

ANNUAL & BIENNIAL
GARDEN PLANTS

A. E. SPEER

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ANNUAL AND BIENNIAL
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ANNUAL AND BIENNIAL GARDEN PLANTS

THEIR VALUE AND USES: WITH
FULL INSTRUCTIONS FOR
THEIR CULTIVATION

BY A. E. SPEER, F.R.H.S.

WITH ILLUSTRATIONS BY THE AUTHOR

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INTRODUCTION

ANNUALS and Biennials are plants with limited lives. An Annual is a plant that is raised from seed, which germinates, grows, comes to maturity, seeds and dies (irrespective of frost), all within the period of a year.

In Nature these seeds are scattered broadcast in the Autumn by the winds and other agents, and quickly germinate, thus reproducing themselves year by year.

HARDY ANNUALS are those which need no protection. There are numerous *Hardy Annuals* that will stand a great amount of frost and bad weather, if, as Nature dictates, they are sown in the Autumn. But this is not the common practice. For one thing a gardener usually is far too busy at that time of the year, digging, sweeping up leaves, potting up geraniums, attending to the glass-houses and frames and many other duties, that he is not justified in spending his time in sowing Annuals when he considers the Spring will do as well. Neither does he wish to risk the Winter when he has enemies enough to contend with. So, in spite of Nature's teachings, he sows in early Spring, when he considers the risks are over. Nevertheless, Autumn-sown plants are the best and strongest. In very cold, bleak, and exposed places the practice of sowing in Autumn is not recommended of course,—at least it would be attended with only a small measure

of success ; but the rules of Nature are invariably the right ones, and, using discretion, it is as well to bear them in mind.

Having disposed for the present of the Hardy Annuals, we may pass on to those plants known by gardeners as—

HALF-HARDY ANNUALS.—The question where to draw the line between the Hardy and some of the Half-hardy Annuals is an open one, subject to the plant being native of a very warm climate, a temperate or cool one ; also what must be treated as tender in the North would be considered absolutely hardy in the South. The terms must be used relatively and with judgment without going to extremes. Half-hardy Annuals are plants that in their own tropical climes behave just as Hardy Annuals do here ; but in a cool one like ours, subject to frost and other uncongenial conditions, they must be treated in the first stages of growth with more or less artificial heat, according to their several requirements, until they are sufficiently established, and the weather becomes warmer to allow of their being transplanted outdoors. Under this head must be included, for practical purposes, certain plants that are in their own countries not Annuals but true Perennials (*i.e.*, they continue to grow and flower every year), though in this country are usually regarded as Half-hardy Annuals and treated as such. For instance, Petunias and Verbenas. There are numerous Annuals, generally termed Tender or Greenhouse Annuals on account of their delicacy, that are seldom, if ever, a success when transplanted to the open air,

even in the hottest months in our climate. Such plants are outside the scope of this work, and are consequently omitted.

BIENNIALS are a class or section of plants that cannot very well be separated from the Annuals, being so nearly alike in habit. However, they have this difference, that they never flower till the second year after sowing, living as half-developed plants through the Winter, after which, like Annuals, they flower and die; hence the name Biennial, which means two years' continuance. Therefore they are never sown in the early Spring, but during the Summer months of June or July as a rule, so as to allow them to get well established before Winter. They may be sown where they are wanted to flower, but are usually transplanted from the seed-beds in Autumn. Example, the Canterbury Bell. Some even require slight protection in a cold frame during Winter, or at least are the better for it. For instance, the Brompton, Queen, and Intermediate Stocks.

Under this heading may be mentioned a few plants that in a state of Nature are more or less perennial, though, from the high state of cultivation they receive in a garden, seem to get worn out with the extra amount of flower growth forced upon them, and quickly degenerate or die altogether after the first year. For example, we may take the garden Wallflower, or the Chimney Bellflower (*Campanula pyramidalis*). The plants sometimes flower a second or even a third year, but miserably compared to their first efforts, and are consequently always regarded by gardeners as Biennials.

VALUE AND USES.—It is a common error to under-rate the value of Annuals and Biennials, and the reason assigned for this indifference is that they are short-lived and therefore hardly worth the trouble expended on them.

Considering their beauty and gay colouring, the ease with which they can be grown, their rapidity in development, and the quantity obtained for a small outlay, the advantages (especially in small gardens) would seem to altogether outweigh the disadvantages. Moreover, it may be said that many of the varieties are excellent material for cutting from for house decoration, while some are very fragrant.

The uses to which they can be put are numerous. The early kinds can be turned to profitable account by filling up the gaps caused by the withering Spring-flowering bulbs, which have already done their duty on the edge of the mixed border. It is a common practice to fill up the spaces in herbaceous beds with Annuals, where it is found there is room still vacant for something to grow, which is easily discerned when the plants that have lain dormant all the Winter begin to break forth into young growth. Some will have failed, and this is a golden opportunity to fill up the space, and not too late either. But for breadth of colour and real effect there is no doubt they look best and grow best in small beds, not a jumble of a dozen varieties, but one or two massed together and well chosen for harmony as well as brilliancy; for instance, China Asters, Zinnias, and Stocks. Opportunities sometimes suggest themselves for sowing them in lines or “ribbons,” more

particularly the dwarf sorts which make neat edgings, as Dwarf Nasturtiums, or Dwarf French Marigolds (*Tagetis signata pumila*).

Many gardeners trust a good deal to Annuals and Biennials for late Summer and Autumn effects, when such plants as Hollyhocks and Sunflowers, Nicotiana, Alonsoa, Cosmos, Verbena, Chimney Bellflowers, and Petunia among others come in advantageously.

CLIMBERS.—Late Summer and Autumn is also the time of year when many of the climbing varieties are at their best, about July, till frost cuts them down. They are used for covering fences, trellis, archways, verandahs, and such like objects. Among the most prominent of these may be mentioned the Canary Creeper (*Tropæolum canariense*), Sweet Pea, Tall Nasturtium, *Mina lobata*, *Cobœa scandens*, *Eccremocarpus*, and *Ipomœa*.

“EVERLASTINGS.”—These are late-Summer flowers, and natives of warm climates. The best plan for keeping them is to cut the flowers just before they are quite full blown. Then after tying them in small bunches, hang them up on a nail with a piece of string heads downward. The stems will then stiffen and dry up straight, but if put when fresh in a vase upright, the stalks will very soon bend over and hang their heads. In a month or two, when they are quite dry and firm, they can be taken down and used in vases in the ordinary way, but without any water. They will keep a great length of time, and are useful during the Winter months.

PREPARATION OF THE SOIL.—This is more important

than most people think, and it is because it is not thoroughly dug over that Annuals are so often a failure. It is a common belief that any kind of scratching with a rake is good enough for such plants. But do not be led into this error. Dig the ground well and add a little manure at the bottom of the "spit." Two feet is none too deep for some—Sweet Peas for instance. Light soil may be dug in February or March, but for heavy soils the Autumn is the best time. This allows the frosts of Winter to disintegrate the lumps, and so bring it into better condition for breaking up before sowing.

SOWING THE SEED.—Before putting the seeds in, rake the surface fine and level, incorporating with it a dusting of fine lime. This helps to sweeten the soil, and has a beneficial effect in conjunction with the manure. It is seldom, however, necessary to put any rich manure in the soil where Nasturtiums are to be grown, as it makes them produce too much foliage and very little flower.

Directions are given below the description of each family of plants throughout the book as to the time to sow, the depth to put the seeds, when to transplant (where necessary), the positions to place them, and other information of like character, so it is only necessary to say here that a good rule in sowing is to remember that large seeds like Nasturtiums and Sun-flowers may be planted 2 ins. below the surface, while $\frac{1}{2}$ an inch is enough for most of them; but some are so exceedingly small—for instance, *Portulaca*—that enough can be put on a sixpenny piece to produce hundreds of

plants. Such seeds need only to be dusted over with fine soil, or when sown in pots merely gently pressed down with a flat piece of wood.

Never to sow fine seed on a windy day is only common sense, nor when the ground is sodden with much rain, as it sticks to the implements, and cannot be properly raked over. Nor attempt it when frost has made the ground hard. Choose a fine day when the soil is in nice workable condition. As Half-hardy Annuals are sown in frames or in pots in a greenhouse, weather is not of so much consequence; but see that the pots are well cleaned and brushed out, as if they are left in a dirty condition they not only harbour vermin, but the seedlings are afterwards difficult to turn out without greatly disturbing the roots.

THINNING OUT.—By this is meant that when seeds have been sown too thickly—and this is invariably the case—many of the seedlings have to be pulled up, particularly in the case of fine seeds. It is no good only half doing it, it must be done almost ruthlessly with a hardened heart. Each seedling must be allowed plenty of room to grow and expand, and when the size of the full-grown plant is known, it is easy to judge how far apart to leave them. Special note should be made of this in the case of low-spreading things, like *Nemophila*, for instance. If thinning out is neglected, nothing but disappointment will be the result. The plants will grow tall, attenuated and weak, throwing very little flower, instead of being comely, bushy, and free-flowering.

STAKING for climbing plants, like Sweet Peas,

should be performed directly after sowing, as then there are no roots to break or disturb. After putting in the larger sticks (Hazel for choice) it is as well to add a few small ones after, close to the seeds, for the seedlings to get hold of quickly. The remains of a worn-out besom is a handy and economical thing to use for this purpose when cut from the handle.

WATERING.—This operation requires more care than is often given to it. In dry weather a little sprinkling does more harm very often than good. The roots are attracted to the surface only to be burnt up by the hot rays of the sun. When watering do it thoroughly, so that it may go down to the roots, and not the roots up to the moisture. Some Annuals, like Sweet Peas, especially if grown for exhibition, require copious watering, and occasionally with a little liquid manure added. Always water after the sun is off the plants; and it may be added, rain-water saved in a tub is preferable to water from a pipe. It is softer and not so cold. In the case of very minute seeds, when sown in pots, and practically on the surface, instead of watering overhead, it is safer to place the pots in a saucer containing about 2 ins. of water for two hours, which will soak through to the soil. Unless that is done the seeds are liable to float on the water and get washed out.

