plant, with small flowers, which are white; striped with pink, and tinted with yellow, so as to present a very singular and harlequin-like appearance. It was introduced from California by Douglas, in 1833; but it is so difficult to manage that it is very seldom seen in British gardens, and is now probably lost.

There are some species of Pentstemons mentioned in catalogues, but very little is known respecting them.

GENUS VI.

CHELONE, *Lin.* THE CHELONE.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted, tribracteate; corolla ringent, ventricose; upper lip emarginate; lower one trifid, sterile; stamens didynamous, with a sterile filament, which is shorter than the rest; anthers woolly; capsule two-celled, two-valved; seeds surrounded by a membranous margin (*G. Don*).

DESCRIPTION, &c.—Chelone is very nearly allied to Pentstemon; and, in fact, many botanical writers seem to have great difficulty in distinguishing between these two genera. Some authors make the difference consist in Chelone having woolly anthers, and Pentstemon smooth ones; while others distinguish the genera by the form of the flower; Chelone having a short inflated corolla, which is contracted at the orifice, while in Pentstemon the corolla is funnel-shaped or tubular, with an open mouth. The seeds of Chelone are also winged, that is, surrounded by a thin membrane; while those of Pentstemon are perfectly smooth. Without troubling my readers, however, with these minute distinctions, I need only tell them that modern botanists place but four species in the genus Chelone, and that these four are:—*C. glabra*, *C. obliqua*, *C. nemorosa*, and *C. Lyoni*; the last being sometimes called *C. major*. All these species are easily distinguished at first sight from the Pentstemons, from the manner in which the flowers are crowded together in a close spike; and from the shape of the flowers themselves, each being short and thick, with the upper lip curved, so as to bear some resemblance to the arched back of a tortoise; whence, indeed, the genus takes its name, the word Chelone being the scientific name of the tortoise.

1.—CHELONE GLABRA, *Lin.* THE SMOOTH CHELONE.

SPECIFIC CHARACTER.—Leaves lanceolate-oblong, acuminate, nearly sessile, glabrous.

DESCRIPTION, &c.—This species has white flowers, and is a native of the United States. It was introduced in 1730, but it is not often seen in British gardens, as it is very inferior in beauty to most of the other kinds. It is quite hardy, and is propagated either by seeds, or by dividing its roots.

2.—CHELONE OBLIQUA, *Lin.* THE OBLIQUE CHELONE.

SYNONYMS.—*C. glabra*, var. *Michx.*; *C. purpurea*, *Mill.*; *Digitalis Mariana*, *Pluk.*; purple *Chelone*.

ENGRAVING.—*Bot. Reg.*, t. 175.

SPECIFIC CHARACTER.—Leaves petiolate, ovate-lanceolate, unequally serrated, opposite, very smooth; flowers forming a dense spike.

DESCRIPTION, &c.—The flowers of this species are crimson, instead of purple; or, as the original discoverer of the species expresses it, they are of the colour of the Damask Rose. This original discoverer, whose name was Clayton, found the species in Virginia and Carolina, growing on the sides of rivulets in the mountainous districts of those countries, and sent it to the celebrated Miller in the year 1752. It has a creeping root, and grows freely in damp, shady situations. It is quite hardy, and it is propagated by dividing the roots.

3.—CHELONE NEMOROSA, *Dougl.* THE GROVE CHELONE.

ENGRAVING.—*Bot. Reg.*, t. 1211.

SPECIFIC CHARACTER.—Leaves ovate, acuminate, serrated; upper

ones stem-clasping, cordate; peduncles naked, three-flowered, pubescent.

DESCRIPTION, &c.—This species, though generally classed with *Chelone* by modern botanists, is very unlike all the other species of the genus, as the flowers are disposed in a loose panicle, and are open at the mouth. The seeds, however, have a margin. Dr. Lindley, speaking of this plant, says, "There is no genus to which this plant can be referred with more propriety than to *Chelone*; but it is by no means a genuine species of that genus. In habit it is intermediate between *Pentstemon* and *Chelone*, and its structure is not exactly that of either." The species is a native of California, whence it was introduced in 1827; and, like all the Californian plants, it is quite hardy, though it is easily killed by too much exposure to the sun.

4.—CHELONE LYONI, *Pursh.* MR. LYON'S CHELONE.

SYNONYME.—*C. major*, *Sims.*

ENGRAVINGS.—*Bot. Mag.*, t. 1864; *Sweet's Brit. Flow. Gard.*, t. 293; and our *fig. 6*, in Pl. 82.

SPECIFIC CHARACTER.—Erect, slightly branched; leaves petiolate,

cordate-ovate, acuminate, serrated, rugose, slightly ciliated at the margin; flowers in a terminal spike; sterile filament very short, hairy at the base.

DESCRIPTION, &c.—Though the figure of *Chelone Lyoni* in *Sweet* is said to be the same as *Chelone major*, figured in *Bot. Mag.*, they are, in fact, quite different. The plant figured in the *Bot. Mag.* is apparently only a variety of *C. obliqua*, from which it differs principally in being of larger size. The *C. Lyoni* of *Sweet*, on the contrary, is quite different, not only in the colour and disposition of the flowers, but in both the leaves and plants having a slight clothing of hair. *C. Lyoni* is a native of Upper Carolina and Georgia, whence it was introduced in 1812. It is quite hardy in British gardens, where it is increased by dividing the roots, or by seeds.

CHAPTER XL.

LABIATÆ.

CHARACTER OF THE ORDER.—Calyx tubular, regular, five-cleft, or five-ten-toothed, or bilabiate; lips entire or divided. Corolla tubular, irregular, bilabiate; superior lip undivided or bifid, lying over each other in aestivation; lower lip trifid. Stamens four, didymous, two of which are sometimes sterile; filaments inserted under the sinuses of the lower lip and interlabiate; anthers two-lobed, lobes usually divaricate; but sometimes dimidiate, and therefore somewhat one-

celled, with an obsolete division, and a continuous suture. Ovaria four, one-seeded, connected with the base of the style, seated on a glandular disk, and girded at bottom; ovula erect. Style one. Stigma bifid, usually acute, sometimes unequal, or dilated. Achenia four, hidden by the permanent calyx, some of them generally abortive. Albumen wanting, or very sparing. Embryo erect. Cotyledons flat. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this order are so clearly marked by their flowers, as to be easily recognised, though some are extremely ornamental, and others are totally without beauty. Nearly all the species are herbaceous: the Lavender, Thyme, and other plants belonging to the order, which are generally considered as shrubs, having very little pretension to that character, excepting to the eye of a botanist. Though the flowers of many of the genera may be considered as pretty, very few of them are sufficiently ornamental to be cultivated in gardens. The name of Labiatae alludes to the shape of the flowers, in which the lips form a conspicuous feature.

GENUS I.

SALVIA, *Lin.* THE SAGE.

Lin. Syst. DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx ovate, tubular, or campanulate, bilabiate; upper lip entire or tridentate; lower one bifid; throat naked inside. Corolla with an inhaled or exerted tube, which is equal, ventricose, or widened, sometimes furnished with a ring of hairs inside, sometimes naked, or sometimes furnished with two teeth or processes on the lower side at the base; limb bilabiate; upper lip erect, rarely spreading, straight or falcate, entire or emarginate; lower lip spreading, shorter or longer, with the lateral lobes oblong or roundish, spreading, reflexed, or twisted erectly, the middle lobe usually the broadest, entire or emarginate. Rudiments of superior stamens wanting, or small and club-shaped; lower two always fertile, inserted near the throat of the tube; filaments short, horizontal, rarely erect, articulated with the anther at top, and usually drawn out beneath the articulation, rarely almost con-

tinuous. Anthers dimidiate; connective, elongated, linear, articulated transversely with the filament ascending under the upper lip of the corolla, and bearing at the top a linear, adnate, or versatile fertile cell, and deflexed or erect behind, and sometimes bearing another smaller cell, which is either fertile or deformed, and empty; free, but usually combined together, or connate in various ways. Disk of ovium glanduliferous in front. Style ascending, bifid at top; lobes sometimes subulate, equal, or the superior one is longest, and sometimes the lower one or both are rounded, dilated, and flattened. Stigmas for the most part minute, terminal, or in the larger part running along the lobes of the style. Achenia ovoid-triangular, dry, glabrous, usually very smooth. (*G. Don.*)

DESCRIPTION, &c.—The common sage is a plant well known in every garden, from the use made of it in cookery. It is not, however, at all ornamental, as its leaves are rugose, and of a dingy green, while its flowers are not very conspicuous. It was formerly much esteemed for its medicinal properties, and our ancestors had a saying, "Why should a man die who has sage in his garden?" The name of Salvia is also derived from a Latin verb, signifying to save. There are numerous species in the genus, most of which are slightly shrubby at the base, and many of which have very handsome flowers.

I.—SALVIA NUBICOLA, *Wall.* THE SALVIA OF THE CLOUDS.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 140.

SPECIFIC CHARACTER.—Stem erect, quadrangular, branched in the upper part; leaves petiolate, somewhat halbert-shaped, oblong, acute,

crenate, subcordate, rugose, reticulately veined; flowers verticillate, in long racemes; bracts ovate, reflexed, glutinously hairy.

DESCRIPTION, &c.—This species is found in the mountains of Nepal, in situations so elevated as to give a reason for the somewhat poetical name—bestowed upon the species by Dr. Wallich—of *Salvia nubicola*, or the

Salvia of the Clouds. It grows about three feet high, with a square purplish stem, and rather small flowers, which are yellow, spotted with red. The leaves are rough, like those of the common sage. It was introduced in 1823. It is scarcely worth cultivating in gardens, as it is more curious than beautiful.

2.—*SALVIA FORSKOHLI*, *Lin.* FORSKOHL'S SAGE.

SYNONYMES.—*Salvia bifida*, *Forsk.*; *Sclarea orientalis*, *Tourn.*
ENGRAVING.—*Bot. Mag.*, t. 988.

SPECIFIC CHARACTER.—Leaves lirate-auriculate; stem nearly leafless; corolla decidedly helmet-shaped, with the helmet bifid.

DESCRIPTION, &c.—This is a very curious plant, from the very singular shape both of the flowers and leaves. The flowers are blue, striped with white, and the leaves nearly all spring from the root. The species is a native of Greece, whence it was introduced in the year 1800.

3.—*SALVIA INDICA*, *Lin.* THE INDIAN SAGE.

SYNONYMES.—*Horminum hirsutum*, *Moris.*; *Sclarea indica*, *Tourn.*
ENGRAVING.—*Bot. Mag.*, t. 395.

SPECIFIC CHARACTER.—Leaves cordate, sub-lobed; flowers verticillate, distant.

DESCRIPTION, &c.—This plant, though a native of India, is quite hardy in the open border in British gardens, where it grows to the height of four or five feet, and produces an abundance of its large purple flowers in the months of June and July. It is propagated by dividing the roots. It was introduced in 1731.

4.—*SALVIA CANESCENS*, *Meyer.* THE HOARY SAGE.

ENGRAVING.—*Bot. Reg.* for 1838, t. 36.

SPECIFIC CHARACTER.—Stems woolly at the base; leaves lanceolate-oblong, entire, or sinuately lobed, narrowed a long way at the base, wrinkled, loosely clothed above, but densely beneath with white wool; floral leaves very broad, acuminate, concave, permanent,

rather shorter than the calyxes; racemes branched, clothed with clammy villi; whorls remote; calyx tubularly campanulate; teeth of lower lip lanceolate, acuminate; corolla about three times longer than the calyx, the tube a little exerted. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Mount Caucasus, where it is found growing among rocks. The leaves are covered with wool; but the flower-stems and calyxes are covered with a glutinous green hair, which forms a striking contrast to the whiteness of the leaves. The plant grows to a considerable height, and the stem, though slender, is very much branched at the top. The flowers are rather small, and of a dark purple. The species was introduced in 1837.

5.—*SALVIA BICOLOR*, *Willd.* THE TWO-COLOURED SAGE.

SYNONYME.—*S. crassifolia*, *Car.*

ENGRAVINGS.—*Bot. Mag.*, t. 1774; and *Pact. Mag. of Bot.*, vol. 12., p. 271.

SPECIFIC CHARACTER.—Stem erect, a little branched, clothed with clammy pubescence; lower leaves petiolate, simple, ovate, deeply-toothed, pinnatifid, or palmately-lobed; middle leaves petiolate, ovate-lanceolate, acuminate, deeply-toothed; superior leaves sessile,

lanceolate, all cordate at the base, and clothed with clammy pubescence; floral leaves ovate-lanceolate, acuminate, reflexed; racemes a little branched, cleogated; whorls distant, six-flowered; calyxes pedicellate, campanulate, striated, clothed with clammy hispid hairs; teeth all subulate; corolla three times longer than the calyx; the tube equaling the calyx; stamens exerted. (*G. Don.*)

DESCRIPTION, &c.—This is a remarkably strong-growing and handsome species; but, unfortunately, the beauty of its showy flowers is but short-lived, as the snowy whiteness of the lower lip of the corolla very soon fades, and changes to a dingy brown. The species is a native of Barbary, where it was first discovered by Desfontaines; and it proves a hardy biennial in British gardens. The stem is quadrangular, and the leaves large and fleshy. It flowers during the whole of the summer months, and ripens abundance of seeds. It was introduced in 1793.

6.—*SALVIA AUSTRIACA*, Jacq. THE AUSTRIAN SAGE.

SYNONYMES.—*S. sclarea*, Crantz.; *S. distans*, Pohl.; *Sclarea distans*, Mönch.