In the case of the Canterbury Bell, a second crop of flowers will result if the seed-pods of the first flowers are removed.

GATHERING SEED.—Few amateurs care to sow their

own seed, but for those who would do so a few hints will not be out of place.

The plants have to be carefully watched till the seed is in a fit condition to gather, and should be only taken from the finest flowers. Dry weather is essential for the operation, and September is the best month.

Put the seed when collected in cardboard boxes and label each one. Keep them open for a time on a sunny shelf, so that they can thoroughly dry, after which they can be put away till required.

MULCHING the surface is an excellent plan for preventing or checking the evaporation of moisture from the soil. The worst of it is that it is untidy in appearance, unless cocoanut fibre is used, and that is expensive when required in large quantities. It is done by placing round the roots a thick layer of manure, grass mowings, and the like. It should be put on after a copious watering or soaking rain.

MANURE.—If the ground was properly dug, and stable or farmyard manure put in at the proper time, after-manuring is not often necessary. A dusting of “super,” as gardeners call superphosphate of lime, in April is sometimes given as a fillip. If this manure is used, care should be taken not to let it touch foliage. A pinch or two round the roots is all that is necessary, to be washed in by the rain.

SEED-PODS should always as far as possible be picked off. This will prevent the plants from weakening themselves, and will prolong the flowering season. They cannot undergo the two operations together successfully.

EXPLANATION

IN the body of the work, to assist in the proper pronounciation of the names, an accent is placed after the syllable that should be emphasised. For instance, Tropæ'olum, *not* Tropæo'lum, as it is commonly pronounced. Also Gypso'phila, *not* Gypsophi'la.

Nat. Ord. signifies Natural Order.

Syn. „ Synonym, or discarded name.

fl. pl. „ flore pleno, or double flower.

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ANNUAL AND BIENNIAL
GARDEN PLANTS

ABRO'NIA—*Sand Verbena* (from Gr. *habros*, meaning graceful or delicate). The generic name should be pronounced *Habronia*, strictly speaking. Nat. Ord. *Nyctaginaceæ*.

Half-hardy succulent plants of a trailing nature, with showy flowers in dense verbena-like clusters, brought from California in 1823, admirably adapted for rock work or hanging baskets, and flowering all summer and autumn, preferring the neighbourhood of the sea-shore. The somewhat glutinous flowers smell of honey in the evening, when they are at their best.

A. arena'ria has trailing stems, clustered with masses of pale yellow flowers in August. Syn., *A. latifo'lia*.

A. u'mbella'ta. Bright rose-coloured flowers with white centre, pleasantly scented, on trailing stems during the summer months.

Propagate by seed sown $\frac{1}{16}$ in. deep in poor light sandy soil out of doors on a border or rockery in April; or in February and March in temp. 55° to

A

ABRO'NIA—*continued*.

65°, and plant out in May in sandy soil. The seed is some little time germinating.

ADLU'MIA—*Climbing Fumitory* or *Allegheny Vine* (named after Major Adlum, an American). Nat. Ord. *Fumariaceæ*.

A. cirrho'sa. The only species known is a rampant climbing biennial, that will grow 10 ft. or more in a season. It has slender, twining stems, and quantities of little flesh-white flowers, $\frac{1}{2}$ in. long, which in a south aspect it loves to fling about over shrubs, rustic fences, or anything near it. It blooms in June to September. A native of N. America, introduced in 1788.

A. cirrho'sa purpu'rea. A variety having purple flowers.

Sow seeds $\frac{1}{8}$ in. deep in open border in April in light soil against a south wall, trellis, or other support.

ACROCLI'NIUM (derived from Gr. *akros*, top, and *kline*, a couch, in reference to the conical receptacle). Nat. Ord. *Compositæ*.

A. ro'seum. A half-hardy annual plant from S.W. Australia, sometimes classed as *Helipterum roseum*, one of the so-called "Everlastings," the flowers possessing the property of retaining their appearance and colour when dried for a considerable length of time, for which reason they are useful as cut flowers for

ACROCLI'NIUM—*continued.**A. ro'seum*—*continued.*

indoor decoration. Gather before fully open. The plant attains about $2\frac{1}{2}$ ft. in height, and blooms from June to the end of September. The star-like flowers, about 1 in. across, vary from rose to pale lavender colour, with greyish-green foliage. Introduced in 1853.

A cultivated form distinguished as *grandiflor'a*, brought out in 1879, is similar but has finer bloom. There is also a double-flowered variety, which is rather a novelty, and said to be taller and more branched.

A. album has white flowers, sometimes double.

The double forms are less inclined to close up in damp weather than the single.

Sow seed $\frac{1}{4}$ in. deep in light sandy soil in a temp. of 65° during March, transplanting the seedlings, with a little ball of earth, at the end of April or May, choosing a sheltered border. Or else, sow in the open ground in a rich sandy soil towards the end of April where it is to grow. This is really the best method, as it resents any root disturbance. As a pot plant it does well, but it is never a very showy flower, and scarcely worth that trouble.

ADO'NIS (named after Adonis of the Classics). Nat. Ord. *Ranunculaceæ*.

A pretty family of plants, having bright flowers, resembling the Buttercup in shape. Most of the

ADO'NIS—*continued*.

species are perennial rock plants, but the following are annuals suitable for the mixed border :—

A. æstiva'lis, popularly known as *Flos Adonis*, is 1½ ft. high, and produces brilliant scarlet flowers on finely cut foliage, blooming about June. S. Europe, 1629. Syn., *A. Miniata*.

A. autumnal'lis, *Red Camomile*, *Red Morocco*, commonly called *Pheasant's Eye* or *Corn Adonis*, is found in some parts of England growing wild, though it is supposed by some to be an escape. The flowers are bright crimson, that fable says were stained with the blood of Adonis. They bloom from June to October, about 1½ ft. from the ground.

A. citri'na is 1 ft. high, with orange flowers. S. Europe, 1819.

A. flammæa, with scarlet flowers, is a native of Austria.

A. Minia'ta. See *A. æstiva'lis*.

Sow the seed $\frac{1}{16}$ in. deep in ordinary good soil in the open ground in March or April.

ÆTHIO'NEMA (from Gr. *aitho*, to scorch, and *nema*, a filament, in reference to the burnt appearance in the stamens). Nat. Ord. *Cruciferae*.

Æ. Buxbau'mi. A dwarf unassuming annual but seldom seen, only 6 ins. high, having pale rose-coloured flowers. Of small consequence for the garden, but is suitable for the rockery in sandy loam and grit. From the Levant, 1823.

ÆTHIO'NEMA—continued.

Sow in March in boxes in greenhouse about 65°, and plant out in May; or outdoors in May.

AGERA'TUM—*Floss Flower* (from Gr. *ageratos*, not growing old, having reference to the long time the flowers keep their colour). Nat. Ord. *Compositæ*.

These half-hardy annuals make good plants for bedding out and are generally used for margins, as they flower profusely all summer and late into the autumn, till frost destroys them. They are compact, rarely injured by heavy rains, and seldom exceed 1½ ft. in height, if as much. At the same time they are sometimes made too much use of, the fluffy flowers being rather monotonous in their sameness and regularity. *Ageratums*, however, are very satisfactory plants to grow and never disappoint.

A. Mexica'num is the one best known. It stands about 1 ft., or little more, the terminals being covered with a mass of lavender-blue flowers. From Mexico in 1822.

A. Mexica'num albiflo'rum na'num is a dwarf white variety.

A. Mexica'num lu'teum, is 1 ft. high, with yellow flowers. There is a dwarf variety of this called *na'num*.

The garden varieties of *Ageratum* are called *Imperial Dwarf*, blue, 6 ins.; *Cupid*, 6 ins., deep blue; *Blue Perfection*, 9 ins., dark blue; *Swanley Blue*, 9 ins., very deep blue;

AGERATUM—*continued.**A. Mexica'num luteum*—*continued.*

Queen, 9 in., silvery grey; *Snowflake*, 9 ins., white.

Sow seed out of doors in a fairly protected border in April or May, and transplant the seedlings to their flowering positions in June; or in February and March in shallow boxes in temp. 65° to 70°, and plant out in May.

AGROSTE'MMA—(From Gr. *agros*, a field, and *stemma*, a wreath). Nat. Ord. *Caryophyllaceæ*.

This is generally regarded now as a section of the genus *Lychnis*, from which it only slightly differs.

A. cæli-rosa or *Rose of Heaven*. See *LYCHNIS cæli-rosa*.

The annual *Viscarias* are also sometimes named *Agrostemma*.

ALKANET. See *ANCHUSA*.ALLEGHENY VINE. See *ADLUMIA*.ALONSO'A (called after Z. Alonzo, a Spaniard). Nat. Ord. *Scrophulariaceæ*.

A genus of half-hardy annual plants of the Snapdragon order. Charming for small beds by themselves or in the mixed border.

A. acutifo'lia. Height 3 ft. Slender growing. Scarlet flowers in June. From Peru in 1790.*A. albifo'ra*. Height 2 feet. White, yellow in centre. From Mexico, 1877.



ALONSOA WARSCEWICZII.

ALONSO'A—continued.

- A. gra'cilis*. Height 1 ft. Scarlet. Variety of *A. linifolia*.
- A. incisifo'lia*. Height 2 ft. With deeply toothed scarlet and black flowers which bloom in June. Native of Chili, 1795. Syn., *Celsia urticæfolia*.
- A. lined'ris* (*Mask Flower*). About 2 ft. A dwarf shrubby plant, having obliquely wheel-shaped scarlet flowers and a black spot at the base, the form suggesting its name. It flowers in June, and is a native of Peru, from whence it came in 1790. Syn., *Celsia linearis*.
- A. linifo'lia*. Height 1½ ft. Flowers, bright scarlet; foliage, long, slender, and very graceful. From Australia.
- A. minia'ta*. Only 16 ins. high. A compact pyramidal plant with bright scarlet flowers.
- A. muti'sii*. A bush plant 18 ins. high, producing a profusion of chamois-rose flowers.
- A. myrtifo'lia*. Similar to *A. insicifolia*, with larger flowers and more intense scarlet than the other kinds.
- A. Warscewi'czii*. Height 1½ ft. A bright little annual with racemes of small but dazzling orange-red flowers, which appear in July and last till October. It should be grouped 6 ins. apart, and is excellent for cutting from for indoor decoration. Not nearly as well known

ALONSO'A—*continued*.*A. Warscewi'czii*—*continued*.

as it deserves to be. A native of Central America, 1858.

Give slight support with twigs cut from an old besom.

Sow seeds $\frac{1}{16}$ in. deep in March in gentle heat, about 60°, in sandy soil, or in April in the open air. They can be easily grown in pots also for the conservatory. Water moderately.

ALPINE FORGET-ME-NOT. *See* MYOSOTIS *alpestris*.

ALPINE WALLFLOWER. *See* ERYSIMUM *ochroleucum*.

ALTHÆ'A—*Hollyhock* (from Gr. *althaia*, the wild mallow). Nat. Ord. *Malvaceæ*.

The few hardy wild species of this family are of small consequence compared to the majestic garden Hollyhock, a cultured descendent of *A. ro'sea*, a native of China and the East and Southern Europe.

A. ficifo'lia, *The Fig-leaved Hollyhock* introduced from the Levant in 1597; of a bushy habit, 5 ft. high, with single flowers of bright primrose yellow and deeply cut foliage. A distinctly handsome plant. There are also hybrid strains showing many shades of colour.

A. ro'sea, the ancestor of all the garden Hollyhocks now grown, is, even in its natural and original form, a fine plant. It has been cultivated for more than three centuries in this country,

ALTHÆA—*continued.*

A. ro'sea—*continued.*

since it was first introduced in 1573 from the Holy Land, whence the name Hollyhock (formerly hollihock, a corruption of the word holy and the Anglo-Saxon hock, the wild mallow). In its original form this biennial plant is single blossomed and pink in colour, and the beautiful double garden varieties are the result of careful selection and crossing, first by Mr Charles Baron, a shoemaker of Saffron-Walden, and latterly by many others. There is no more stately plant than this for making a bold effect if well arranged in a border, so as to make a background for other things not so tall, or grouped in a mass on a large lawn. The colours are numerous. Among others may be mentioned :—

A. ro'sea fimbriata. A strain with semi-double fringed petals.

A. ro'sea Prince of Orange. Distinct orange yellow.

A. ro'sea alba. Pure white double.

Hollyhocks are increased by division of the roots also ; but it is strongly advised to raise them from seed, as these are usually the best and far less likely to inherit the dread fungus disease (*Puccinia malvacearum*), to which they are peculiarly liable, than those propagated by other means.

In raising them from seeds, the plants are best

ALTHÆA—continued.

sown in June or July in a west border. The seeds very quickly germinate. Late in September or in October the young plants should be lifted and potted up and kept in a cold frame till April, when they must be planted out in the open where they are to flower. Another way, and the best for those who have no glass at all, is to sow in the open ground in June or July as follows:—Prepare a seed bed by digging and pulverising the soil deeply and well. Rake smooth and put in the seed 2 or 3 ins. apart and 1 in. deep. In a few days the seedlings will be up, when they will require frequent watering if the weather is hot. When about 3 ins. high they should be gently raised with the spade and the long tap-root severed entirely, which will encourage new fibrous growth. By the end of August or September they will be ready to be transplanted to where they are to flower. The bed for their ultimate reception should have been well prepared beforehand by digging 2 ft. deep at least, leaving the lower soil at the bottom, at the same time adding a liberal supply of good cow manure.

Hollyhocks may be treated as half-hardy annuals, that is sown in boxes in January in slight heat, and will flower the same summer when removed to the open ground about April, after being gradually hardened off in a cool frame.

Do not crowd them when planting, but allow 3 ft. between each, at the same time putting in a

ALTHÆA—*continued*.

good stout stake or bamboo 4 or 5 ft. high. If the staking is done later the roots get disturbed.

When in flower, water occasionally with liquid manure. This is important if fine plants are required. It may be mentioned that the author has grown Hollyhocks 12 ft. high, though this is unusual. The ground was virgin soil, and had just been deeply trenched and manured.

A good panacea against the ravages of the fungus disease before mentioned is 1 lb. of tobacco powder and $\frac{1}{4}$ oz. sulphate of copper, well mixed together, and dusted over the foliage.

ALY'SSUM (from Gr. *a*, not, and *lussa*, rage, in reference to its supposed cure for anger). Nat. Ord. *Cruciferae*.

A. Maritimum, popularly known as *Sweet Alyssum*, is a free blooming hardy little annual, much cultivated in gardens, producing small bunches of white honey-scented flowers, very attractive to bees.

It grows about 3 or 4 ins. high, and is useful as a carpet plant or edging, but may often be seen growing on the tops of old walls in our warmer counties. In such places it is perennial, but in gardens it is usually treated as annual. There is a variegated variety besides. Syns., ALYS'SUM *halimifolium*, ANODON'TEA *halimifolia*, KÖN'IGA *maritima*.

Propagate by seeds sown $\frac{1}{8}$ in. deep outdoors in April, thinning the seedlings out to 6 ins. apart.

AMARANTH FEATHERS. *See HUMEA elegans.*

AMARA'NTHUS (from Gr. *amarantos*, unfading; expressing its permanent nature and colour). Nat. Ord. *Amaranthaceæ*.

A curious and striking family of half-hardy annuals, some forms being well known by their drooping flowers, which hang rope-like till they touch the ground a foot or more in length, while others are only grown for the sake of the gorgeous colours of their foliage. These strange flowers retain their colour long after being cut, and in Portugal they are employed to adorn the churches at festivals, much in the same way as "Immortelles" are used in cemeteries. The foliage of all the Amaranths (or more properly Amarants), is extremely effective, being of blood-red colour or carmine, with, in some cases, an addition of bronzy-green and yellow. Care must be taken, however, in not planting too many of them, but rather have a group here and there as a relief to the green foliage of other plants. The flowers are at their best in August, except as otherwise specified.

- A. atropurpureus* grows about 3 ft. high, with deep purplish-red foliage. E. Indies, 1820.
- A. bicolor*, about 2 ft. high, has red and green foliage. E. Indies, 1802.
- A. caudatus*, popularly known as *Love-lies-bleeding*, grows about $2\frac{1}{2}$ ft. high. It has curious blood-red, rope-like flowers, graceful, but rather melancholy looking. E. Indies, 1596.

AMARA'NTHUS—*continued*.

- A. cauda'tus maximus* is similar to the above, but taller, sometimes reaching 6 ft., and larger in every way. E. Indies, 1820.
- A. fla'vus*, about 4 ft. high, has pale yellow flowers. India.
- A. Hende'ri*, about 3 ft., has a pyramidal habit, the foliage being striking, green, golden-yellow or orange and carmine. A hybrid.
- A. hypochondri'acus*, or *Prince's Feather*, about 2 ft. high. The flowers are blood-red, the foliage green and purple. Brazil.
- A. lanceæfo'lius*, foliage deep red and lanceolate, or spear-shaped. July. E. Indies, 1816. Syn., *Eu'xolus lineat'us*.
- A. melancho'licus ru'ber*. 1 ft. high. A well-known plant with crimson foliage and flowers; useful for beds. From Japan.
- A. melancho'licus tri'color*. 2 ft. high. Foliage reddish-violet and green. E. Indies, 1848.
- A. olera'ceus*. Height 6 ft. Pale red. July. E. Indies, 1764. Syn., *Eu'xolus olera'ceus*.
- A. panicula'tus*. Height 5 ft. Fine plant. Red, green or yellow, bearing tufts or panicles, as its name denotes. July. Syn., *A. specio'sus*.
- A. salicifo'lius*, *Fountain Plant*. Height $2\frac{1}{2}$ ft. Very ornamental long willowy foliage shading to bronze or orange-red. A native of the Philippine Islands, 1871. This may be used with excellent effect.

AMARA'NTHUS—*continued*.

A. sanguineus. Height 3 ft. Blood-red. From Bahama in 1775.

A. speciosus. See *A. paniculatus*.

A. tri-color. Height 2 ft. Rich crimson, yellow, green, and white foliage. A good bedding plant.

A. tri-color splendens, *Joseph's Coat*. Height 1½ ft. Highly ornamental foliage plant, having broad leaves of rich crimson, marked with bronze green and yellow, imparting a fine effect to flower beds.

Sow seeds $\frac{1}{16}$ in. deep in March in hotbed, 65°, and harden off gradually. Plant out in May to June at least 1 ft. apart for the smaller ones, and more for the taller varieties, in a rich soil. They are easily cultivated and do well at the seaside.

AMBERBO'A *suaveolens*. See CENTAUREA *suaveolens*.

AME'LLIS *annuus*. See KAULFUSSIA.

AMERICAN CENTAURY. See SABBATIA.

AMMO'BIUM—*The Winged Everlasting* (from Gr. *ammos*, sand, and *bios*, life; in reference to its partiality to sandy soil). Nat. Ord. *Compositæ*.

Hardy annual from Australia, known as one of the "Everlastings." The flowers can be cut, dried, and kept a long while, but for that purpose they should be gathered before they are quite fully blown, and hung up in a cool place upside down in a bunch.

AMMOBIUM—continued.

A. ala'tum. Height $2\frac{1}{2}$ ft. This plant has pure white flowers with a yellow centre, that bloom from June to September.