ENGRAVING.—Bot. Reg., t. 1019.

SPECIFIC CHARACTER.—Stem erect, nearly naked, pubescent; radical leaves petiolate, broad-ovate, crosely toothed, cordate, rounded or cuneated at the base, wrinkled, glabrous above and pubescent beneath;

cauline leaves few; floral leaves ovate, acuminate, ciliated, about equal in length to the calyxes; racemes a little branched; whorls about six-flowered; lower ones distant; upper ones approximate; calyxes nearly sessile, campanulate, very pilose; corolla three times as long as the calyx; the tube a little exerted. (*G. Don.*)

DESCRIPTION, &c.—This is a very coarse-growing plant, with a strong, disagreeable smell; and, consequently, it is scarcely worth growing, except for the singularity of its flowers, which are of a pale yellow, covered with dark purple hairs. It is a native of Austria, whence it was introduced in 1776; but it is very seldom seen in British gardens. It is useful, however, in all situations where a rapid-growing plant, with large leaves, is wanted to fill up a space.

7.—*SALVIA TENORII*, Spreng. PROFESSOR TENORE'S SAGE.

SYNONYMES.—*S. Barrelieri*, Ten.; *S. dumetorium*, Fisch.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 26.

SPECIFIC CHARACTER.—Leaves oblong, sub-sinuated, unequally

crenated, rough, reticulately veined; upper ones stem-clasping, acute; lower ones petiolate; flowers verticillate, nearly naked; helmet of the corolla hairy, falcate; calyx furrowed.

DESCRIPTION, &c.—The flowers are large, and of a dark blue, tinged with purple. They grow in whorls of about six each, without any leaves on the flower-stems, and with scarcely any bracts. The species is a native of Europe, and it was introduced in 1820, when it was raised from seeds received from Italy. A few years afterwards the same species was raised from seeds received from Russia. It is quite hardy in British gardens, and the seeds ripen freely.

8.—*SALVIA NUTANS*, Lin. THE NODDING SAGE.

SYNONYMES.—*S. acutifolia*, Lam.; *S. pendula*, Besser.; *S. bastata*, Etling; *S. betonicaefolia*, Bieb.

ENGRAVING.—Bot. Mag., t. 2436.

SPECIFIC CHARACTER.—Stem pubescent, nearly naked; leaves all radical, or nearly so, on long petioles, ovate-oblong, doubly crenated,

sub-cordate at the base, wrinkled; floral leaves orbicular; racemes short, on long peduncles, paniced, drooping at the time of flowering; whorls about six-flowered, approximate; calyxes reflexed, pubescent; corolla twice as long as the calyx, the tube equalling the calyx. (*G. Don.*)

DESCRIPTION, &c.—This is a very singular plant; the flowers, which are of a very dark purple, are small, and so unlike those of any other kind of Sage, as to give no idea of the plant belonging to the genus. The leaves are cordate, undulated, and bordered with a pinkish membrane at the margin. The veins are also pink. The species is a native of Russia, and various parts of the Continent, and it was introduced in 1780. It is quite hardy, and may be propagated either by seeds or by dividing its roots.

9.—*SALVIA ANGUSTIFOLIA*, Cav. THE NARROW-LEAVED SAGE.

SYNONYMES.—*S. reptans*, Jacq.; *S. virgata*, Ort.

ENGRAVINGS.—Bot. Reg., t. 1554; and our fig. 4, in Pl. 83.

SPECIFIC CHARACTER.—Stems herbaceous, erect, glabrous, or beset with spreading hairs; leaves nearly sessile, oblong-linear, narrowed at both ends, quite entire, or serrated, glabrous; floral leaves bracteaformed, linear-lanceolate, deciduous; racemes elongated, simple;

whorls all distant, two-six-flowered; calyx tubular, striated, hispid, with the upper lip entire, and the teeth of the lower lip ovate, acute; corolla twice as long as the calyx; tube equalling the calyx; middle lobe of lower lip emarginately bifid; style bifariously bearded. (*G. Don.*)

DESCRIPTION, &c.—This is a very pretty species, which continues flowering all the summer; but it requires to be protected from frost during winter. As it strikes easily from cuttings, the best way of treating it is to plant it out in the open border in May, and then to make cuttings of it in the autumn, which may be preserved



1. *Salvia fulgens* — 2. *Salvia rotens* — 3. *Salvia Grahami* — 4. *Salvia angustifolia* L.

in a frame or pit during the winter months, for planting out the following spring. It is a native of Mexico, where it grows in dry elevated places, and whence it was introduced, according to some botanical writers, in 1806; but, if this was the case, it must have been lost, as it was re-introduced about 1830.

10.—*SALVIA AZUREA*, Pursh. THE AZURE-FLOWERED SAGE.

SYNONYMS.—*S. acuminatissima*, Vent.; *S. angustifolia*, Michx.;
S. Mexicana, Walt.; *S. longifolia*, Nutt.
ENGRAVING.—Bot. Mag., t. 1723.

SPECIFIC CHARACTER.—Leaves linear-lanceolate, serrated, and, as well as the stem, glabrous. Calyx pubescent, very short, trified.

DESCRIPTION, &c.—This is probably only a variety, or, perhaps, merely a variation, of *S. angustifolia*, which it resembles closely, except that the flowers are rather smaller, and the leaves somewhat broader than in that species. It is also stated to be a native of Carolina instead of Mexico. It was introduced in 1806. There is another species, a native of Mexico, called *S. amarissima*, which is evidently very nearly allied to the preceding species, though the flowers are still smaller, and the leaves still broader.

11.—*SALVIA REGLA*, Cav. THE REGLA SAGE.

SYNONYME.—*S. deltoidea*, Pers.
ENGRAVING.—Bot. Reg. for 1841, t. 14.

SPECIFIC CHARACTER.—Stem shrubby at the base. Leaves petio-

late, rotund, obtuse, sinuately crenate. Flowers in small, terminal panicles.

DESCRIPTION, &c.—This species, though said by its discoverer, Mr. Hartweg, to form a shrub four or five feet high in its native country, Mexico, appears to be only an herbaceous plant in Britain. Its flowers are of the most brilliant scarlet, but unfortunately only a very few open at a time. It was introduced in 1840.

12.—*SALVIA INVOLUCRATA*, Cav. THE INVOLUCRATED SAGE.

SYNONYME.—*S. lævigata*, Hum. et Kim.
ENGRAVINGS.—Bot. Mag., t. 2872; and Bot. Reg., t. 1205.

SPECIFIC CHARACTER.—Smooth. Leaves cordate-ovate, acuminate.

Flowers in terminal panicles; bracts very large, and united, so as to form a kind of involucre to each flower. Corolla tubular, ventricose, much longer than the calyx.

DESCRIPTION, &c.—This is a most noble plant, the stem frequently growing six or eight feet high, and the flowers being large, and of a most beautiful rose-colour. The species is a native of Mexico, from which country it was introduced about 1825. It grows freely in the open air, but requires a slight protection during winter. It is propagated by cuttings.

13.—*SALVIA GRAHAMI*, Benth. MR. GRAHAM'S SAGE.

ENGRAVINGS.—Bot. Reg., t. 1370; and our fig. 3, in Pl. 33.

SPECIFIC CHARACTER.—Stem suffruticose, branched, slightly pubescent. Leaves ovate, slightly crenated, wedge-shaped, or rounded at

the base, very slightly pubescent. Racemes elongated, not branched; calyx tubular, covered with glandular hairs; corolla twice as long as the calyx.

DESCRIPTION, &c.—This is a very pretty species, growing about three feet high, and covered with an abundance of deep rose-coloured flowers. The stems are angular, and have the peculiarity of having more down on two of the sides, than on the other two. The flowers begin to appear in June, and continue to be produced in great abundance till October, and sometimes even till November. The species is a native of Mexico, where it was found by Mr. Graham, and introduced by him in 1829; and it has very appropriately been named after that gentleman. It is generally propagated by cuttings, which are struck in autumn, and kept in a cold pit or

greenhouse during the winter, to be planted in the open border in May. It may, however, be kept in the open ground the whole of the year, if it is protected from the frost. The following peculiarity respecting this plant is mentioned in the *Botanical Register*:—"The upper and under surfaces of the leaf of this species abound with spherical particles of concrete oily matter lying in depressions of the surface. The only remarkable circumstance that we have observed connected with them is, that each spherule, when placed in water and slightly bruised, discharges an inconceivable quantity of active molecules."

14.—SALVIA FULGENS, Cav. THE BRILLIANT-FLOWERED SAGE.

SYNONYME.—*S. cardinalis*, *Hum. et Bonpl.*
 ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2nd ser., t. 59; and our *fig. 1*, in Pl. 83.

SPECIFIC CHARACTER.—Leaves cordate-ovate, crenate, woolly below. Flowers verticillate; bractees ovate, long, acuminate; calyx trifiid; helmet of the corolla hairy.

DESCRIPTION, &c.—The stem of this plant grows three or four feet high, and frequently more, dividing into numerous branches near the top. The stem is shrubby at the base, and the branches are thickly covered with white hairs, that are more or less bent at the points. The leaves are rugose, and hairy on both sides; but the hairs on the under side are so dense as to make the leaves appear white below. This superb species of *Salvia* is a native of Mexico, where it was found at an altitude of about 9000 feet above the level of the sea. It should be planted in the open border in a very rich soil, where it will grow luxuriantly, and flower nearly all the summer. It requires a slight protection during frosty weather, and it is propagated by cuttings, which should be kept in a cold frame or greenhouse during winter, and planted out in spring. It was introduced in 1827.

15.—SALVIA PATENS, Cav. THE SPREADING SAGE.

SYNONYME.—*S. spectabilis*, *H. B. et K.*; large blue Mexican Sage.

ENGRAVINGS.—*Bot. Mag.*, t. 3808; *Bot. Reg.* for 1839, t. 23; *Pact. Mag. of Bot.*, vol. vi., p. 1; and our *fig. 2*, in Pl. 83.

SPECIFIC CHARACTER.—Roots tuberous; leaves cordate or hastate, hairy above and pubescent below; flowers verticillate, in remote whorls; helmet of the corolla falcate; lower lip three-lobed.

DESCRIPTION, &c.—The roots of this very handsome species are tuberous, and the flowers are very large and showy. Dry tubers of it were first sent to this country, from Mexico, in the year 1838. The stems are somewhat shrubby at the base, and grow to a considerable height in rich soil. The flowers are of a most brilliant blue, and very handsome; but, unfortunately, they fall off soon after expanding. The species is generally increased by cuttings, or by dividing its roots. It grows best in a sheltered situation, as it is liable to be broken by high winds, and it requires a very rich soil.

16.—SALVIA CONFERTIFLORA, Benth. THE CROWDED-FLOWERED SAGE.

ENGRAVINGS.—*Bot. Reg.* for 1839, t. 29; and *Bot. Mag.*, t. 3899.
 SPECIFIC CHARACTER.—Stem suffruticose at the base, woolly; leaves

whitely tomentose below; flowers verticillate, indense many-flowered whorls.

DESCRIPTION, &c.—This is a very singular plant; the flowers are small, but they are of so bright a colour, and so numerous, as to have a very splendid appearance. There is a very beautiful variety in the Glasgow Botanic Garden, the flowers of which are of a brighter colour than those of the species. This plant is a native of Brazil, whence it was introduced in 1834. It requires protection during winter.

OTHER SPECIES OF SALVIA.

There are many other species of *Salvia* which are very ornamental; but, as they seldom live many years in the open ground in British gardens, it has not been thought worth while to describe them all in detail; and it may be sufficient to say here, that all the Mexican species, which are suffruticose at the base, will live in the open garden if they are protected during winter. The large-flowered kinds thrive much better in the open ground than in a greenhouse; but those species which have small flowers do not do so well, as they flower late in the autumn when the weather is too cold to bring them to perfection in the open air.

GENUS II.

MONARDA, *Lin.* THE MONARDA.*Lin. Syst.* DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx tubular, elongated, 15-nerved; five-toothed. Corolla with a dilated throat, and a bilabiate limb; lips nearly equal; upper lip erect, lower lip spreading, generally trifid. Stamens two, ascending, usually exerted from the upper lip of the corolla; anthers linear. Style bifid; stigmas very small. Seeds dry and smooth.

DESCRIPTION, &c.—The flowers of the species belonging to this genus are by no means remarkable for their beauty, and they generally consist of a few dense whorls, with large bracteas. They are also generally coarse-growing, and require a good deal of room in a garden. The name of *Monarda* was given in honour of Nicholas Monarda, a physician of Seville, in the sixteenth century.

1.—MONARDA DIDYMA, *Lin.* THE SCARLET MONARDA, OR OSWEGO TEA.

ENGRAVING.—*Bot. Mag.*, t. 546.

SPECIFIC CHARACTER.—Flowers with two filaments, as well as two

perfect stamens; stem acutely angular; leaves broadly lanceolate deeply serrated, and glabrous.

DESCRIPTION, &c.—The flowers of this plant are of as brilliant a scarlet as those of *Verbena Melindres*; and the bracts and leaves frequently partake of the same hue. The plant grows about two feet high, and it is very bushy. The leaves, when bruised, give out a delightful fragrance. It is a native of North America, whence it was introduced in 1755, by the celebrated Peter Collinson. It prefers a moist soil, increasing rapidly by its numerous shoots; which are, indeed, so numerous as to make it very difficult to eradicate the plant from any situation where it has once established itself.

2.—MONARDA FISTULOSA, *Lin.* THE FISTULOUS MONARDA.