A. ala'tum grandiflo'rum is similar to the above, but has much larger flowers. An improved garden form.

Sow seed out of doors in March or April $\frac{1}{8}$ in. deep in enriched light sandy soil, thinning out to 18 ins. apart.

ANACYCLUS *au'reus*. See ANTHEMIS.

ANAGA'LLIS—*Pimpernel* (from Gr. *anagelao*, to laugh aloud. Supposed to remove sadness). Nat. Ord. *Primulaceæ*.

Humble but charming little flowers, suitable for the rockery or a small edging. With the exception of *A. indica* they are not true annuals, but are usually treated as such. Blooming period June to September.

A. cœru'lea is a form of *A. linefolia*. The little flowers are a lovely blue, about 6 ins. high. A native of Europe.

A. grandiflo'ra cocci'nea is another variety of *A. linefolia*, the same height, but with deep red flowers. Sometimes known as *A. sanguinea*.

A. i'ndica is a true hardy annual, 1 ft. high, with small blue flowers. From Nepaul, 1824.

A. linefo'lia, a little Portuguese plant, 6 ins. high, having bright blue flowers. 1796.

ANAGA'LLIS—*continued.*

- A. Mone'lli* is the Italian Pimpernel, a very beautiful little blue flower, with a touch of crimson at the base of each petal, 9 ins. high. 1648.
- A. Mone'lli Bre'we'ri*, only 3 ins. high, has brilliant coppery-red flowers.
- A. Mone'lli lilaci'na*. Height 1 ft. Has lilac blooms.
- A. Mone'lli Phœni'cea* is a little scarlet-flowered plant from Morocco, 1803.
- A. Mone'lli Phi'lipsi*, only 4 ins. high, has rich blue flowers.
- A. Mone'lli Willmorea'na* has bright bluish-purple flowers with a yellow eye.
- A. sangu'nea*. See *A. grandiflora coccinea*.
- A. Webbia'na*, 6 ins. high, is a pretty little trailing plant with bright blue flowers. Portugal, 1828.
- A. Wellsia'na*, 6 ins. high, is also a trailing plant, with copper-coloured flowers, suitable for a rockery. An English hybrid, 1830.

The Pimpernels are easily grown, though all except the hardy *A. indica*, which can be sown in the open in April, should be raised under glass in pans or boxes in temp. 65° in March or April, just covering the seeds with soil, and planting them out in May or June.

ANODO'NTEA *halimifolia*. See ALYSSUM.

ANCHU'SA—*Alkanet* (from Gr. *anchousa*, alkanet, a cosmetic). Nat. Ord. *Boragenaceæ*.

ANCHU'SA—continued.

These are pretty plants, well worth attention, particularly *A. italica Dropmore variety*, reminding one of the Forget-me-not. A true blue is such an uncommon colour in the garden, that, for this reason, if for no other, they are valuable. With the exception of *A. capensis*, they are fairly hardy, but will not always survive the winter, and appear to prefer a shady nook rather than bright sunshine.

A. hybrida. Height 2 ft. White and violet-blue blossoms in July. Italy, 1820.

A. italica is really a perennial, but should be treated as biennial. It has tall spikes of intense blue flowers, 3 ft. high, which bees are very fond of. There is a form, *A. italica amœna*, that is an improvement on the type and a free flowerer. S. Europe, 1810. The now well-known *Dropmore* variety, of quite recent introduction, has practically ousted all the other forms. It will grow 5 ft. high, and is covered with true-blue flowers an inch across. A noteworthy acquisition to the border, especially in large groups. It does best if treated as a biennial.

A. cape'nsis, *The Cape Forget-me-not*. Height 1 ft. Pretty, large, bright blue flowers in June. A biennial from the Cape of Good Hope, 1830.

Sow *A. hybrida* in early spring in ordinary soil

ANCHU'SA—*continued*.

½ in. deep in March in a well-drained sheltered border. The others in May or early June, to flower the following year, but give *A. capensis* slight protection during the winter, as it is not very robust and liable to suffer from frost.

ANNUAL HEATHER. See *LINARIA bipartita splendida*.

ANODO'NTEA *halimifolia*. See *ALYSSUM maritimum*.

A'NTHEMIS—*Chamomile* (from Gr. *anthemis*, a flower).

Nat. Ord. *Compositæ*.

A family of charming little plants, most of them perennial, but two are annuals and are most effective on a rockery in August.

A. aizo'on is only 3 ins. in height, and forms a carpet studded with minute daisy-like flowers in great profusion, white with a yellow centre. N. Greece.

A. au'rea has yellow flowers rather taller than the other. Syn., *Anacy'clus au'reus*.

These Chamomiles are easily raised from seed sown outdoors in March or April; or in February in gentle heat, and pricked out in May when large enough to handle. Give them a sandy loam to grow in and full exposure to the sun.

ANTIRRH'NUM—*Snapdragon*, *Dragon's Mouth*, *Lion's Mouth* (from Gr. *anti*, like, and *rhis* (rhin) a snout, in reference to the shape of the flower). Nat. Ord. *Scrophulariaceæ*.

A. majus is a well-known, old-fashioned flower, sometimes to be observed as an indigenous

ANTIRRHI'NUM—*continued.**A. majus—continued.*

plant in company with the Wallflower, growing on old ruins in chalk districts. In its cultivated form it is a fine flower and best raised annually, although by nature a perennial. If left in the ground long, it generally deteriorates or damps off. There are tall kinds growing 2 to 3 ft. high, a dwarfer strain about 1 to 1½ ft., and a very dwarf variety known as *Tom Thumbs*, only 6 or 8 ins. high.

Tom Thumb or Pigmy varieties are largely employed now for bedding as well as edgings. Besides being very dwarf, they are compact and last long in flower, while there is plenty of choice as regards colours. Perhaps the best are *Yellow Prince* or *Yellow Gem*, *White Queen* or *Queen of the North*, *Black Prince*, a dark crimson colour, and *Crimson King*.

There are semi-dwarf or intermediate varieties, such as *Orange King*, a glowing orange self about 18 ins. high, *Golden Queen*, of deep yellow, *Crimson King*, *Floriosum*, deep cherry with white throat, *Yellow Queen*, *Pink Empress*, and many others.

The tall-growing varieties are fine in their way but are not quite so long flowering. Among them may be mentioned *Brilliant*, dark scarlet, golden tip and white throat; *Yellow King*, a fine yellow 2 ft. high; *Queen Victoria*, a new pure white with lemon tip;

ANTIRRHI'NUM—*continued*.*A. ma'jus*—*continued*.

Coral Queen, a coral red ; *Salmon Pink*, and others too numerous to catalogue.

Snapdragons come fairly true to name and to colour from seed, and may be pretty well distinguished in the seedling stage, the red-flowered kinds having dark red stems, while the yellow or white ones are pale green.

Sow the seed $\frac{1}{8}$ in. deep in pans during March on a hotbed. When the seedlings are large enough to handle, prick out into pots, pinch out tops, and harden off gradually in a cool frame. In May they can be planted out in beds. They can also be sown in the open during March for later blooming ; or in July and August in the reserve garden for the following spring, but many will succumb during the winter owing to damp. Should the gardener be fortunate enough to possess an old moss-covered stone wall, Snapdragons are one of the things he should grow upon it. A few seeds slipped into niches with the smallest amount of soil will soon germinate and flower. It is surprising under these homely conditions what little their roots require, getting plenty of moisture from the sodden old stones and moss, and flourish amazingly.

A'RABIS—*Rock or Wall-cress* (from Gr. *arabis*, meaning Arabian, which the more important species are).
Nat. Ord. *Cruciferae*.

There are few gardens that are without at

A'RABIS—continued.

least one species of this family, and great acquisitions they are too. These, however, are usually perennials, but the following species are annuals. Like the perennial varieties they are useful for rock-work or for planting in crevices of old walls, or even in clumps on the margins of borders, where they will flower practically the whole summer till the end of September.

A. areno'sa, a native of Southern Europe, has dainty little purplish-rose flowers, 9 ins. high. 1866.

A. ve'rna, also from the same locality, is furnished with purple bloom a few inches taller than the above. 1710.

Sow the seeds $\frac{1}{8}$ in. deep outdoors in March or April.

ARCTO'TIS (from Gr. *arktos*, a bear, and *ous*, an ear).
Nat. Ord. *Compositæ*.

This family is not as well known as it deserves to be. The species are all beautiful, and most of them are endowed by nature with brilliant colouring, the flowers, similar in shape to a Marguerite, $2\frac{1}{2}$ to 3 ins. across. As the name denotes, the foliage is usually woolly or tomentose, deeply cut, somewhat fleshy, and of a greyish green, but there are a few exceptions to the rule. All the species are native of the Cape of Good Hope or S.W. Africa, and consequently revel in sunshine. But this, fortunately, does not make them difficult to

ARCTO'TIS—*continued*.

grow in this country. On the contrary, they are easily managed, a bed of them being quite a feature in the garden in June and July.

A. anthemo'ides. See SPHENOGYNE *anthemoides*.

A. arge'ntea has brilliant orange flowers, 1 ft. high. 1774.

A. calendula'ceæ is one of the best. It is, however, now classed as VENIDIUM *calendulaceum*, which see.

A. fastuo'sa is a species 2 ft. high, having orange and red flower. 1795. Syn., *A. spinulo'sa*.

A. fla'ccida, 1 ft. high, has white and red flowers. 1794.

A. gra'ndis is one of the finest annuals of recent introduction, and grows luxuriantly. It forms a little branched bush of soft, whitish hairy leaves, above which the daisy-like flowers, $2\frac{1}{2}$ ins. across, rise supported on long stems, 18 ins. to 2 ft. high, making them useful for arranging in vases. The upper surface is white with an inner ring of yellow, while the reverse side is pale mauve. It is a moisture-loving plant and will not thrive in dry soils. A native of S.W. Africa.

A. leptorhi'za brevisca'pa has very showy, intense yellow flowers and dark centres, the under side tinged with purple. The foliage is grass green, and not woolly like most of the species, except on the undersides.



THE PRICKLY POPPY (*Argemone grandiflora*).

[To face p. 22.]

ARCTO'TIS—*continued*.

A. leptorhi'za longisca'pa is similar, but longer in the flower stem.

A. Shra'deri has pink flowers. 1832.

A. sulphu'rea, with lemon-coloured flowers, only 8 ins. high, suitable for edgings.

A. virga'ta, 1 ft. high, has yellow flowers. 1816.

Sow the seeds $\frac{1}{16}$ in. deep in gentle heat in March or beginning of April, and prick out when large enough to handle in boxes or in a cold frame at the end of April, finally planting out in May or June about 1 ft. apart in a deep rich soil.

ARGEMO'NE—*Devil's Fig* or *Infernal Fig*, *Prickly Poppy*, *Mexican Poppy*, *Yellow Thistle* (from Gr. *argema*, a disease of the eye which this herb was supposed to cure). Nat. Ord. *Papaveraceæ*.

This is a small but choice family of Poppyworts, perennial in their native homes, but seldom withstanding an English winter, and always treated as annuals in this damp climate. The satin-like flowers are large, $3\frac{1}{2}$ ins. across, sometimes with bright yellow stamens, and produced in abundance on long stems in July and August. Before the flowers appear, the plants might easily be mistaken for some sort of thistle. They make capital plants for the mixed border.

A. hi'spida is 2 ft. high, having white flowers and prickly foliage. From California, 1879.

A. grandiflo'ra is better known than the above species, with flowers reminding one of the

ARGEMO'NE—*continued*.*A. grandiflora*—*continued*.

white Iceland Poppy, but larger. The foliage is Thistle-like, spotted with white and very prickly. Height 3 ft. Mexico, 1827. Syn., *A. platyceras*.

A. Mexicana. Height 2 ft., has pale yellow blooms. The pods and leaves are prickly, the latter blotched with white. The plant secretes a milky juice, which congeals, becoming yellow by exposure. Mexico in 1592-1597, where it is a troublesome weed.

Sow the seed $\frac{1}{4}$ in. deep in gentle heat, at the end of February or during March, transplanting carefully with a ball of earth in May in sandy loam. Or sow in the open at the end of March, and thin to 1 ft. apart so as to allow plenty of room. Like all the Poppy tribe they are impatient of removal, but otherwise easily grown.

ARNE'BIA—(An Arabic name). Nat. Ord. *Boraginaceæ*.

This is not an important family, and only two annual species may be mentioned, namely :—

A. cornuta. This is a rather tender plant, $1\frac{1}{2}$ to 2 ft. high, having Marigold-like blooms of rich yellow, with large brown-black blotches which subsequently disappear, the whole becoming yellow. Native of Afghanistan, 1888.

A. Griffithi. An uncommon dwarf plant, only 9 ins. high, and not very hardy. The flowers

ARNE'BIA—*continued*.

A. Gri'ffithi—*continued*.

are bright orange with black spots.
Afghanistan.

Sow in pots in 70° of heat in February, and plant out in May in a warm dry border.

ASPE'RULA—*Woodruff* (from *L. asper*, rough, in reference to the leaves). Nat. Ord. *Rubiaceæ*.

This is not a very important group for the garden, while most of the species are perennial, but the following are hardy annuals. Being dwarf, they are best used as an edging or else in groups. The plants are erect growing, with small hairy leaves and wiry stems.

A. azu'rea seto'sa is a little plant with small heads of mauve-coloured flowers, sweet smelling and long-lasting, and quite happy even in a poor soil or shady places. 12 to 15 ins. high. From the Caucasus, 1867. Syn., *A. orientalis*.

A. tricho'des is a rare annual from Persia, having white flowers in June. 1838.

Sow seed $\frac{1}{8}$ in. deep during the autumn to flower early the following summer, or in April in the open border to flower in June.

ASTER. CHINA (from Gr. *aster*, a star). See
CALLISTEPHUS hortensis.

ASTER *tenell'us*. See *Felicia tenellus*.

ATHANA'SIA *annua*. See *LONAS inodora*.

AUSTRALIAN EVERLASTING. *See* HELIPTERUM.

AUSTRALIAN MAN'IOC. *See* HIBISCUS *Manihot*.

AUSTRALIAN STAR FLOWER. *See* CEPHALIPTERUM
Drummondii.

BABY'S BREATH. *See* GYPSOPHILA.

BALSAM and BALSAMINA (from Gr. *balsamon*, the resin of the balsam tree, hence any exudation of aromatic substance). *See* IMPATIENS.

BARTO'NIA (named after Dr Barton, a botanist of Philadelphia). This genus is now classed as MENTZELIA, which see.

BEARD-TONGUE. *See* PENTSTEMON.

BEEF-STEAK PLANT. *See* PERILLA.

BEGO'NIA (derives its name from Michael Begon, a French promoter of botany). Nat. Ord. *Begoniaceæ*.

Begonias are not annuals, but are often treated as such, and have justly become popular bedding-out plants. It would be difficult indeed to mention anything that excels the brilliancy of a bed massed with them. The double and single tuberous-rooted kinds are quite unsurpassed for their profusion of bloom and varied colours. The fibrous-rooted kinds, both double and single, also make splendid beds, and are, if anything, rather more easily raised than the tuberous sorts; but for general effect they must take second place, as their flowers are not so large. Raised from seed the colours cannot

BEGO'NIA—*continued.*

altogether be relied upon to come true, but the following may be mentioned :—

B. Baulmanni hybrida is dwarf with rose-coloured flowers.

B. Erford is 1 ft. high, has dark foliage and rose-carmine flowers. A very good plant for beds.

B. hybrida marmora'ta, The Butterfly. White blotched on crimson ground.

B. semplerflo'rens. Fibrous rooted. There are many garden varieties. *Vernon*, red, bronze foliage. *Vernon compacta*, 5 ins. *Zulu King*, scarlet, foliage black-red. *Vulcan*, dark bronzed foliage, flowers orange-carmine. Height, 1 ft. *Crimson Gem, Fairy Queen, Duchess of York, etc.*

B. Worthiana. The orange-scarlet flowers have a tendency to hang their heads, but for all that, it is an excellent bedder.

Sow the seed, which is very minute, in January, on the surface of fine sifted sandy soil in pans, in a temp. of 70°. A second sowing may be made in February also. Moisten the soil before sowing, and afterwards put a sheet of glass over all. In about two weeks the seedlings should be ready to prick off, and this may be done in pots or shallow boxes, with a small pointed stick, a few inches apart. When they commence to crowd together, pot up singly into 3-in. pots. Gradually harden these off in a cool frame in May, and plant out 12

BEGO'NIA—*continued*.

ins. apart in the open at the end of June. Before doing this, however, prepare the beds liberally with leaf-mould or the remains of an old mushroom bed. During the summer they must be kept moderately watered, and it is better if they are not fully exposed to the sun. A mulch or covering of cocoa-nut fibre is beneficial in keeping the roots moist.

BELLE DE NUIT. *See* MIRABILIS.

BEL' LIS—*The Daisy* (from *L. bellus*, beautiful, pretty).
Nat. Ord. *Compositæ*.

All are perennial, but are easily, if not better, grown as biennials. These daisies are very popular, and on account of their bright colours and compact growth, make capital dwarf edgings. They are at their best in June.

B. peren'nis aucubæfo'lia. Red flowers with yellow blotched foliage—rather tender and dislikes foggy places.

B. peren'nis fl. pl., *The Double Daisy*. Florists' varieties, White, Rose, and Crimson.

B. peren'nis prolifera, *The Hen - and - Chickens Daisy*. So called because it sends out ten or twelve small flowers from the axils of the leaves, otherwise similar to the double varieties, 3 ins. high.

B. rotundifo'lia cœrule'scens. *See* BELLIIUM *rotundifolia cœrulescens*.

BEL'LIS—*continued.*

Sow seed in June $\frac{1}{8}$ in. deep in the open in the reserve garden, and transplant in October to where they are to flower the following June.

BELLIIUM—*False Daisy* (from *L. bellis*, a daisy). Nat. Ord. *Compositæ*.

The following species are quite hardy and suitable for edgings or the rock garden. Though not true biennials, they are best treated as such.

B. bellidiori'des. Height, 3 ins. White. May to September. From Italy, 1796.

B. rotundifolium cœrule'scens—*Blue Daisy*. Height 9 ins., pale blue and yellow. Morocco, 1873. Syn., *Bellis rotundifolium cœrules'cens*.

Sow in June $\frac{1}{8}$ in. deep outdoors in the reserve garden and transplant in October to their flowering quarters.

BELVEDERE. *See* KOCHIA.

BINDWEED. *See* CONVULVULUS.

BITTER BLOOM. *See* SABBATIA.

BLACK-EYED SUSAN. *See* HIBISCUS *africanus major*.

BLANKET FLOWER. *See* GAILLARDIA *grandiflora*.

BLEEDING HEART. *See* CHEIRANTHUS *Cheiri*.

BLITUM. *See* CHENOPodium.

BLUE BOTTLE. *See* CENTAUREA *cyannus*.

BLUE DAISY. *See* BELLIIUM.

BLUMENBA'CHIA (named after J. F. Blumenbach, of Gottingen). Nat. Ord. *Loasaceæ*.

A quaint family with curious flowers and graceful ornamental foliage. From S. America.

B. coron'ata grows about 18 ins. high, with quaint orange-red flowers, from July to September. Native of Chili, 1872. Syn., *Caiophora coronata*.