SYNONYMS.—*M. altissima*, *Willd.*; *M. rugosa*, *Ait.*; *M. affinis*, *Link.*; *M. clinipodia*, *Pursh.*; *M. oblongata*, *Hort.*; *M. Kalmiana*, *Mx.*

ENGRAVING.—*Bot. Mag.*, t. 145.

SPECIFIC CHARACTER.—Flowers in one large terminal head; stem obtusely angular.

DESCRIPTION, &c.—This plant bears a strong family resemblance to the last, but the flowers are crimson instead of scarlet, and they are produced in one large terminal head, instead of being in several distinct whorls. The bracteas are also different. In other respects the plants are very similar; the leaves have the same fragrance, and the habit of growth is alike in both plants. The present species is a native of Canada, and was introduced in 1656.

3.—MONARDA MEDIA, *Willd.* THE PURPLE MONARDA.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 98.

SPECIFIC CHARACTER.—Stem obtusely angular, pubescent; leaves cordate-ovate, acuminate, sharply serrated, shining on the upper surface, and pubescent below. Flowers verticillate, in distant whorls;

bracts coloured, exterior ones ovate, acuminate, serrated; interior ones lanceolate-linear, entire; lower lip of the corolla with the middle lobe bifid.

DESCRIPTION, &c.—This species only differs from the common Oswego Tea in the flowers being purple instead of scarlet, in the central lobe of the lower lip being cleft, and in the stem being obtusely angular, instead of sharply so. It is, also, not quite so large a plant. It is a native of North America, and it is supposed to have been brought to this country in 1812.

4.—MONARDA MOLLIS, *Lin.* THE SOFT MONARDA.

SYNONYMES.—*M. allophylla*, *Michx.*; *M. purpurea*, *Pursh.*; *M. undulata*, *Reich.*; *M. oblongata*, *Ait.*; *M. fistulosa*, var. *maculata*, *Benth.*

ENGRAVING.—Bot. Mag., t. 3310.

SPECIFIC CHARACTER.—Leaves petiolate, ovate-lanceolate, rounded or subcordate at the base. Flowers in a terminal head, recurved.

DESCRIPTION, &c.—This is a very elegant species, with flowers of a light purple, spotted with a much darker shade of the same colour. The species is a native of New Orleans, whence it was introduced in the year 1832. The stem grows two or three feet high; but it is much more slender and graceful than that of most of the other species of the genus. The flowers are few, but they are pretty and elegantly disposed.

5.—MONARDA RUSSELLIANA, *Hook.* THE DOTTED-FLOWERED MONARDA.

ENGRAVINGS.—Bot. Mag., t. 2513; and our *fig. 4*, in Pl. 84.

SPECIFIC CHARACTER.—Stem acutely angled, with two deep grooves; leaves ovate, acuminate, rounded at the base; lower ones serrated,

upper ones entire. Flowers capitate; lower lip of the corolla curled inwards.

DESCRIPTION, &c.—This very distinct species is a native of North America, whence it was introduced in 1823. It is quite hardy in British gardens, though it does not blossom till late in autumn.

OTHER SPECIES OF MONARDA.

M. ARISTATA, *Nutt.* Bot. Mag., t. 3526.

A very pretty species, with rose-coloured flowers in distinct whorls, and leaves which smell like lemon. It is a native of Mexico, and also, it is said, of the Southern States of North America, whence it was introduced in 1823; but it appears to have been since lost.

M. PUNCTATA, *Lin.* Bot. Reg., t. 87

The flowers of this species are yellow, spotted with red, and the bracts are pink. The leaves smell like those of mint. It is a native of North America, whence it was introduced in 1714; but it appears to have been since lost.

There are several other names in catalogues, but they appear to be only synonymes of the plants already described. There is, indeed, a great confusion among the plants belonging to this genus, and some botanists make only two distinct species of the whole—viz., those with the flowers in terminal heads, and those with the flowers in several distinct whorls.



1 *Dracocephalum sibiricum*. — 2. *Dracocephalum Altaiense*. — 3 *Scutellaria alpina*.
4 *Monarda Russeana*

GENUS III.

SCUTELLARIA, *Lin.* THE SKULLCAP.*Lin. Syst.* DIDYNAMIA GYMNOSPERMIA.

GENERIC CHARACTER.—Calyx campanulate, bilabiate; lips entire, from the coalition of the sepals, closed, after the falling of the corollas, and at length cleft even to the base: superior lip furnished with a dilated scale at top, which is concave above, falling away at maturity: lower lip permanent. Tube of corolla much exerted, naked inside, straight or usually recurved; ascending beyond the calyx, dilated into the throat above; limb bilabiate; upper lip entire at apex, or emarginate; lower lip spreadingly dilated, convex, emarginate at apex; the lateral lobes sometimes free and spreading, but usually joined to the

upper lip, rarely to the lower lip. Stamens 4, ascending under the galea, didynamous; the two lower ones the longest. Anthers approximate by pairs, ciliated, those of the lower stamens dimidiate, and those of the superior stamens two-celled, cordate; cells sub-divaricate. Superior lobe of style very short; lower one stigmatiferous at top. Ovarium oblique, elevated upon the incurved gynophore. Achenia dry, naked, tubercled, glabrous or clothed with adpressed tomentum. (*G. Don.*)

DESCRIPTION, &c.—Nearly all the species belonging to this genus are perennials; generally with blue or yellow flowers, and with scarcely any bracteas. Most of the species are ornamental. The name *Scutellaria* signifies a little saucer, and has reference to the shape of the calyx.

1.—SCUTELLARIA GRANDIFLORA, *Sims.* THE LARGE-FLOWERED SKULLCAP.

ENGRAVING.—*Bot. Mag.*, t. 635.

SPECIFIC CHARACTER.—Leaves cordate, serrate, with long petioles.

Flowers in a very short spike; corolla hairy, four times longer than the calyx.

DESCRIPTION, &c.—This plant is a native of Siberia, and it is quite hardy in British gardens, where it is very suitable for rock-work, on account of its large pink and yellow flowers, its soft velvet-like leaves, and its dwarf stature. The flowers have no scent, and they, as well as the whole plant, are intensely bitter. It was introduced in 1804.

2.—SCUTELLARIA ALPINA, *Willd.* THE ALPINE SCUTELLARIA.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 90; and our *fig. 3*, in *Pl. 84*.

SPECIFIC CHARACTER.—Leaves cordate, sharply serrated. Flower spike imbricated; flowers twice as long as the bracts.

DESCRIPTION, &c.—This very pretty plant is quite hardy in British gardens, where it continues producing a succession of blossoms all the summer. According to the description of it given in *Sweet's British Flower Garden*, "it seldom exceeds six or nine inches in height; but the branches spread round to a considerable distance, so that it is requisite to cut it back in winter, to keep it within bounds. It succeeds well in the common garden soil, and will grow in rather a shady situation, where many plants that are more tender will not thrive. It is readily increased by dividing at the root, or by seeds, which ripen plentifully." It is a native of Hungary, and other parts of the Continent, whence it was introduced in 1752. There are several varieties; one with dark red flowers, and another, the flowers of which are yellow.

OTHER SPECIES OF SCUTELLARIA.

S. ORIENTALIS, *Lin.*, *Bot. Mag.*, 2120.

This species is a native of Greece. It has pale-yellow flowers, and is not remarkable for its beauty; but it is quite hardy in British gardens. It was introduced in 1721.

S. ALTAICA, *Fisch.*; Sweet's Brit. Flow. Gard., t. 45.

The flowers of this species are purple, with a yellow lip. The species is frequently sold for *S. orientalis*, but it is much handsomer, and quite distinct. It bears a much greater resemblance to *S. alpina*, and like that species it continues to blossom all the summer. It is a native of the Altaian Mountains, whence it was introduced in 1816.

S. LUPULINA, *Dec.*; Bot. Reg., t. 1493.

This is merely the yellow-flowered variety of *S. alpina*.

S. PEREGRINA, *Sibth.*; Sweet's Brit. Flow. Gard., t. 52.

This is the same species as *S. columnæ*. The flowers are tubular, and of a dark purple, shaded off to white at the base. The species is a native of Italy, whence it was introduced in 1806.

GENUS IV.

DRACOCEPHALUM, *Lin.* THE DRAGON'S HEAD.

Lin. Syst. DIDYNAMIA GYMNASPERMIA.

GENERIC CHARACTER.—Calyx tubular, 13-15-nerved, straight, rarely incurved, with a straight or equally five-toothed mouth; upper tooth the broadest, usually large; the three upper teeth sometimes joined into an upper lip. Corolla with the tube slender at the base, inclosed, or more often exerted, with a very wide throat, and a bilabiate limb; upper lip erect, rather concave, emarginate; lower lip

spreading, trifold, the middle lobe large, and rather bifid. Stamens four, didynamous; lower ones the shortest, ascending. Anthers approximating by pairs, two-celled; cells divaricate. Style bifid at top, and divided into two nearly equal parts; lobes subulate, stigmatiferous at apex. Achenia dry, smooth, naked. (*G. Don.*)

DESCRIPTION, &c.—All the species belonging to this genus are perennial plants, with the flowers in whorls, and with large leafy bracteas. The flowers are generally large and very handsome. The name of *Dracocephalum*, which signifies, literally, a dragon's head, has reference to the shape of the corolla.

1.—DRACOCEPHALUM GRANDIFLORUM, *Lin.* THE LARGE-FLOWERED DRACOCEPHALUM.

SYNONYME.—*D. altaicense*, *Lam.*; the Betony-leaved Dragon's-head.

ENGRAVINGS.—Bot. Mag., t. 1009; Sweet's Brit. Flow. Gard., 2d ser., t. 57; and our *fig. 2*, Plate 84, under the name of *D. altaicense*.

SPECIFIC CHARACTER.—Flowers in whorls; bracts oblong, mucro-

nately dentate; segments of the calyx equal. Radical leaves petiolate, cordate-oblong, obtusely dentate; stem leaves sessile, nearly round, but attenuated at the base, deeply toothed, with large, bluntish teeth.

DESCRIPTION, &c.—This species grows in short tufts, and is well deserving of cultivation from the extraordinary beauty of its flowers. It will, however, only grow well in a light, dry soil, and where it can have plenty of sun and fresh air. In any situation that suits it, it will grow at once without any trouble; and, therefore, when it is found not to succeed the first time of planting, it is of no use trying it again. It is a native of the Altaian Mountains, whence it was introduced in 1759.

2.—DRACOCEPHALUM PEREGRINUM, *Lin.* THE PILGRIM'S DRACOCEPHALUM.

ENGRAVING.—Bot. Mag., t. 1084.

SPECIFIC CHARACTER.—Flowers sub-spicate; bracts linear-lanceolate, somewhat spiny. Leaves lanceolate, remote, mucronately dentate.

DESCRIPTION, &c.—This species is remarkable for its prickly leaves and bracts, and for its flowers being produced in pairs. It is a native of Siberia, whence it was introduced in 1758. It is quite hardy, and may be propagated either by seeds, or by dividing its roots.

3.—DRACOCEPHALUM SPECIOSUM, *Swt.* THE BEAUTIFUL DRACOCEPHALUM.SYNONYME.—*Physostegia speciosa*, *Dec.*

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 93.

SPECIFIC CHARACTER.—Stem erect, obtusely quadrangular. Leaves lanceolate, sessile, sharply serrated.

DESCRIPTION, &c.—This very handsome species is the type of the new genus formed by Professor De Candolle, which is called *Physostegia*. The flowers are pinkish, and are disposed in regular panicles. Several stems grow from the same root to the height of three or four feet; and the plant is quite hardy. It should be grown in a light rich soil, and it is readily increased by dividing the root. The species is a native of North America; whence it was introduced in 1820.

4.—DRACOCEPHALUM SIBERICUM, *Lin.* THE SIBERIAN DRACOCEPHALUM.SYNONYMS.—*Nepeta macrantha*, *Deo.*; *Cataria montana*, *Bux.*ENGRAVINGS.—*Bot. Mag.*, t. 2185; and our *fig. 1*, in Plate 84.

SPECIFIC CHARACTER.—Flowers in whorls. Leaves lanceolate-cordate, acuminate, serrated, glabrous.

DESCRIPTION, &c.—This is a fine handsome plant, but with a very disagreeable smell, which has been compared, by some botanists, to rancid oil, and by others, to what is called stinking Horehound. The taste, when chewed, at first resembles that of peppermint, but it afterwards becomes bitter and nauseous. The species is a native of Siberia, whence it was introduced in 1760.

OTHER SPECIES OF DRACOCEPHALUM.

D. CORDATUM, *Nutt.*

This species is a native of North America, whence it was introduced in 1824. It is now frequently called *Cedronella cordata*.

D. CANARIENSE, *Lin.*

This plant is a native of the Canary Isles, whence it was introduced in 1697. Its common English name is, the Balm of Gilead, from its fragrance. De Candolle now calls it *Cedronella triphylla*.

D. DENTICULATA, *Lin.*

This species is now included in the genus *Physostegia*, together with several others nearly allied to it. They are all handsome plants with their flowers disposed in panicles, and well worthy of cultivation in every garden. Two other well-known species are now called *Physostegia imbricata*, and *P. virginiana*.

There are some other ornamental plants belonging to the order Labiatae; but they are generally either natives of Britain, or too coarse in their habit of growth to deserve a place in a lady's flower-garden.

CHAPTER XLI

VERBENACEÆ.