B. ins'ignis is a trailer with white flowers. July. From Monte Video, 1826. Syn., *Loa'sa palma'ta*.

B. lateri'tia, or *Chilian Nettle*, is a very rapid climber, making 6 ft. of growth in a season, and an excellent plant for covering trellis-work, etc., quickly. The foliage is pretty but stings when touched. The flowers, about 1 in. across, are orange-red and a very quaint shape. Under glass it is perennial, but for outdoors must be treated as an annual. It flourishes better in partial shade than in full sunshine. From Argentina, 1835. Syn., *Loa'sa auranti'aca*.

B. multifi'da, 1 ft. high, has greenish-red flowers. From Buenos Ayres, 1826.

Sow the seed $\frac{1}{16}$ in. deep in shallow pans of light soil in temp. 65° in March, and plant out in June in ordinary good soil, facing south.

BORA'GO—*Borage*, also written *borrage*, *burrage*, and *burridge* (probably from mediæval Latin *borra*,



THE SWAN RIVER DAISY (*Brachycome iberidifolia*).

BORA'GO—*continued*.

burra, rough hair, in reference to the woolly nature of the growth). Nat. Ord. *Boraginaceæ*.

B. officinalis, 2 ft. high. The common borage, so often seen growing in the kitchen garden where it is usually cultivated for flavouring purposes, is really a very elegant plant, the flower clusters being of an unusual blue colour, making it a plant deserving of better treatment. The whole growth, foliage and flowers, is covered with a hairy down. A native of Britain.

B. officinalis albiflora is a variety having white flowers.

Sow seeds in March $\frac{1}{8}$ in. deep where they are to grow, thinning out when quite young plants to about 8 ins. apart.

BRACHYCO'ME—*Swan River Daisy* (from Gr. *brachus*, short, and *kome*, hair). Nat. Ord. *Compositæ*.

A half-hardy annual and a pretty flower to plant in groups in front of a border. Native of the Swan River district of W. Australia. The flowers appear about the end of June.

B. ibericifolia. Height 8 to 12 ins. Bright blue to purple Cineraria-like flowers, having a blackish centre with a white halo. The foliage is most elegant and light, more like green hair than leaves.

B. ibericifolia albiflora. A variety of the former, with white flowers, 6 ins.

BRACHYCO'ME—*continued*.

B. Sinclair'i is a dwarf species with small daisy-like flowers, sometimes sowing itself in light soil.

Requires only simple culture. Sow on light hotbed in March or April, $\frac{1}{8}$ in. deep in shallow boxes of light soil in temp. 55° , and transplant seedlings outdoors in May, or later, about 6 ins. apart; or they may be sown in the open where they are to grow in April. Ordinary soil on warm sunny border. As the stems are extremely slender, it is an excellent plan to give a little support by putting in a few slender birch twigs cut from an old worn-out besom; otherwise a heavy rainstorm dashes the flowers level with the ground.

BRANCHED LARKSPUR. *See* DELPHINIUM *consolidum*.

BROMPTON STOCK. *See* MATTHIOLA *incana*.

BUNCH PINK. *See* DIANTHUS *barbatus*.

BUTTERFLY FLOWER. *See* SCHIZANTHUS.

BROOM-CYPRESS. *See* KOCHIA *scoparia*.

BROWAL'LIA (from J. Browall (1707-1755), bishop of Abo, in Finland). Nat. Ord. *Scrophulariaceæ*.

The Browallias are more often seen in green-houses than outdoors, as they make lovely pot plants, but in a warm spot they will thrive well during the summer months when planted out in beds or batches in the border. The verbena-like flowers are very attractive and useful for cutting.

BROWAL'LIA—*continued*.

B. ela'ta, 18 ins. high, sometimes called the Forget-me-not of the Andes, has violet-blue flowers, and is the best for outdoor planting. 1735.

B. ela'ta a'lba is a pure white variety of the above.

B. specio'sa, height 18 ins., and *B. speciosa major* have intense violet-blue flowers, but are more satisfactory under glass.

B. ela'ta grandiflo'ra is a bushy little plant 18 ins. high, with large white flowers tinged with blue. Peru, 1829.

B. Roe'zlii, 18 to 24 ins. high, forming a dense bush with shiny leaves. The light blue, sometimes white, flowers with yellow throat are borne in succession throughout the summer. A native of the Rocky Mountains.

The seeds should be sown in March $\frac{1}{8}$ in. deep in light soil in temp. 60° to 65°. Pot up as soon as the seedlings can be handled, place on a shelf in the greenhouse and water moderately. Weak manure water is beneficial in May and June when planted out.

CACA'LIA—*Tassel Flower* or *Flora's Paint Brush* (from Gr. *kakos*, evil, and *lian*, very much. Supposed to be injurious to the soil). Nat. Ord. *Compositæ*.

This hardy annual, though not much grown, is useful and pretty. It is not showy or brilliant, but well adapted for filling vases, having long strong stems and lasting well in water. About

CACA'LIA—*continued*.

18 ins. high. The seeds are said to have been brought from Paris in 1800.

C. aurea is a yellow variety of the type below.

C. coccinia, the best known of the two forms, has flowers like little red tassels, in terminal clusters, very elegant and light.

The Tassel Flower is very easily grown, and only requires to be sown about $\frac{1}{8}$ in. deep in April in any ordinary soil to flower in July to end of September; or else in September, as it will stand the winter. Sometimes it is raised in gentle heat in February and transplanted in May or June, but it does not like root disturbance.

CAIO'PHORA *lateritia* and *C. corona'ta*. See BLUMENBACHIA.

CALA'MPELIS *sca'bra*. See ECCREMOCARPUS.

CALANDRI'NIA—*Rock Purslane* (after J. L. Calandrini, a Genoese botanist). Nat. Ord. *Portulacæ*.

Many species of this family are perennial, but the following are rather dwarf annuals, some of which are pretty and effective, though many are of little account. *C. oppo'sitifolia* and *C. umbella'ta*, however, are striking rock plants, seeming to prefer a dry soil and sunny aspect. Natives of N. and S. America.

C. caule'scens. Rose flowers blooming in August. Mexico, 1827.

CALANDRI'NIA—*continued*.

C. compre'ssa. Height 6 ins. Rose. August.
From Chili in 1826.

C. grandiflo'ra. Height 1 ft. Is a showy plant
with succulent leaves, and likes a very sunny
position. Rose-pink, poppy-like flowers.
Chili, 1826.

C. glandulo'sa. See *C. monandra*.

C. Menzie'sii. Height 6 ins. Has flowers $\frac{1}{2}$ to 1
in. across of magenta, which rise erect. They
close up as the sun's strength diminishes in
the latter part of the day. May to October.
California, 1831. Syn., *C. speciosa*. There is
a white variety called *alba*.

C. mona'ndra. Height 9 ins. Red. August.
Chili, 1837. Syn., *C. glandulosa* and *parvi-
flora*.

C. oppo'sitifolia. Prostrate and distinct, having
large thick succulent leaves, and white
flowers. It blooms throughout the summer.
Oregon and N. California, 1888.

C. pa'rvi'flo'ra. See *C. monandra*.

C. procu'mbens. Height 6 ins. Is a spreading little
plant with rose-coloured flowers. August.
Peru, 1827.

C. specio'sa. See *C. Menzie'sii*.

C. umbella'ta. Height 6 ins. A distinct trailing
plant with flowers of a bright rosy-violet. It
likes sandy peat, and is sometimes perennial

CALANDRI'NIA—*continued*.*C. umbella'ta*—*continued*.

in crevices in the rock garden. July. Peru, 1826.

Propagate by seeds sown $\frac{1}{16}$ in. deep in shallow pans or boxes in light soil in temp. 55° to 60° in March, transplanting the seedlings out in June; or sow in the open in April. Position should be very sunny. Soil moderately rich, sandy, and light.

CALCEOLA'RIA—*Slipperwort* (derives its name from *L. calceolarius*, pertaining to *calceolus*, a slipper, from the resemblance of the inflated corolla to a slipper). Nat. Ord. *Scrophulariaceæ*.

The annual species of this family are few and these rarely seen. They are unassuming and of little consequence, but produce the same slipper-shaped flower so well known in the perennial variety.

C. chelidonioi'des. This little plant is of a succulent nature, and grows about 12 to 18 ins. high, neat and compact. The little lemon-yellow flowers are produced in July. Peru, 1852.

C. pinna'ta. This has been in cultivation as long ago as 1773, also from Peru, but there are few who would recognise it now. In old books on botany it is described as the wing-leaved slipperwort. The little pouched flowers are yellow but unpretentious, 12 to 18 ins. high.



THE COMMON MARIGOLD (*Calendula officinalis*).

[To face p. 36.

CALCEOLA'RIA—*continued*.

Sow in pots $\frac{1}{8}$ in. deep in a mild hotbed in March, when the seedlings will be ready for removal outdoors in a sunny position in May.

CALE'NDULA—*Marigold* (from L. *calendæ*, the first day of the month). Nat. Ord. *Compositæ*.

There are few people who do not know the old-fashioned Marigold, with its brilliant, albeit disagreeable-smelling, flowers. Every cottager almost grows it, willingly or unwillingly, as, once it is established, it is not easily eradicated, sowing itself, and often showing a few flowers even in the coldest weather. Formerly it had an economic value, being used to flavour dishes and colour cheeses, though nowadays it is scarcely mentioned in any cookery book.

C. aste'rias, *The Starred Marigold*, seems to have gone out of favour in these days, but is quite distinct from the Common Marigold. The flower is entirely yellow and single. 18 ins. high. August. N. Europe, 1838.

C. officina'lis, *The Common or Pot Marigold*, known also as *Gold* or *Goules* in certain districts, grows about $1\frac{1}{2}$ ft. high, and has the most intense orange to pale yellow flowers, sometimes with a dark centre, sometimes a yellow. There are good varieties cultivated called *Orange King*, with large double flowers; *Lemon Queen* or *Sulphur Queen*. Also double forms, *Meteor*, yellow, striped with pale lemon.