CHARACTER OF THE ORDER.—Calyx tubular, persistent, inferior. Corolla hypogynous, monopetalous, tubular, deciduous, generally with an irregular limb. Stamens usually four, didynamous, seldom equal, occasionally two. Ovary two or four-celled; ovules erect or pendu-

lous, solitary or twin: style one; stigma bifid or undivided. Fruit nucamentaceous, sometimes berried, composed of two or four nucules in a state of adhesion. Seeds erect, or pendulous; albumen none, or in very small quantity; embryo always erect. (*Lindley*).

DESCRIPTION, &c.—The plants belonging to this order are generally trees and shrubs which require a hot-house in British gardens. The largest tree is the Teak tree, which is used in India for building ships. The

only ornamental herbaceous plants belonging to the order are those included in the genus *Verbena*; and even these are generally shrubby at the base, and require protection during the winter. I have, however included the *Verbenas* in this work, as they flower perfectly well in the open ground during summer; and are so exceedingly ornamental, that no flower-garden is now considered complete without them.

GENUS I.

VERBENA, *Lin.* THE VERVAIN.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-cleft; corolla funnel-shaped, enclosed, when young, in a thin shelled pericarpium, which bursts, limb unequal, five-cleft. Stamens four, didynamous. Seeds four, and leaves them naked when ripe. Flowers paniculate or spicate.

DESCRIPTION, &c.—The botanic name of *Verbena* is derived from the English name Vervain, which is slightly altered from the Celtic name of the plant, Ferfaen or Witch's herb, from its being supposed to possess extraordinary powers in medicine. It was also used in incantations; and a bit of it tied round the neck was supposed to prevent the bite of a serpent from doing any injury, and to cure any infectious disease.

1.—VERBENA PANICULATA. *Lam.* THE PANICLED VERBENA.

ENGRAVING.—*Bot. Reg.*, t. 1102.

SPECIFIC CHARACTER.—Stem scabrous, ovate, lanceolate, acute,

unequally serrated; veins reticulated on the under side. Spikes filiform, and disposed in corymbose panicles. Flowers imbricated.

DESCRIPTION, &c.—This is not a handsome species, but it is a very curious one. It is a native of the high mountains of Virginia and Carolina, where it grows from 4 to 6 feet high. It was introduced in the year 1800, but it has never become common in British gardens, as it is more curious than beautiful.

2.—VERBENA STRICTA. *Vent.* THE UPRIGHT VERBENA.

SYNONYME.—*V. rigens*, *Michx.*

ENGRAVING.—*Bot. Mag.*, t. 1976.

SPECIFIC CHARACTER.—The whole plant is covered with whitish

hairs. Spike cylindrical. Leaves subsessile, ovate, serrated. Stem erect, round.

DESCRIPTION, &c.—This species is very different from the plants usually known as *Verbenas* in our flower-gardens, as the flowers are arranged in an upright cylindrical spike, instead of being in heads or panicles. The flowers are purple, and the segments of the limb are much sharper and narrower than those of *Verbenas* generally. The species is a native of Carolina, whence it was introduced in 1802. It requires abundance of fresh air, and a light soil. In favourable situations, it will produce several flower-spikes.

3.—VERBENA AUBLETIA. *Lin.* THE ROSE VERVAIN.

SYNONYMES.—*V. Oblætia*, *Retz.*; *V. longiflora*, *Lam.*; *Obletia vulgaris*, *Roz.*; *Glandularia caroliniensis*, *Gmel.*; *Anonymos caroliniensis*, *Walt.*; *Buchnera canadensis*, *Jacq.*; *Erinus laciniatus*, *Willd.*; *Lychnidea Verbenæ*, *Feuill.*

ENGRAVINGS.—*Bot. Mag.*, t. 308; *Bot. Reg.*, t. 294.

SPECIFIC CHARACTER.—Ascending. Leaves variously cut. Spike solitary, imbricated, many-flowered.

DESCRIPTION, &c.—This species was originally called the Rose Vervain, because its flowers formed a kind of cluster or rose. It is a native of North America, whence it was introduced by Monsieur Richard in 1774. It is generally considered a biennial, but it will live several years in the open ground, unless it happens to be killed by a severe frost. The flowers are purple, of various shades, some being almost red, and others nearly blue.



1. *Verbena Melindres* — 2. *Verbena leucroides* — 3. *Verbena Tricardiana*
4. *Verbena cerulescens*

4.—VERBENA LAMBERTI, *Sims*. MR. LAMBERT'S VERBENA.

SYNONYMS.—*V. bracteosa*, *Pursh*.
ENGRAVING.—*Bot. Mag.*, t. 2200.

SPECIFIC CHARACTER.—Stem quadrangular, hispid. Spike lax, solitary. Leaves oblong, sharply toothed.

DESCRIPTION, &c.—This plant is most probably only a variety of *V. Aubletia*, to which it is evidently very nearly allied. There is, however, a great confusion between these two species, and one called *V. Drummondii* in the nurseries; particularly as two very different plants appear to be known by the latter name. One of these is figured in the second series of Sweet's *British Flower-Garden*, as a variety of *V. Lambertii*; but it is extremely unlike that species, and bears much more resemblance to *V. Teucroides*. The other, *V. Drummondii*, is figured in the *Botanical Register*, as a variety of *V. Aubletia*, and it has a small loose spike of flowers, which are of a pale purplish blue, and are delightfully fragrant. All these plants appear to be natives of North America, and they are all hardy in British gardens. They are propagated by cuttings. *V. Lambertii* is said to have been introduced in 1816; and *V. Drummondii* in 1836.

5.—VERBENA MELINDRES, *Gillies*. THE SCARLET BUENOS AYRES VERBENA.

SYNONYMS.—*V. Chamædryfolia*, *Juss.*; *V. veronicæfolia*, *Smith*; *Lychnidea veronicæfolia*, *Feuill.*; *Erinus Peruvianus*, *Willd.*
ENGRAVINGS.—*Bot. Reg.*, t. 1184; *Bot. Mag.* 3333; Sweet's *Brit. Flow. Gard.*, 2nd ser., t. 9; *The Botanist*, vol. 3, t. 127; and our *fig. 1*, in Pl. 85.

oblong, acute, subpetiolate, grossly serrated, and, as well as the calyx, hispid; upper ones nearly entire. Flowers in a terminal many-flowered corymb, which lengthens into a spike after the flowers have expanded; tube of the corolla twice as long as the calyx; segments of the limb cuneate and emarginate.

SPECIFIC CHARACTER.—Stem ascending, hispidly pilose. Leaves

DESCRIPTION, &c.—This extremely beautiful species is a native of Buenos Ayres, and Paraguay, whence it was introduced in 1827; and it has since become such a favourite in our flower-gardens, as to be now well known in every part of the kingdom. As it hybridises freely, many kinds have been raised from it; none of which, however, are quite so beautiful as the species, though they have the advantage of being much hardier. The species itself will not bear an English winter without protection; but *V. M. latifolia* is as hardy as the common pink. *Melindres* is the aboriginal name of the plant at Buenos Ayres.

6.—VERBENA TEUCROIDES, *Gill et Hook* THE GERMANDER-LIKE VERBENA.

ENGRAVINGS.—*Bot. Mag.*, t. 3694; *Paxt. Mag. of Bot.*, Vol. V., p. 248; and our *fig. 2*, in Pl. 85.

SPECIFIC CHARACTER.—Stem erect, branched, clothed with rigid

glandular hairs. Leaves oblong-lanceolate, deeply-cut, sessile. Spike elongated, densely flowered. Calyx elongated, and becoming twisted with age, only half the length of the tube of the corolla.

DESCRIPTION, &c.—When this species of *Verbena* was first introduced in 1837, it was so highly praised that everybody was quite anxious to possess a plant. Experience, however, has shown that it by no means deserved the high commendations bestowed upon it, as it is coarse-growing, with weedy foliage, and no particular beauty in its flowers. It has, however, the advantage of being hardy, as, though it is a native of South America, it is only found on the summit of lofty mountains, generally ten thousand feet above the level of the sea.

OTHER SPECIES OF VERBENA.

V. INCISA, *Hook.*, *Bot. Mag.*, t. 3628.

This very pretty species has an upright habit of growth, pale pink flowers, and deeply cut leaves. It is a native of Santa Fé, whence it was introduced in 1836. It is very nearly hardy, and it will flower in the open ground from June till it is destroyed by frost.

V. TWEEDIANA, *Hook.*, *Swt. Brit. Gard.*, 2nd ser., t. 391 ; and our *fig. 3*, in Plate 85.

This is also an upright-growing species, which is very nearly hardy, and will live all the year in the open ground without protection, except in case of very severe frosts. It is a native of South America, whence it was introduced about 1830 ; and as it hybridises freely with both Melindres and the purple kinds, it has been the parent of many beautiful kinds of Verbena. The flowers are crimson, and they are disposed in a dense spike, which elongates as it becomes old. No plant can strike more readily from cuttings ; and, notwithstanding the upright habit of growth which is natural to it, no plant can better bear pegging down. It is a most valuable species for town gardens, as it can bear the smoke without injury ; and it is very useful to those who like to raise new plants, as it bears abundance of seed.

V. HASTATA, *Spring.*

This species is little known in British gardens, though it is said to have been introduced in 1710, from Canada, of which country it is a native. The flowers are purple, and the leaves halberd-shaped.

V. SCABRA, *Spring.*

A species with rough leaves and violet-coloured flowers ; a native of Mexico, whence it was introduced in 1822. It is, however, very seldom grown.

V. ALATA, *Swt.*, *Brit. Flow. Gard.*, 2nd ser., t. 41.

This species has winged stalks, and small purple flowers. It is a native of Monte Video, whence it was introduced in 1827. It has no beauty to recommend it.

V. SORORIA, *D. Don.*

A native of Nepaul, with lilac flowers, introduced in 1823. It is quite hardy in British flower-gardens, and soon covers a bed when pegged down. The mode of doing this is to spread the stalks of the plant over the bed, and cover all the joints with earth, fastening the stalk of the plant down to the ground on both sides of the joints with a little bit of forked stick. The joints thus covered will soon throw out roots, which will strike into the ground, while a shoot will rise upwards from the joint bearing a flower. When plants are to be pegged, they should be put into the ground above eighteen inches or two feet apart, or else they will grow erect, with long, naked, straggling stems, instead of becoming bushy and spreading.

V. SPURIA, *Spring.*

The flowers are lilac, and the leaves jagged. The species is a native of North America, whence it was introduced in 1731. It is generally considered a biennial, but it will sometimes live three or four years in the open ground.

V. RUGOSA, *D. Don*, Swt. Brit. Flow. Gard., 2nd ser., t. 318.

The flowers are dark purple, and the leaves ragged. The species is a native of Buenos Ayres, whence it was introduced in 1837. It is rather more tender than most of the other species of the genus, but it will flower well in the open air during the summer, if it be taken up in autumn, or protected in any way during the winter.

V. VENOSA, *Hook*, Swt. Brit. Flow. Gard., 2nd ser., t. 207.

This is a very robust species, with dark purple flowers, and abundance of coarse strongly-veined leaves. It is a free grower, and quite hardy in British gardens, though it is a native of Buenos Ayres, whence it was introduced about 1830. It is well adapted for covering a bed in a flower-garden, on account of the great rapidity of its growth.

V. PULCHELLA, Swt. Brit. Flow. Gard., t. 295.

A very pretty little plant, with lilac flowers; a native of Buenos Ayres, introduced in 1827.

V. SULPHUREA, *Lindl.*, Swt. Brit. Flow. Gard., 2nd ser., t. 221.

The flowers are of a pale yellow. The species is a native of Chili, and was introduced in 1834; it is only half-hardy in British gardens.

V. CANESCENS, *Spreng.*

A native of Mexico, with violet-coloured flowers, and leaves covered with a whitish down. It was introduced in 1820, and is quite hardy.

V. PROSTRATA, *Ait.*

A trailing plant, with lilac flowers; a native of North America, introduced in 1794.

V. BONARIENSIS, *Spreng.*

A native of Buenos Ayres, introduced in 1732; the flowers of which are blue, and are produced in clusters. It is quite hardy, but is only a biennial.

GARDEN VARIETIES OF VERBENA.

Besides the numerous species of Verbena, which have been above enumerated, and several others, to be found in books, though they are rarely seen in gardens, are the following varieties, and hybrids, the names of which are not to be found in the principal catalogues of plants, and which yet few flower-gardens are without.

V. ARRANIANA, *Hort.*

A very handsome upright-growing plant, with purple-crimson flowers. It is said to have been raised at the Earl of Arran's seat, at Bognor; and it is well deserving of cultivation, as it grows and flowers freely, though it is rather tender. It was raised about 1834.

V. CÆRULESCENS, *Hort.* Our *fig. 4*, in Pl. 85.

The flowers are produced in one thick elongated spike, and are of a pale blue. The plant grows and flowers freely, but is rather tender. It was raised about 1840.

V. FORMOSA, *Hort.*

The flowers are of a bright scarlet, with a white centre, and the plant is hardy.

V. FULGENS AND V. IGNEA

Have flowers of so deep a scarlet, as in some lights to appear nearly black; and

V. SPLENDENS

Has large flowers of a dazzling scarlet, but lighter.

CHAPTER XLII.

PRIMULACEÆ.

CHARACTER OF THE ORDER.—Calyx divided, five-cleft, seldom four-cleft; inferior, regular, persistent. Corolla monopetalous, hypogynous, regular; the limb five-cleft, seldom four-cleft. Stamens inserted upon the corolla, equal in number to its segments, and opposite them. Ovary one-celled; style 1; stigma capitate. Capsule opening with valves; placenta central, distinct. Seeds numerous, pellate; embryo included within fleshy albumen, and lying across the hilum; radicle with no determinate direction.

DESCRIPTION, &c.—All the species belonging to this order are herbaceous plants; generally of low stature, and with pretty flowers. They are most abundant in the temperate regions; and, when they grow within the Tropics, they are generally found on the sea-coast, or on the summit of lofty mountains. The name of Primulaceæ signifies the first, in allusion to most of the species flowering early in spring. Nearly all the plants belonging to this order are quite hardy in Great Britain.

GENUS I.

CYCLAMEN, *L.* THE SOWBREAD.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla rotate. Segments reflexed. Tube very short. Faux prominent. Stamens five. Anthers connivent. Stigma one. Scape one-flowered. Flowers naked.

DESCRIPTION, &c.—All the kinds of Cyclamen are generally easily recognised by the reflexed segments of the flowers. They have tuberous roots, and most of the species are natives of Europe. The word Cyclamen signifies a succession of circles, in allusion to the curious manner in which the flower-stalks curl up when the seeds begin to ripen; and the name of Sowbread alludes to the fondness of swine for the tubers of the Italian species.

1.—CYCLAMEN COUM, *Mill.* THE ROUND-LEAVED CYCLAMEN.

SYNONYMES.—*C. orbiculata*, *Bauh*; *C. hyemale*, *Herm.*

ENGRAVING.—*Bot. Mag.*, t. 4.

SPECIFIC CHARACTER.—Stemless. Leaves kidney-shaped; petioles shorter than the flower-stalks; flowers small; style enclosed.

DESCRIPTION, &c.—This species grows wild in many parts of Italy and Germany, in woods and shady places, where it sometimes flowers as early as February when the weather is mild. In British gardens, however, it seldom flowers before March or April, unless kept in pots. This plant cannot be increased by dividing the roots, as the principal root-stock is a kind of tuber resembling a turnip, and cannot be divided without injury; but the species is easily increased by seed, which should be sown as soon as it is ripe in pots or boxes. The boxes should then be placed where they will have only the morning sun till the beginning of September, when they will bear a warmer exposure. They may be slightly protected if the winter should be severe, and may be planted out early in spring, or left to flower where they were sown, as may be most convenient.

2.—CYCLAMEN VERNUM, *Mor.* THE SPRING CYCLAMEN.

SYNONYMES.—*C. vernale*, *Steud.*; *C. coum*, *Lodd.*

ENGRAVINGS.—*Lodd. Bot. Cab.*, t. 108; *Swt. Brit. Flow. Gard.*, t. 9; and our *fig. 3*, in *Pl. 86*.

SPECIFIC CHARACTER.—Sub-caulescent. Leaves cordate, subcrenulate, emarginate at the apex, sinus overlapping at the base; segments of the corolla oblong-ovate; style exerted.

DESCRIPTION, &c.—This species bears considerable resemblance to *C. coum*; but it differs in having a stem, though it is a very short one, and cordate leaves with the sides overlapping at the base. The species is a native of







1. *Dodecatheon Meadia*. — 2. *Cyclamen repandum*. — 3. *Cyclamen vernum*.
4. *Cyclamen persicum*. — 5. *Soldanella montana*.

the South of Europe, whence it was introduced in 1814. The following observations on its culture are taken from Sweet's British Flower Garden, Vol. I. :—

“It will succeed well in a warm border, in a light sandy soil; or it may be grown with advantage in small pots, in an equal mixture of loam, peat, and sand; it can then be protected under a frame in winter, during which time it requires very little water. The only method of propagating it is from seeds, which ripen plentifully, if care be taken to scatter some pollen on the stigma when in full bloom.”

3.—CYCLAMEN EUROPÆUM, *Ram. et Schult.* THE EUROPEAN CYCLAMEN.

ENGRAVING.—Sw. Brit. Flow. Gard., t. 176.

SPECIFIC CHARACTER.—Leaves orbiculate, cordate, crenate, and denticulate. Segments of the corolla lanceolate.

DESCRIPTION, &c.—The tuber of this species is large and rough, producing short rugged stems, from which spring the leaves and flowers. The leaves vary in form, but they are always toothed with short, unequal, horny teeth; and this is a peculiarity which always marks the species. The flowers are also much larger, with long narrow segments, which stand up like ears; and the flower-stalks are very long. The flowers are delightfully fragrant. The species is a native of Hungary and Switzerland, where it grows in a light sandy soil. It is quite hardy in British gardens; the only care it requires being to plant it in a situation where it will be tolerably dry during winter. It was introduced before 1596, and is consequently one of the oldest exotic flowers in British gardens.

4.—CYCLAMEN PERSICUM, *Mill.* THE PERSIAN CYCLAMEN.

ENGRAVINGS.—Bot. Mag., t. 44; and our *fig. 4*, in Plate 92.

SPECIFIC CHARACTER.—Leaves cordate, finely serrated. Segments of the corolla lanceolate, elongated.

DESCRIPTION, &c.—This is by far the most beautiful species of the genus; though, from being a native of the East Indies, it is rather tender in British gardens. On this account, it is generally cultivated in pots, which are plunged in the earth during the summer months, and kept in a cold pit during the winter. It is generally grown in a mixture of loam and lime rubbish; but the compost is improved by a mixture of decayed leaves. It is generally raised from seeds; but the plants vary very little from each other, the principal difference being in the degree of fragrance, and the dark colour of the eye. The flowers appear very early in spring. There are a great many varieties mentioned in botanical catalogues, one which has no scent; another is of a pure white, and the third, which is the only one really distinct, has deeply-cut petals, which are extremely broad, and have the appearance of being fringed. The whole plant is very large, and the corolla is never reflexed. This singular variety is figured in the *Botanical Register*, t. 1095. The species was introduced in 1731.

5.—CYCLAMEN REPANDUM, *Sibth.* THE ANGULAR-LEAVED CYCLAMEN.

SYNONYME.—*C. Hederifolium*, *Sims.*

ENGRAVINGS.—Bot. Mag., t. 1001; Sweet's Brit. Flow. Gard., t. 117; and our *fig. 2*, in Pl. 86.

SPECIFIC CHARACTER.—Leaves cordate, widely expanded at the

base, unequally angular, more or less denticulate with very small white teeth; petioles furrowed on the upper side, and rounded on the lower: clothed with minute tubercles and brown pubescence. Segments of the corolla oblong or obtuse.

DESCRIPTION, &c.—This very distinct species is easily recognised by the leaves, which are somewhat angular, instead of being rounded, as is generally the case with plants belonging to this genus. They are also blotched with white on the upper surface, and purple beneath. The flowers are very handsome, from the

richness of their colour, and they form an agreeable contrast to the Persian Cyclamen. They may be grown in pots in the same manner as that species, or in any warm border, provided the soil is light and somewhat sandy. The species is generally propagated by seed, which should be sown as soon as it is ripe. The species is a native of Greece, whence it was introduced about 1806. The flowers are delightfully fragrant.

OTHER SPECIES OF CYCLAMEN.

C. HEDERÆFOLIUM, *Lin.*

This is the common British species, of which there are two varieties; one with purple flowers, and another, the flowers of which are white.

C. NEAPOLITANUM, *Ten.*

This species has red flowers. It is a native of Naples, and was introduced in 1826. It is probably nearly allied to *C. repandum*.

C. LATIFOLIUM, *Sib.*

This species has lilac flowers, and broad leaves. It is a native of Greece, and was introduced in 1823.

GENUS II.

DODECATHEON, *Lin.* THE AMERICAN COWSLIP.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft, persistent, segments reflexed, only half the length of the calyx. Corolla five-parted, tube shorter than the calyx; limb reflexed; segments very long, lanceolate-oblong. Stamens five, filaments very short, united into a tube; anthers sagittate, conniving so as to form a beak. Style filiform; stigma obtuse. Capsule oblong, opening at the apex. Seeds numerous, very small. Involucre many-leaved, very small.

DESCRIPTION, &c.—The plants belonging to this genus are nearly all included in one species, which is known by the popular English name of the American Cowslip. The botanical name given to it by Linnaeus signifies Twelve Gods; but there seems no reason why it should be applied to this flower.

1.—DODECATHEON MEADIA, *Lin.* DR. MEAD'S AMERICAN COWSLIP.

ENGRAVINGS.—*Bot. Mag.*, t. 12; *Bot. Cab.*, t. 1489; *Sweet's Brit. Flow. Gard.*, 2nd ser., t. 60; and our *fig. 1*, in pl. 86.

SPECIFIC CHARACTER.—Leaves oblong-oval, repandedly dentate, and sinuated. Umbels many-flowered, lax; bracts oval, lanceolate.

DESCRIPTION, &c.—This well-known plant varies exceedingly when raised from seed; and there are, indeed, ten or twelve varieties, which are considered sufficiently distinct to be named. They are all more or less ornamental, and all perfectly hardy in British gardens; and they are propagated either by seeds, or by division of the roots. The species is a native of Virginia, whence it was introduced in 1744.

2.—DODECATHEON INTEGRIFOLIUM, *Michx.* THE ENTIRE-LEAVED AMERICAN COWSLIP.

ENGRAVING.—*Bot. Mag.*, t. 3622.

SPECIFIC CHARACTER.—Leaves spathulate, entire. Umbels small,

few-flowered; peduncles divaricate; bracts ovate. Filaments forming an elongated tube.

DESCRIPTION, &c.—This species was found by Dr. Richardson in the woody country of British North America, and by Mr. Drummond in the Rocky Mountains. It was introduced in 1829, but was probably soon lost; at least, it does not appear to have become common in collections. Another species was found

by Dr. Richardson on the Arctic shores, which closely resembled this in every respect, excepting that the anthers were sessile, instead of the filaments forming an elongated tube. Another species was found by Douglas in North-West America, but it does not appear to have been ever introduced.

GENUS III.

SOLDANELLA, *Lin.* THE SOLDANELLA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted, segments lanceolate. | Stigma simple. Capsule oblong, cylindrical, striated, opening at the
Corolla campanulate or funnel-shaped; segments deeply lacerated | apex into numerous valves. Seeds numerous, very small, acuminate.
or fringed. Stamens five, filaments adhering, anthers sagittate.

* DESCRIPTION, &c.—All the species belonging to this genus are little, tufted, stemless, plants, with roundish leaves, and pretty fringe-like flowers. The name of Soldanella signifies a little shilling, in allusion to the roundness and small size of the leaves. All the species are natives of Europe, and are quite hardy in British gardens.

1.—SOLDANELLA ALPINA, *Lin.* THE ALPINE SOLDANELLA.

ENGRAVING.—*Bot. Mag.*, t. 49.

SPECIFIC CHARACTER.—Leaves slightly cordate. Segments of the corolla fringed.

DESCRIPTION, &c.—This species is a native of Switzerland, whence it was introduced in 1656. The flowers are very pretty; but the segments are so slightly cut at the margin, as only to appear fringed. It flowers usually in March, in the open ground, and it thrives best under the shade of trees, as it requires shade and moisture during the summer. On account of its small size, it is, however, frequently grown in pots; and it requires a slight protection during very severe winters, as, like all Alpine plants in their native country, it is protected during the winter by the snow.

2.—SOLDANELLA MONTANA, *Willd.* THE MOUNTAIN SOLDANELLA.

SYNONYME.—*S. Clusii*, *Sims*.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 11; and our *fig. 5*,
in *Pl. 86*.

SPECIFIC CHARACTER.—Leaves reniform, slightly crenate, reticu-
lately veined; sinus overlapping at the base; petiole hairy. Scape
many-flowered.

DESCRIPTION, &c.—This species differs from *S. Alpina*, in being “more robust; in bearing more flowers on each scape; the segments of which are larger, and spread more flatly open; the termination of the filament beyond the anther is simple and subulate; and the petioles are densely hairy. In *S. Alpina*, the scape is few-flowered; the flowers are more finely fringed and bell-shaped; the filament beyond the anthers terminates in a bifid point; the leaves are narrower, more entire, and the petioles smooth.” The culture of this species resembles that of the preceding species, and both may be increased either by dividing the root or by seeds. In the latter case, the seeds should be sown as soon as they are ripe, and the young plants removed, while in their seed-leaf, to the pots in which they are to flower. The species is a native of Bohemia, and was introduced in 1816.

OTHER SPECIES OF SOLDANELLA.

S. PUSILLA, *Swt.*; Sweet's Brit. Flow., 2nd ser., t. 48.

A pretty little plant, with campanulate violet-coloured flowers, the segments of which are deeply, but very finely, cut. The species is a native of Switzerland, and it was introduced in 1824.

S. MINIMA, *Hoppe*; Sweet's Brit. Flow. Gard., 2nd ser., t. 53.

This species is a native of the Carpathian Mountains, whence it was introduced in 1820.

GENUS IV.

CORTUSA, *Lin.* THE BEAR'S-EAR SANICLE.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla funnel-shaped; ring of the faux elevated. Capsule one-celled, oval, opening at the apex into five valves, many-seeded.

DESCRIPTION, &c.—There is only one species in this genus; and the name of Cortusa is that of the botanist who first discovered it.

1.—CORTUSA MATTHIOLI, *Lin.* THE COMMON BEAR'S-EAR SANICLE.

ENGRAVING.—*Bot. Mag.*, t. 987.

SPECIFIC CHARACTER.—Calyx shorter than the corolla; corolla funnel-shaped.