CALE'NDULA—*continued.*

C. officina'lis—*continued.*

Prince of Orange, rich orange, striped with pale lemon.

C. pluvia'lis. See DIMORPHOTHECA *pluvialis*.

The Common Marigold is as easy as any plant to cultivate. Sow in the border about $\frac{1}{2}$ in. deep and thin out to 1 ft. apart, any time from March to June, in a sunny position in ordinary soil. It may also be sown in autumn for spring flowering.

CALIFORNIAN BLUE BELL. See NEMOPHILA.

CALIFORNIAN POPPY. See ESCHSCHOLTZIA.

CALLIOP'SIS. See COREOPSIS.

CALLIRHO'E—*Poppy Mallow* (from Gr. *kallerræ*, one of the classic Oceanids). Nat. Ord. *Malvaceæ*.

These perennials are often treated as half-hardy annuals. They are bright and attractive and very free-flowering, remaining in bloom from July to the end of October, and deserve to be more grown than they are. Natives of N. America.

C. digita'ta grows about $2\frac{1}{2}$ ft. high, producing numerous poppy-like magenta flowers, about $1\frac{1}{2}$ in. across, shading to greenish-white towards the centre, each one branching out on a long slender stalk. The foliage is light and deeply cut. Syn., *C. grandiflor'a*.

C. involucr'da is a trailing species, not so hardy as the above, having red flowers with a purple tinge.

CALLIRHO'E—*continued*.

C. pedata grows about 1 ft. high with a trailing habit, bearing flowers of a glowing crimson colour and white centre.

Sow the seeds $\frac{1}{16}$ in. deep in pans of light soil and leaf mould in temp. 55° to 60° in March, transplanting them in the open in April; or they may be sown outdoors in April. Ordinary light rich soil, except for *C. pedata*, which does best on poor ground. The seeds of the last also are best soaked first before sowing.

CALLISTEM'MA. See CALLISTEPHUS.

CALLISTEPHUS—*China Aster* (from Gr. *kallistos*, most beautiful, and *stephanos*, a crown). Nat. Ord. *Compositæ*. Syn., *Callistem'ma*.

China Asters, as they are erroneously termed (having nothing in common with the true Asters or Michaelmas Daisies), are among the best and showiest annuals cultivated. In fact, they may be said to be indispensable where a display is required in late summer. To grow them well, a little trouble is necessary, but the gardener will be well repaid for it, as starved and sickly plants are in no wise to be compared with those that are carefully cultivated.

The varieties are extremely numerous, and the names given in catalogues are rather bewildering. Some take a single form, others double, while they range in height from the dwarf and rather stumpy ones of 8 or 9 ins. to the bolder and more graceful

CALLISTEPHUS—*continued.*

ones of 18 ins. and even 2 feet. The colours are as varied as the forms, and range from pure white through the different shades of pink, crimson, mauve, and purple,—in fact almost every colour except yellow, true blue, or green.

The taller varieties are capital to cut from and make handsome bouquets for vases, and for this reason it is as well to grow a batch in the reserve garden for that purpose, instead of depleting the beds of their colour.

C. hortensis is the original plant from which all the garden varieties have sprung. It is, nevertheless, one of the handsomest and the best for cutting, the blooms being 4 ins. across and of a beautiful pale violet or mauve shade with large yellow centres, supported on long graceful stems about 18 ins. long. China, 1731. Syns., *C. chinen'sis*, or *sinen'sis*, and *Callistem'ma horten'sis*.

The principal garden varieties of this are arranged more or less according to their height, the taller ones being best for cutting for vases, the medium for bedding, and the dwarf for small beds or as edgings.

The Ray Aster, a late flowering plant with large double needle-shaped blooms, rose or white. Height 20 ins.

Pompon or *Lilliput Aster* has small flowers, compact and pyramidal. Height 20 ins.



CHINA ASTER (*Callistephus chinensis*).

CALLISTEPHUS—*continued*.

Pæony-flowered Aster. This is one of the very finest, with immense flowers and petals incurved. There are but few side flowers, while the shades and colours are numerous. Height 18 ins.

The Emperor Aster. A very large flat-petalled double-flowered variety, sometimes 4 ins. across. Height 18 to 20 ins. It does not bloom quite so freely as some kinds, generally only 4 to 6 only on a plant.

The Victoria Aster is one of the finest. The petals curve outwards instead of inwards, as many do, and are as large as the *Emperor* variety, to which it is closely allied. Height 18 to 21 ins. It forms a compact bush, bearing 12 to 20 blooms of various sizes.

Ball or Jewel Aster. Globular, short-petalled, and incurved. Height 20 ins.

The Quilled Aster has rolled-up or quilled petals with high centre. Free branching and excellent for cutting. Height 20 to 24 ins.

Giant Comet Aster. This class is one of the most elegant, the blooms being loose and wavy like a Japanese Chrysanthemum. Particularly good for vase decoration. Height 18 ins.

CALLISTEPHUS—*continued.*

Cocar'deau, Cocade or *Crown Aster*, has large double blooms that are white in the centre, surrounded by some distinct colour, such as carmine, violet, or blue. Height 20 to 24 ins.

Ostrich Plume or *Feather Aster* is a graceful variety with large, loose, feathery flowers, double and semi-double, resembling the Japanese Chrysanthemums in form. One of the best. Height 18 ins.

The medium-sized Asters are as follows :—

Dwarf Victoria Aster is a smaller form of the Victoria Aster. Height 12 ins.

Dwarf Pæony-flowered Aster. A smaller representative of the Pæony-flowered Aster. Height 10 to 12 ins.

Dwarf Chrysanthemum-flowered Aster is of compact stiff habit and uniform height, and useful for pots or edging. Height 12 ins. This is a late variety.

Comet Aster. A small representative of the Giant Comet. Height 12 ins.

Dwarf Ostrich Feather Aster is similar to the Ostrich Feather, but not so tall. Height 10 to 12 ins.

The Dwarf Asters are :—

Dwarf Bouquet Aster. Quite a miniature, but compact, early, and free-flowering. Very good for potting. Height 9 ins.

CALLISTE'PHUS—*continued.*

Dwarf Comet Aster. Similar to the Comet, but only 8 ins. high. One of the earliest.

Propagate by sowing the seeds $\frac{1}{2}$ in. deep in boxes of light soil in temp. 65° in March. Germination is quick, and in less than a month the seedlings can be pricked off 2 ins. apart into other boxes. If placed near the glass and given plenty of fresh air on fine days, they will be ready to plant out in May or early June. Or they may be sown about the middle of April in a cold frame in drills 6 ins. apart.

Select an open, not too sunny, well-drained position. The beds should be well dug and prepared with well-decayed manure before planting out. That done, they will require little attention, except a liberal watering at first and in hot weather in the evenings. Sometimes the seedlings become subject to green fly, and when this is the case they should be now and then syringed with 2 oz. of soft soap mixed with 1 oz. of shag tobacco in a gallon of warm water.

CAMPA'NULA—*Bell Flower* (from *L. campana*, meaning a little bell). Nat. Ord. *Campanulaceæ*.

The Campanula family is a very large one. It consists principally of perennial plants, but there are, however, several annual and biennial species, some of which are most important acquisitions either for the garden or conservatory.

C. a'ttica is a dainty annual that makes, with its

CAMPA'NULA—*continued.**C. attrica*—*continued.*

rich green foliage and elegant little blue bells, quite a carpet if massed together, and lasts some months. An excellent plant for edgings or the rockery.

C. attrica alba is a pure white form of the above.

C. Lore'yi is another annual about $1\frac{1}{2}$ ft. high, with purple flowers appearing in June. Italy, 1824. There is a white variety, called *alba*.

C. macrostyl'a or *Candelabrum Bell Flower* is a plant with large flowers, pale violet veined with blue, having in the centre a large style, and quite distinct from any of the other species. It grows about 18 ins. high. It is only a half-hardy annual with us. From Asia Minor, 1877.

C. me'dium, or *Canterbury Bells*. This is a biennial plant and an old favourite both in the garden and as a pot plant. Having been cultivated so long (1597), many varieties have been raised, both single and double, pyramidal and bushy. It produces quantities of large, bell-shaped flowers on a central stem, about 2 ft. high, though it often branches out into quite a little bush if the central stem gets damaged. If the bells are taken off as soon as they wither a second crop will be the result, though not so fine as the first. Said to have come from Germany.



CANTERBURY BELLS (*Campanula medium*).



THE CUP AND SAUCER CANTERBURY BELLS (*Campanula medium calycanthema*).



[By permission of "The Garden."

THE STEEPLE OR CHIMNEY BELLFLOWER (*Campanula pyramidalis*),
(White variety, $8\frac{1}{2}$ ft. high.)

CAMPA'NULA—continued.

C. me'dium al'bum. White single form. There is also a double one.

C. me'dium purpu'rea is the single purple form. There is a double form too.

C. me'dium ro'sea is the pale pink form. A beautiful flower.

C. me'dium calyca'nthema. This is the *Cup and Saucer* variety, the largest and most handsome annual variety. The enlarged calyx is coloured like the corolla, the latter placed on the former as on a saucer, giving the appearance of a double inflorescence, about 3 ins. across. Either violet, white, or rose.

C. pentago'nia. See SPECULARIA *pentagonia*.

C. pyramida'lis, *Steeple* or *Chimney Bellflower*. A grand hardy plant, perennial by nature, but treated in this country as a biennial, as it usually dies down after flowering. Sometimes it does not flower till the third season after sowing. About May it commences to throw up a tall spike, very often three or four or even more, till July, having attained 4 or 5 ft. of growth (the author had one that was 9 ft.); it produces all round the stems quantities of violet bell flowers about 1 in. long. Half a dozen plants or so grouped together make a fine display. Although not adverse to full sunshine, it appears to make stronger plants when placed in semi-shade and becomes less

CAMPA'NULA—*continued*.*C. pyramida'lis*—*continued*.

drawn. It also makes a lovely plant for the conservatory. Bamboo stakes to support it are necessary when it gets very tall. There is a pure white variety equally attractive.