DESCRIPTION, &c.—This plant, though it has been introduced more than two hundred years, is still comparatively rare in British gardens; and it has the peculiarity of standing alone in its genus, without any other species, or even variety. It is also remarkable for commemorating in its name the two botanists who introduced it to notice; viz., Cortusa, its discoverer, and Matthiolus, who first described it. The flowers are of a dark crimson, but they are rather small, and not remarkable for their beauty. The leaves are coarse-growing; but if they are applied to the cheeks, and left there for some minutes, they produce a most beautiful colour, equal in delicacy to the finest rouge, which remains for some hours, and then fades away, without the slightest injury to the skin. The plant is a native of Austria, whence it was introduced in 1596.

GENUS V.

PRIMULA, *Lin.* THE PRIMROSE.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Flowers subumbulate, involucreted. Calyx tubular, persistent, five-toothed, or five-cleft, angular. Corolla salver-shaped, or funnel-shaped; tube cylindrical, generally longer than the calyx; faux visible, or rather gland-like; limb spreading, five-lobed,

lobes emarginate. Stamens inclosed in the tube of the corolla. Stigma globose. Capsule 10-toothed at the apex, many-seeded; seeds numerous, subrotund.

DESCRIPTION, &c.—The genus Primula takes its name from Primus, the spring, in allusion to the early flowering of most of the species. Few genera contain more well-known flowers; and among these may be enumerated the Cowslip, the Primrose, the Polyanthus, and the Auricula. Nearly all the species of Primula are natives of Europe, with the exception of the Chinese Primrose, and two or three kinds brought from North America; and nearly all the kinds are hardy in British gardens.





1. *Primula praenitens* — 2. *Primula amara* — 3. *Primula sibirica*
4. *Primula ciliata*

1.—PRIMULA PRÆNITENS, *Ker.* THE CHINESE PRIMROSE.SYNONYME.—*P. sinensis*, *Lindl.*ENGRAVINGS.—*Bot. Reg.*, t. 539; *Bot. Mag.*, t. 2564; Sweet's
Brit. Flow. Gard., t. 196; and our *fig. 1*, in *Pl. 87*.

SPECIFIC CHARACTER.—Pubescent; umbel duplicate; calyx membranaceous, ovate, ventricose, many-cleft; capsule inflatedly distended; segments of the corolla sharply dentate.

DESCRIPTION, &c.—The Chinese Primrose was first known in this country from some dried specimens sent over by Mr. Reeves, a gentleman in the employment of the East India Company at Canton; but living plants were not introduced till 1820, when they were sent over by Captain Rawes, a gentleman to whom we owe the introduction of many beautiful Chinese plants. The species, when first introduced, was called *P. sinensis*; but it being found that Loureiro, the Portuguese botanist, had called another plant *Primula sinensis*, the Chinese Primrose received its present specific name, which signifies glossy, and seems very ill applied to a plant covered nearly all over with down. For many years after its introduction, the only varieties known of the Chinese Primrose were a kind with white flowers, and another, the flowers of which were much jagged or cut; but lately a great many varieties have been raised, some of which are double, or semi-double.

2.—PRIMULA CORTUSOIDES, *Lin.* THE CORTUSA-LEAVED PRIMROSE.ENGRAVING.—*Bot. Mag.*, t. 399.

SPECIFIC CHARACTER.—Leaves petiolate, cordate, sub-lobate, crenated.

DESCRIPTION, &c.—This is a very handsome little plant, a native of Siberia, whence it was introduced in 1794. The leaves are wrinkled, as is common in many kinds of *Primula*; but they present the peculiar shape of those of the *Cortusa*. It flowers in June and July, and is propagated either by seeds or by division of the root. In winter it loses its leaves entirely, and forms a tuberous hybernaculum under-ground, a circumstance the more necessary to be known, as it subjects the plant to be thrown away as dead.

3.—PRIMULA ACAULIS, *Jacq.* THE COMMON PRIMROSE.SYNONYME.—*P. vulgaris*, *Smith.*ENGRAVINGS.—*Bot. Mag.*, t. 229; and our *fig. 3*, in *Pl. 88*.

SPECIFIC CHARACTER.—Leaves rugose, dentate, hairy beneath; scape one-flowered.

DESCRIPTION, &c.—The common British Primrose is so well known, as scarcely to need description, and in their native state they are generally found to grow best in a stiff loam, and in a moist and somewhat shady situation. The single flower, being a common British plant, is rarely cultivated in gardens; but the double varieties are very common, and very much admired. There are several kinds; but the most common are the double lilac, the double crimson, and the double yellow. There is also a double scarlet, which is sometimes very dark and rich; and there is a double white, but this last is rarely met with.

4.—PRIMULA ELATIOR, *Smith.* THE OXLIP.ENGRAVINGS.—*Eng. Bot.*, t. 513, and 2nd ed., t. 276.

SPECIFIC CHARACTER.—Leaves ovate, contracted below the middle,

toothed, wrinkled; limb of the corolla flat, as long as the tube; teeth of the calyx subulate; umbel upon a long stalk.

DESCRIPTION, &c.—The Oxlip is much less common than either the Cowslip or the common Primrose; and it has, indeed, been sometimes supposed to be a natural hybrid between these two plants. The species is seldom cultivated in gardens; but its well-known variety, the Polyanthus, with its numerous sub-varieties, are some of our most favourite garden flowers. One of these, figured in Plate 88, is Burnard's *formosa*; and this

plant is said to have produced so much as to enable its owner to build a cottage with his profits. All the kinds of Polyanthus are considered florist's flowers, and they require to be grown in a rich loamy soil, and to be freely exposed to the sun and air. The colour of the Polyanthus is always yellow and brown, and those flowers are most esteemed that have the limb of the corolla flat, and its margin marked with a clear yellow line. The anthers of the stamens should also completely hide the pistil, as, when the stigma projects, which it does occasionally, like the head of a large pin, the flower is called pin-eyed, and is considered worthless. There is a double Polyanthus; but it is considered of little value in comparison with the finely marked single kinds.

5.—PRIMULA AMÆNA, *Bieb.* THE PURPLE CAUCASIAN PRIMROSE.

ENGRAVINGS.—*Bot. Mag.*, t. 3252; and our *fig. 2*, in Pl. 87.

SPECIFIC CHARACTER.—Leaves spatulate-oblong, rugose, crenately denticulate, hairy, and woolly below; umbels many-flowered; involu-

cre subulate; Calyx ovate-oblong, angular; limb of the corolla smooth; tube longer than that of the calyx.

DESCRIPTION, &c.—This very handsome species is a native of Mount Caucasus, whence it was introduced by Mr. Goldie, of Ayr. It is quite hardy in British gardens, producing masses of flowers if grown in a rich loamy soil. It may be propagated by seeds or by division of the roots.

6.—PRIMULA AURICULA, *Lin.* THE AURICULA.

ENGRAVING.—Our *fig. 2*, in Pl. 88.

SPECIFIC CHARACTER.—Leaves obovate, smooth, serrated; scape many-flowered, about equal in length to the leaves.

DESCRIPTION, &c.—The Auricula is a native of the Alps of Switzerland, and the mountainous countries adjoining it, whence it was called, when first introduced in 1596, the Mountain or French Cowslip. It was also called Bear's-ear or Oricola, whence the modern name of Auricula. It very soon became a favourite garden flower; in 1629, Parkinson enumerates 20 varieties, which he says are the best, though "many other varieties were to be found with those who are curious conservers of these delights of nature." The florists in the beginning of the last century were very particular in the culture of the Auricula; and many elaborate directions have been given for preparing soil for the Auricula, adding to it bullock's blood, sugar baker's scum, and concentrated night-soil. The plants will, however, thrive in any rich, loamy soil, with a slight mixture of sand. They will, however, grow in heath soil mixed with loam; and this is what is usually given to them in the neighbourhood of Paris. Though the Auricula is quite hardy, all the choice varieties of it are grown in pots, in order that they may be more completely under the control of the cultivator. It is also necessary to keep them in frames, or under hand-glasses, to protect them from the rain, as that would destroy the powdery bloom, the preservation of which is a desideratum among florists. The Auricula is propagated by division of the root, or by cutting off slips with a portion of the root attached, and putting them at once into small pots. The season for performing the operation is soon after the flowers have gone off. Auriculas, when grown as florist's flowers, have almost innumerable names; but they are all divided into three classes, viz., those with a green border and a white centre; those with a grey border and a white centre, and those which have only one colour, which last are called selfs. Like the Polyanthus, no Auricula is valued that has a pin-eye.



1 *Primula elatior* var *polianthus* (Bernard's formosa), 2. *Primula auricula* (the conqueror of Europe),
 3. *Primula vulgaris* (4 double varieties).

7.—PRIMULA SIBIRICA, *Jacq.* THE SIBERIAN PRIMROSE.SYNONYMS.—*P. rotundifolia*, *Pall.*; and *P. intermedia*, *Lede.*ENGRAVINGS.—*Bot. Mag.*, t. 3167, and 3445; and our *fig. 3*, in Pl. 87.

SPECIFIC CHARACTER.—Smooth, naked. Leaves oval, or subrotund,

petiolate, and slightly crenated; umbel few-flowered, loose, and nodding; involucre divided into four oval, acute leaflets, which are spurred at the base.

DESCRIPTION, &c.—This is a very pretty species, and it has the advantage of being quite hardy in British gardens. It is a native of Siberia, whence it was introduced in 1818; and it is easily distinguished from all the other species of *Primula*, by its inflated calyx, the leaflets of which are swelled out at the base. The flowers of this species are produced in April or May.

8.—PRIMULA CILIATA, *Schrank.* THE FRINGED AURICULA.SYNONYMS.—*P. villosa*, *Suter*; *P. decora*, *Sims.*ENGRAVINGS.—*Bot. Mag.*, t. 1922; *Sweet's Brit. Flow. Gard.*, 2nd ser., t. 123 and 296; and our *fig. 4*, in Pl. 87.

SPECIFIC CHARACTER.—Leaves obovate, cuneiform, slightly glutinous,

opaque, and covered all over with very short fine hairs; scape angular, many-flowered; calyx short, campanulate, angular, and fringed with fine hairs like the leaves.

DESCRIPTION, &c.—This species is very nearly allied to the Auricula. There are two distinct varieties of it, one with pink flowers, figured in Plate 87, and another with purple flowers, which is much the handsomest. Both kinds are quite hardy in British gardens, and they require no particular care in their culture.

OTHER SPECIES OF PRIMULA.

These are very numerous. Indeed, more than twenty species might be enumerated, all of which are well deserving of cultivation.

CHAPTER XLIII.

IRIDACEÆ.

CHARACTER OF THE ORDER.—Calyx and corolla superior, confounded, their divisions either partially cohering, or entirely separate, sometimes irregular, the three petals being sometimes very short. Stamens three, arising from the base of the sepals; filaments distinct or connate; anthers bursting externally lengthwise, fixed by their base, two-celled.

Ovary three-celled, cells many-seeded; style one; stigmas three, often petaloid, sometimes two-lipped. Capsule three-celled, three-valved, with a loculicidal dehiscence. Seeds attached to the inner angle of the cell, sometimes a central column, becoming loose; albumen corneous, or densely fleshy; embryo inclosed within it.—(*Lindley.*)

DESCRIPTION, &c.—This order is almost entirely confined to herbaceous plants, some of which have bulbous roots; but others have fibrous roots. Those with bulbous roots have been already described in the volume of this work devoted to plants of that nature; and in the present work I shall only describe a few of the more ornamental of the fibrous rooted species belonging to the genera *Iris* and *Sisyrinchium*.

GENUS I.

IRIS, *Lin.* THE FLOWER DE LUCE, OR FLAG-FLOWER.*Lin. Syst.* TRIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Spathe two-valved, one, or many-flowered. Perianth large, and six-parted; three of the segments erect, and the three alternate ones reflexed. The stamen bearing segments, bearded

or not bearded. Style short. Stigmas three, petal-like, large, oblong, lying over the stamens.

DESCRIPTION, &c.—All the species of *Iris* are remarkable for the beauty of their flowers. They have all a curiously folded leaf-like stem, called a spathe, from which the flower issues; and the flower itself consists of six

divisions, three of which stand erect, and are called by modern botanists the corolla; and the other three, which are bent back, are called the calyx. Besides these, there are three other leafy bodies, which are, in fact, the stigmas, and under each of which lies a stamen. All the fibrous-rooted kinds of *Iris* are furnished with a fleshy underground stem, called a rhizoma, or root stalk; and the leaves of nearly all the species are sword-shaped, like those of most kinds of bulbs. The word *Iris* signifies a rainbow, and is applied to this genus in allusion to the various colours of the flowers.

1.—*IRIS SUSIANA*, *Lin.* THE CHALCEDONIAN *IRIS*.

ENGRAVINGS.—*Bot. Mag.*, t. 91; and our *fig. 1*, in Pl. 89.

SPECIFIC CHARACTER.—Leaves ensiform, glabrous; scape one-flowered; flower bearded; petals roundish.

DESCRIPTION, &c.—This splendid plant is a native of Persia; and from Susiana, one of the cities in that country, it takes its name. It grows about two feet high, and flowers freely in the open air in Britain about the latter end of May, or the beginning of June. It should be grown in a loamy soil, and in an open situation, where it is freely exposed to the sun and air; and it will not thrive in close town gardens, or in any situation where it is exposed to a smoky atmosphere, or too much moisture. It is generally propagated by taking off the new tubers that it forms every year; but as these are rarely brought to perfection in this country, for want of heat in our summers, tubers are every year imported from Holland. This species is called in the old books the great Turkey flower de luce, because it was first imported into this country from Constantinople. It was introduced in 1573.

2.—*IRIS FLORENTINA*, *Lin.* THE FLORENTINE *IRIS*.

SYNONYME.—*I. alba*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.*, t. 671; and our *fig. 2*, in Pl. 89.

SPECIFIC CHARACTER.—Leaves glaucous, shorter than the stem;

spathe membranaceous, one or two-flowered, shorter than the tube; segments of the calyx revolutely deflexed; stigmas oblong; segment of the corolla erect, and curving inwards.

DESCRIPTION, &c.—The root stock of this species, which is thick, fleshy, and creeps horizontally along the ground, forms the powder known as orrice powder or orrice root in the shops, which is frequently used to give fragrance to tooth-powder, from its possessing a strong scent of violets. Orrice root is a corruption of *Iris* root; but that used by the perfumers is all imported from Leghorn, as what is produced in this country has scarcely any fragrance. The colour called Verdelis, or *Iris* green, is made from the flowers of this species, and those of *I. germanica*. The Florentine *Iris* is a native of Italy, and other parts of the South of Europe, and it takes its name from its growing in great abundance on the walls of Florence. It has also been found in Algiers, where it is grown with *I. germanica*, to cover graves. It was introduced before 1596, and it is quite hardy in British gardens.

3.—*IRIS GERMANICA*, *Lin.* THE COMMON PURPLE, OR GERMAN *IRIS*.

SYNONYMS.—*I. sambucina*, *Thunb.*; *I. aqualens*, *Mill.*; *I. cœrulea*, *Wein.*; *I. silvestris*, *Bauh.*; *I. vulgaris*, *Ger.*; *I. latifolia*, *Clus.*; *I. purpurea*, *Park.*

ENGRAVING.—*Bot. Mag.*, t. 670.

SPECIFIC CHARACTER.—Spathe partly herbaceous, and partly membranaceous; one or two-flowered, including the tube of the flower; leaves acuminate, shorter than the stem.

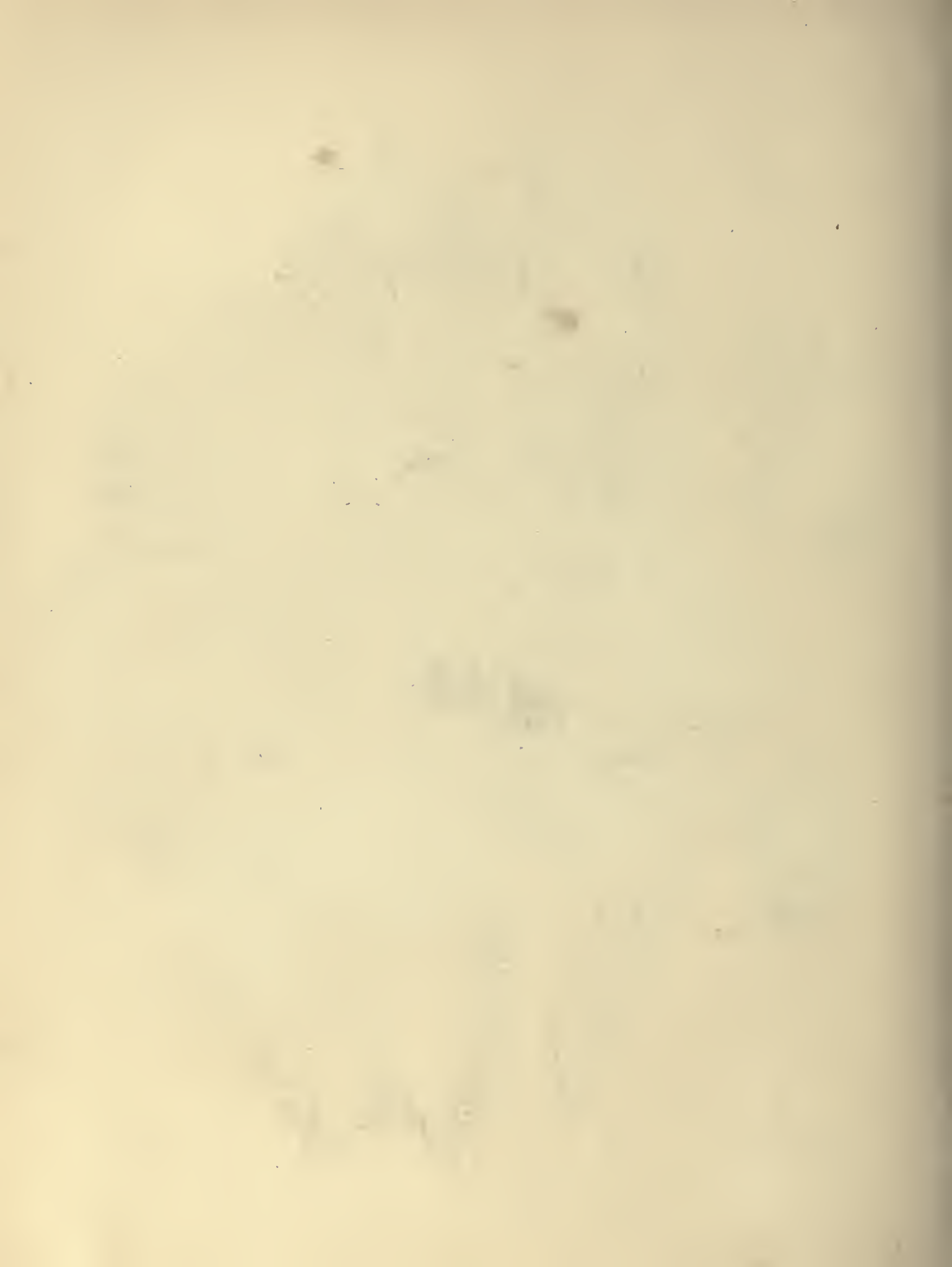
DESCRIPTION, &c.—This species bears considerable resemblance to the last, excepting that the flowers are purple instead of white, and that the root stock is not sweet scented; and if chewed it will be found to be slightly bitter, and to produce a most disagreeable heat in the throat. This is the commonest species of *Iris* in British







1 *Iris susiana*. — 2 *Iris florentina*. — 3. *Iris Nepalensis*.
4. *Iris tridentata* — 5. *Iris verna*.



gardens; and it is propagated by dividing its roots in autumn. It is perfectly hardy, and it flowers in May and June. It is a native of Germany, whence it was introduced before 1596.

4.—IRIS TRIDENTATA, *Pursh.* THE THREE-TOOTHED IRIS.

SYNONYME.—*I. tripetala*, *Walt.*

ENGRAVINGS.—*Bot. Mag.*, t. 2886; *Sweet's Brit. Flow. Gard.*, t. 274; and our *fig. 4*, in *Pl. 89*.

SPECIFIC CHARACTER.—Leaves linear-ensiform, acuminate; stem

round, leafy, generally one-flowered, and longer than the leaves; perianth not bearded; inner segments very short, unequal, three-toothed; stigmas three, or sometimes four, having a tooth on each side of the base; capsule triangular.

DESCRIPTION, &c.—This is a remarkable species, both in form and colour. The segments of the corolla are so small that they lose their ordinary character, and the stigmas appear to be the petals. The leaves are narrow and grass-like. The flowers begin to appear in July, and continue till October. The species is a native of North America, and was introduced in 1824.

5.—IRIS VERNA, *Michx.* THE SPRING IRIS.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 68; and our *fig. 5*, in *Pl. 89*.

SPECIFIC CHARACTER.—Stemless; one-flowered; leaves linear-ensiform, more than twice as long as the flower scape, coriaceous, acute,

slightly glaucous; scape sheathed at the base with small leaf-like bracts; segments of the perianth all nearly equal in size; capsule obsoletely triangular.

DESCRIPTION, &c.—This species has neither root-stalk nor tubers; but it has a creeping, underground stem, from each joint of which proceeds a flower stem, with a single flower, and two or three leaves. From this habit of growth it will be seen that, in favourable situations, *Iris verna* will soon cover a bed with flowers; which, from their dwarf stature, compact, elegant form and lively colours, have an extremely agreeable appearance. The species is a native of North America, whence it was introduced in 1748. It will grow in almost any soil and situation; and it is propagated by dividing its creeping stem.

6.—IRIS NEPALENSIS, *D. Don.* THE NEPAL IRIS.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, 2nd ser., t. 11; and our *fig. 3*, in *Pl. 89*.

SPECIFIC CHARACTER.—Beard crested; leaves linear-ensiform, flat,

strongly nerved, and terminating in a slender mucro; perianth tubular, elongated; segments of the limb all spreading, and more or less reflexed; stigmas fringed; stem round, few flowered, shorter than the leaves.

DESCRIPTION, &c.—The roots of this species are fleshy, and they are produced in fascicles like those of the *Dahlia*. The flowers are generally of a pale blue; but they frequently assume a much darker tint. The species is a native of Nepal, whence it was introduced in 1830; and not, as it is stated in some of the catalogues, in 1824. A great confusion, indeed, exists respecting this species, in the nurseries; as another kind, with much larger flowers, is frequently called *I. Nepalensis*. The present species is quite hardy in British gardens.

OTHER SPECIES OF IRIS.

These are so very numerous, that the limits of the present work will not allow of their being given in detail. They are all natives of temperate climates, and consequently hardy in British gardens; and the colours of their flowers are yellow, blue, violet, purple, and white.

GENUS II.

SISYRINCHIUM, *Lin.* THE SISYRINCHIUM.*Lin. Syst.* MONADELPHIA TRIANDRIA.

GENERIC CHARACTER.—Perianth regular, and divided into six equal parts. Stamens three, monadelphous; anthers versatile. Stigmas three, simple. Capsule turbinate, three-celled, three-valved, many-seeded. Seeds roundish, smooth, black.

DESCRIPTION, &c.—Most of the plants belonging to this genus are too tender to bear the climate of Britain, without protection; but some few of the species are natives of North America, and are perfectly hardy in the open air. The name of *Sisyrrinchium* signifies a hog's snout; and it is said to allude to pigs being so fond of the fleshy roots, as to dig them up and devour them, whenever they have an opportunity.

1.—SISYRINCHIUM GRANDIFLORUM, *Lindl.* THE LARGE-FLOWERED SISYRINCHIUM.

ENGRAVINGS.—*Bol. Reg.*, t. 1364; *Sweet's Brit. Flow. Gard.*, 2nd ser., t. 388; and in our *fig. 4*, Pl. 90.

SPECIFIC CHARACTER.—Scape and leaves cylindrical, hollowed, and

furrowed. Segments of the perianth obcordate; filaments free above, and connate below.

DESCRIPTION, &c.—This plant, when not in flower, looks like a tuft of bluish-green grass; but when the flowers expand, it has a very different appearance, as they are large in proportion to the scapes from which they spring, and they are of a rich, dark purple. The species is a native of California, and it is one of the first plants sent home from that country, having been introduced in 1826. The plant is quite hardy in British gardens. It should be grown in a mixture of peat and loam, and is readily multiplied by division of the root, or by seeds.

OTHER SPECIES OF SISYRINCHIUM.

There are four or five other species of this genus that are natives of North America, and consequently hardy in British gardens; but their flowers are too small in proportion to their leaves, for them to be considered as ornamental plants.

CHAPTER XLIV.

HEMEROCALLIDEÆ.

CHARACTER OF THE ORDER.—Calyx and corolla confounded, cohering into a tube. Stamens six, inserted in the segments of the perianth. Anthers opening inwards. Ovary superior, three-celled, many-seeded; style one; stigma simple. Fruit succulent, three-celled. Seeds packed one upon another in one or two rows; seed-coats soft and pale.

DESCRIPTION, &c.—The principal genera contained in this order, which include ornamental plants hardy in British gardens, are *Hemerocallis* and *Funkia*, which were both formerly included in the genus *Hemerocallis*. There is another genus, called *Tritoma*, which contains hardy plants; but the flowers, though singular, can scarcely be called ornamental.



1 *Tradescantia virginica*. — 2 *Commelina ciliata*. — 3 *Funkia foliosa*.
4 *Scyrinchium grandiflorum*.



GENUS I.

HEMEROCALLIS, *Spreng.* THE DAY LILY.*Lin. Syst.* HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth campanulate; tube cylindrical. Stamens six; filaments long, declining. Stigma very small, simple, hairy.

DESCRIPTION, &c.—This genus differs very slightly from *Funkia*, which has been separated from it. It takes its name from two Greek words, signifying, The Beauty of the Day. The species still left in *Hemerocallis* have yellow orange flowers; and those which compose the genus *Funkia*, have flowers which are either lilac or white. All the species have lily-like flowers, and are quite hardy in British gardens.

1.—HEMEROCALLIS GRAMINEA, *Andr.* THE GRASS-LEAVED DAY LILY.

SYNONYMS.—*H. flava*, var., *Willd.*; *H. minor*, *Mill.*

ENGRAVINGS.—*Bot. Mag.*, t. 873; *Bot. Rep.*, t. 244.

SPECIFIC CHARACTER.—Leaves triangular, furrowed, very narrow.

Bracts membranaceous, very short. Corolla campanulate; segments elliptic-ovate, undulately crisped at the margin; pistil shorter than the corolla.

DESCRIPTION, &c.—The flowers of this species are of a bright yellow, and they are slightly fragrant. In form, they resemble small lilies. The species is a native of Siberia, whence it was introduced in 1759. It is quite hardy in British gardens, where it will grow in any soil and situation not immediately under the drip of trees.

2.—HEMEROCALLIS FLAVA, *Lin.* THE YELLOW DAY LILY.

SYNONYME.—*Lilium luteum*, *Bauh.*

ENGRAVING.—*Bot. Mag.*, t. 19.

SPECIFIC CHARACTER.—Leaves linear, subulate, keeled; flower yellow.

DESCRIPTION, &c.—This was the first species of the genus introduced, and it was from the short duration of its blossoms that the species received its popular English name of the Day Lily. The flowers are delightfully fragrant. This species is a native of Hungary, and bears the climate of Britain exceedingly well; but it requires a moist soil and somewhat shady situation to make it flower freely. It is propagated by dividing its roots in the autumn. It was introduced before 1596.

3.—HEMEROCALLIS FULVA, *Lin.* THE COPPER-COLOURED DAY LILY.

SYNONYMS.—*H. disticha*, *Donn*; *Lilium rubrum*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.*, t. 64; and our *fig. 3*, in *Pl. 90*, under the name of *Funkia fulva*.

SPECIFIC CHARACTER.—Leaves linear, subulate, keeled; flower copper-colour.

DESCRIPTION, &c.—It has been observed that almost the only instances in which Linnæus has mentioned the colour of the flower as a part of the specific character of a plant, occur in this and the preceding species; and it has been alleged on this account, that Linnæus considered them as only varieties. The flowers, however, of this species are nearly twice as large as those of *H. flava*. They have no gloss, and no fragrance. The leaves of this species are, however, very handsome, and when they first appear they are of so delicate a green, as to be considered nearly as handsome as the flower. This plant is a native of China, and was introduced before 1596. This species does not ripen seeds so well as *H. flava*; but it sends up an abundance of offsets, and spreads so fast as to render it difficult to eradicate it when once thoroughly established.

GENUS II.

FUNKIA, *R. Br.* THE PURPLE DAY LILY.*Lin. Syst.* HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth funnel-shaped, deciduous. Stamens six, inserted in the middle, or at the base of the tube, declining. Anthers incumbent; cella parallel, connate. Style declining. Stigma club-shaped, undivided, trigonal. Capsule turbinate oblong, three-celled, three-valved, many seeded. Seeds disposed in a double row. Embryes from six to ten.

DESCRIPTION, &c.—This genus contains the purple and white species formerly included in the genus *Hemerocallis*. All the species are natives of Japan. The genus was named after H. C. Funk, an apothecary in Prussia, who discovered several new mosses, and published some illustrations of the Cryptogameous plants of Germany.

1.—FUNKIA SUBCORDATA, *Spreng.* THE SWEET-SCENTED DAY LILY OF JAPAN.

SYNONYMES.—*Hemerocallis japonica*, *Lin.*; *H. alba*, *Andr.*; *Aletria japonica*, *Houtt.*; *Jocksan*, *Kämpf.*

ENGRAVINGS.—*Bot. Mag.*, t. 1433; and *Bot. Rep.*, t. 194.

SPECIFIC CHARACTER.—Leaves broadly ovate-acute, with petioles

sheathing the stem; strongly nerved, subundulated at the margin; raceme many flowered; corolla somewhat campanulate, with a recurved limb.

DESCRIPTION, &c.—This is a very handsome species. The leaves are numerous, and from two to six inches broad. The flowers are of a pure white, very fragrant, and frequently six inches long. The anthers are of a golden yellow. It is a native of China and Japan, whence it was introduced in 1790. It is quite hardy in British gardens; but it does not blossom there till September or October.

2.—FUNKIA OVATA, *Spreng.* THE OVATE-LEAVED FUNKIA, OR PURPLE CHINESE DAY LILY.

SYNONYMES.—*Hemerocallis cœrulea*, *Andr.*; *H. japonica*, var. *Willd.*

ENGRAVINGS.—*Bot. Mag.*, t. 894; *Bot. Rep.*, t. 6.

SPECIFIC CHARACTER.—Leaves petiolate, ovate, acuminate, somewhat plicate, strongly nerved; bracts membranaceous; raceme many flowered; tube of the corolla cylindrical, sulcate; limb campanulate.

DESCRIPTION, &c.—This is the common purple Day Lily. It is a native of China, and was introduced about 1790. It is quite hardy in British gardens; and will bear the smoke of London without receiving any injury.

OTHER SPECIES OF FUNKIA.

F. SIEBOLDTIANA, *Lodd. Bot. Cab.*, t. 1869; and *Bot. Mag.*, t. 3663.

This is a very beautiful species with white flowers, bearing a considerable resemblance, though of a smaller size, to those of the common Japan Day Lily. It is a native of Japan, and was introduced about 1830.

F. ALBO-MARGINATA, *Hook.*, *Bot. Mag.*, t. 3657.

This appears to be a hybrid between the purple and the white Japan Day Lily, as the flowers are purple, edged with white. The leaves have also a white margin, and are remarkable for the extreme length of their petioles.

CHAPTER XLV.

COMMELINACEÆ.

CHARACTER OF THE ORDER.—Sepals three, distinct from the petals, herbaceous. Petals coloured, sometimes cohering at the base. Stamens six, or a smaller number, hypogynous, some of them either deformed or abortive. Ovary three-celled, with few-seeded cells; style one; stigma one. Capsule two or three-celled, two or three-valved, the valves bearing the disseminants in the middle. Seeds often twin, inserted by their whole side on the inner angle of the cell, whence the hilum is linear; embryo pulley-shaped, antitropous, lying in a cavity of the albumen remote from the hilum; albumen densely fleshy. (*Lindley.*)

DESCRIPTION, &c.—All the plants belonging to this order are herbaceous, and their leaves generally sheath the stem at the base. Most of the species are natives of hot countries, and the only two genera which contain hardy ornamental herbaceous plants are *Tradescantia* and *Commelina*.

GENUS I.

TRADESCANTIA, *Lin.* THE SPIDER-WORT.

Lin. Syst. HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth deeply six-parted, the inner segments petal-like, and the outer ones forming a kind of calyx. Stamens six, spreading; filaments fringed with articulated hairs; anthers two-lobed, crescent-shaped; pollen bright yellow. Capsule three-celled.

DESCRIPTION, &c.—Most of the species belonging to this genus are stove plants in British gardens. A few kinds, however, are hardy. The name of *Tradescantia* was given to this genus, in honour of John Tradescant, gardener to Charles I., in whose time the first species introduced was brought to England. The name of Spider-wort alludes to the appearance presented by the leaves of the plant when broken; which, from their brittle and fleshy nature, often is the case. When this occurs, if the two broken parts of the leaf are drawn slowly apart, the spiral vessels are distinctly visible to the naked eye, and look very much like spiders' threads.

1.—TRADESCANTIA VIRGINICA, *Lin.* THE COMMON SPIDER-WORT.

ENGRAVINGS.—*Bot. Mag.*, t. 105; and our *fig. 1*, in Pl. 90.

SPECIFIC CHARACTER.—Stem erect; scape many-flowered.

DESCRIPTION, &c.—This is a well-known plant, which has been common in British gardens for more than 200 years; having been introduced by John Tradescant, gardener to Charles I., about 1629. There are several varieties, one of which has purple flowers, and another white flowers; the flowers of the species being of a beautiful bright blue. The flowers are very ornamental, but last a very short time. The plant is a native of Virginia, and it is quite hardy in British gardens. It is propagated by dividing the roots.

OTHER SPECIES OF TRADESCANTIA.

T. ROSEA, *Michx.*; *Sweet's Brit. Flow. Gard.*, t. 183.

A pretty little plant, with small rose-coloured flowers, which it produces from August till October. It is a native of Carolina, whence it was introduced in 1802. It grows best in peat.

T. SUBASPERA, *Ker.*; *Bot. Mag.*, t. 1597.

A very handsome species, from its smooth dark green leaves and rich purple flowers. The stamens are very conspicuous, from their golden-yellow anthers. The stigma is white, and the pedicles to the flowers are of a bright pink. It is a native of North America, whence it was introduced in 1812.

GENUS II.

COMMELINA, *Lin.* THE COMMELINA.

Lin. Syst. TRIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth six-parted, unequal; the three outer leaflets having the appearance of the calyx, and persistent; the three inner ones having the appearance of petals, unguiculate, and deciduous. Filaments five or six, but only three fertile. Involucre monophyllous, folded, or hooded, persistent, including the capsule.

DESCRIPTION, &c.—The genus *Commelina* was named by Linnæus in honour of Gaspar and John Commeline, two Dutch botanists. There are about thirty species, but only one is common in British gardens.

1.—COMMELINA CŒLESTIS, *Willd.* THE SKY-BLUE COMMELINA.

SYNONYME.—*C. tuberosa*, *Sims.*

ENGRAVINGS.—*Bot. Mag.*, t. 1695; Sweet's *Brit. Flow. Gard.*, t. 3; and our *fig. 2*, in Pl. 90.

SPECIFIC CHARACTER.—Corolla regular; involucre cordate, acumi-

nate, conduplicate; racemes many-flowered; peduncles pubescent; pedicles glabrous; leaves oblong-lanceolate, sessile, glabrous, undulated at the margin; sheaths fringed; stem erect.

DESCRIPTION, &c.—The root consists of a fascicle of long subcylindrical tubers. There are numerous stems, and the flowers are of the most beautiful sky-blue that can be imagined; but their beauty is of very short duration, as they fall off soon after they expand. The flowers are produced in autumn, and as soon as they have faded, and the leaves have begun to wither, the tubers must be taken up, and kept in a little dry sand, out of the reach of the frost, till the following spring. In April, or the beginning of May, they must be replanted in the open border, in a light sandy soil. The species is a native of Mexico, and was introduced in 1813.

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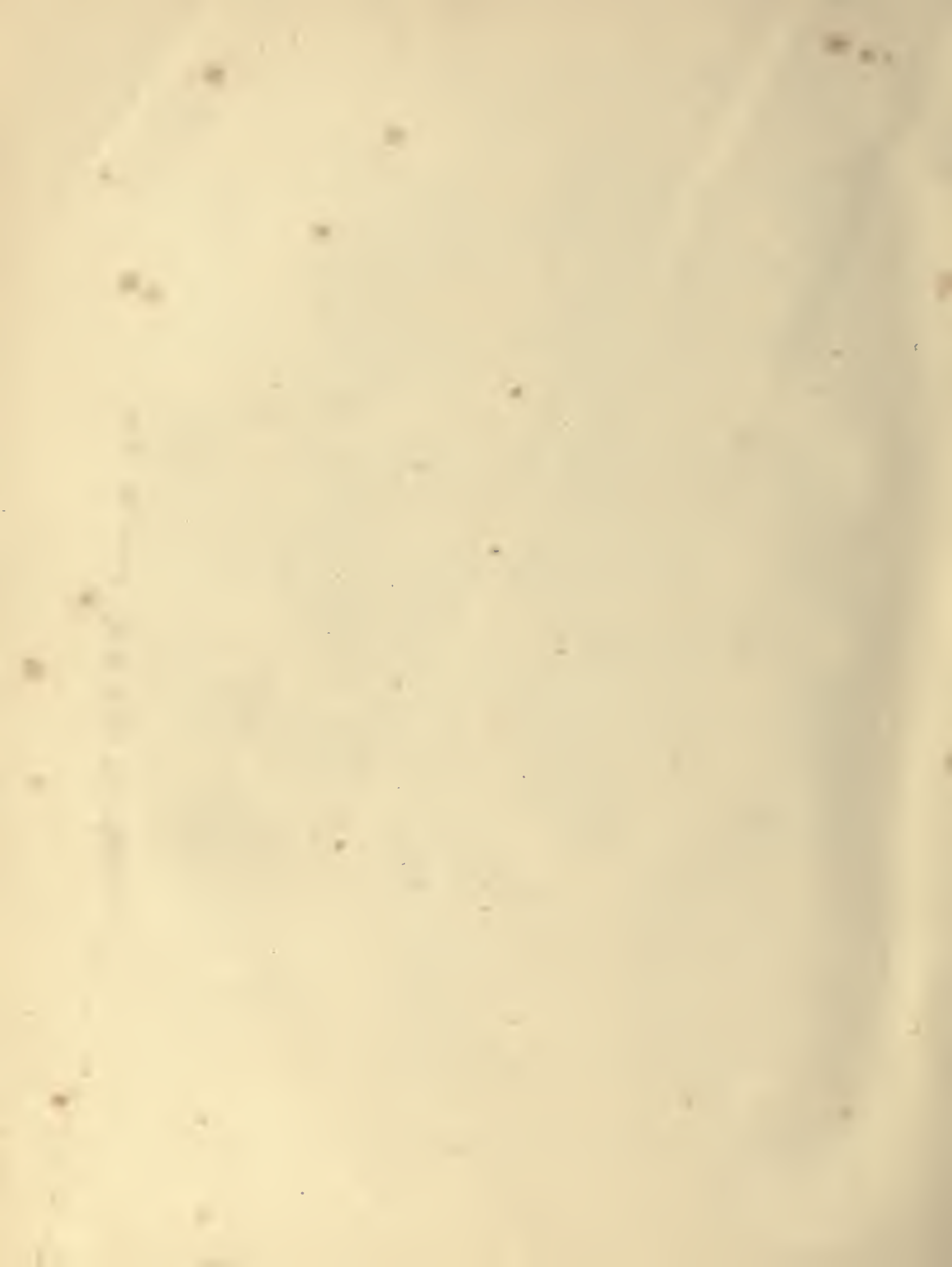
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