C. sibi'rica is a dwarf biennial plant, about 12 ins. high, having pale violet flowers, with the habit of *C. me'dium*. Siberia, 1783.

C. spe'culum. See SPECULARIA *speculum*.

C. thyrsoi'dea. A biennial of quite distinct form. Yellowish flowers in a dense head. Height 1½ ft. Switzerland, 1785.

Propagate the annual species by sowing the seed outdoors $\frac{1}{16}$ in. deep in March or April in a warm border, and thinning out, though *C. macrosty'la* is better started in warmth during March and hardened off and not planted out till June.

The biennials should be sown in June or July in the open, and thinned out to 12 ins. apart, or else in boxes and dibbled out when large enough to handle. In the autumn or late summer these will be ready to plant out where they are to grow, allowing 2 ft. apart in the case of *C. pyramidalis*, or potted up if intended for the conservatory in good-sized pots. Campanulas all like a light rich soil, and should never feel the want of water.

CANARY-BIRD FLOWER. See TROPÆOLUM *aduncum*.

CANARY CREEPER. See TROPÆOLUM *aduncum*.

CANDELABRUM BELLFLOWER. *See* CAMPANULA *macro-styla*.

CANDYTUFT. *See* IBERIS.

CANNA—*Indian Shot* (from *L. canna*, a reed). Nat. Ord. *Scitamineæ*.

It may be said at once, that Cannas are not annuals, but stove herbaceous perennials; but with care and trouble they may be grown from seed and treated as half-hardy annuals, and planted out in summer to flower the same year. They are most striking and noble plants on account of their fine foliage and erect spikes of bright flowers. It is not necessary, however, to give a list of the twenty or thirty different species and their varieties, as they cannot be depended upon to come quite true from seed, but the following may be chosen :—

C. lu'tea. Height 2 ft. Yellow. E. Indies, 1829. October.

C. sangu'nea. Height $3\frac{1}{4}$ ft. Scarlet. From Costa Rica, 1849. Syn., *C. Warszewiczii*.

C. specio'sa. Height 3 ft. Red. August. S. America, 1820.

C. sulphu'rea. Height 5 ft. Yellow. September. From Laguna in 1828. Syn., *C. lagunensis*.

Probably the best to raise from seed are Crozy's Dwarf Hybrids, as they do not take so long to grow as the taller ones. *Antonia Crozy*, crimson, with dark-coloured leaves. *Mme. Crozy*, orange red, with a margin of yellow. *Francois Crozy* and many others.

CANNA—*continued*.

The seed, which is large, must be soaked in warm water for twenty-four hours and then sown $\frac{1}{2}$ in. deep in pots, thumbs, or sixties, one seed to each pot, filled with sifted cocoa-nut fibre peat and sand. It is a good plan to file through, or nick with a knife, the outer hard skin, avoiding the dent where the germ lies. Water, and place in a bottom heat of temp. 80° in January or February. In less than a week probably the young plants will appear. Pot on into larger pots as they grow, using loam and cow manure with a little peat and sand, and keep in a moderate temperature, watering with a little guano as soon as the flower shows. In four or five months from the time they are sown they are ready to plant out in groups. The position must be a sunny one and sheltered. Keep them watered and syringed.

CAN'NABIS—*Hemp* (from *L. cannabis*, hemp). Nat. Ord. *Urticaceæ*.

C. sati'va. This ornamental plant is extensively cultivated in some countries for the purposes of manufacturing cordage, which is made out of the fibre in the skin or rind. It is well known in this country by reason of its rapid growth and stature, reaching about 8 ft., but in warmer climates twice that height is not uncommon. It is only grown in gardens for its foliage, which is light and elegant, and usually in strong clumps in the border. It is a native of Western and Central Asia.

CAN'NABIS—*continued.*

Sow the seed in the open where it is to grow in April. A sandy loam on a warm border suits its requirements, and in town gardens it flourishes well.

CA'NTUA *parviflora.* See IPOMOPSIS *inconspicua.*

CANTERBURY BELLS. See CAMPANULA.

CAPE FORGET-ME-NOT. See ANCHUSA *capensis.*

CAPE GIANT STOCK. See MATTHIOLA *fenestralis.*

CAPE STOCK. See HELIOPHILA.

CARBE'NIA *benedicta.* See CARDUUS *benedictus.*

CARDUUS—*Thistle* (L. *carduus*, a thistle). Nat. Ord. *Compositæ.*

A large family of thistles, mostly weeds, although the following is a handsome biennial that may be associated with other plants of a like nature.

C. benedic'tus, *Holy* or *Blessed Thistle.* Height 3 to 4 ft. The foliage is very fine. Large deep-green leaves, marbled with white. The flowers are yellow and bloom in August. Brought from Spain in 1548. Syn., *Centaurea benedic'ta*, *Cnicus benedic'ta* and *Carbe'nia benedic'ta.*

Propagate by seeds sown thinly $\frac{1}{8}$ in. deep in the open in March or April. Ordinary soil is sufficient, and the plants should be well thinned out.

CARPET PLANT. *See* IONOPSIDIUM.

CASTOR-OIL PLANT. *See* RICINUS.

CATCHFLY. *See* SILENE.

CELO'SIA—*Cockscomb* (from Gr. *kelos*, dry, burnt, in reference to the appearance of some species). Nat. Ord. *Amaranthaceæ*.

Mostly tropical annuals, and therefore tender and more suited for the greenhouse, but they are frequently planted out in the open air and make brilliant beds in a hot summer. The well-known *Crested Cockscomb* with its varieties is really an encouraged monstrosity of its original parent, the broad flattened crest being formed by the union of its branches. The *Feathered Cockscomb*, however, is by far the most effective of the two kinds for putting out in the open, and extensively used in the London Parks. It also lasts a long time in water when cut.

C. cristata, *The Crested Cockscomb*. Height 15 ins.
Dark crimson. July. From Asia in 1570.

C. cristata aurea. Golden yellow. July.

C. cristata coccinea. Height 4 ft. Magenta.
July. India, 1597.

C. cristata compacta. Height 2 ft. Dark red.
July. Asia, 1570.

C. cristata elata. Height 2 ft. Dark red. July.
Asia, 1570.

C. cristata flaves cens. Height 2 ft. Yellow.
July. Asia, 1570.



THE FEATHERED COCKSCOMB (*Celosia plumosa*).

[To face p. 50.

CELO'SIA—continued.

C. plumosa grandiflora, *The Feathered Cockscomb*.

Height $1\frac{1}{2}$ ft. Feathery plumes of crimson, pink, or yellow, quite distinct from the crested kind.

C. plumosa argentea linearis. Height $1\frac{1}{2}$ ft.

Rose, silvery on the lower part.

C. plumosa pyramidalis, *Thompson's magnifica*. A

new, stiff-looking race, 2 ft. high, having separate colours of yellow, purple, scarlet, crimson, blood-red and salmon, the foliage being of various bronzy colours. One of the best.

C. plumosa pyramidalis aurea. Height $1\frac{1}{2}$ ft.

A golden yellow variety.

C. plumosa pyramidalis coccinea. Height $1\frac{1}{2}$ ft.

A crimson variety.

Propagate by seeds sown $\frac{1}{16}$ in. deep in pans of light soil in temp. 75° at the end of February or beginning of March. Keep the seedlings close to glass and moist, transplanting them into thumb pots as soon as they have made three leaves, in compost of two parts fibry loam, one part leaf mould and well-decayed cow manure and sand. Keep near glass until the flowers show. Re-pot into 5-in. pots, and plunge into hotbed 75° for a time, gradually hardening them off. Syringe frequently. Plant out in June in good soil and a sunny position.

CE'LSIA (named after Professor Celsius, of Upsal). Nat. Ord. *Scrophulariaceæ*.

C. cre'tica, *The Cretan Mullein* is a fine stately plant, about 5 or 6 ft. high, that should be associated with such flowers as the Foxglove, Hollyhock, and Chimney Campanula, at the back of the mixed border. Though a biennial, it is best treated as a half-hardy annual, because it is not very robust in this country, and is often killed by late frosts if planted out too soon. The tall spikes which it throws up in June and July are a mass of yellow blooms, $1\frac{1}{2}$ ins. across, with two brown spots near the centre of each. It is botanically very like the *Verbascums* and differs in the flowers only by the absence of the fifth stamen. Native of Crete, 1752. Syn., *Verbas'cum lya'tum*.

C. lined'ris. See ALONSOA *linearis*.

C. urtica'fo'lia. See ALONSOA *incisifolia*.

Sow the seeds $\frac{1}{16}$ in. deep in pans in gentle heat, say 65° in March, and prick off the seedlings as soon as they are ready to handle into other pans. Shift into small pots later on, kept in cold frame, and plant out about the middle of May. Or it may be sown in July and kept in pots in a frame during the winter and planted out in the following May, thus treating it as a half-hardy biennial.

CENTAU'REA—*Centaury* (from L. *centaureum*, herb centaury). Nat. Ord. *Compositæ*.

A very large family, many of which are



CORN FLOWERS (*Centaurea cyanus*).

[To face p. 52.

CENTAU'REA—*continued*.

perennial, but some few are annual. The following are the best known and most important of the latter kind, very easily raised from seed, and not infrequently sowing themselves. They are splendid flowers to cut from, retaining their freshness for some time. Grow them in the border and give them plenty of room and sun. They flower in June and July.

C. america'na, *The Basket Flower*. Height 2 ft. Large-flowering, pale lilac-coloured flowers, 4 ins. across. July. Native of N. America, 1824.

C. america'na a'lba. A pure white variety of the above.

C. bened'icta. See *CARDUUS benedictus*.

C. crocody'lum. A rare variety, about 18 to 24 ins. high, with rose-pink flowers. Levant, 1777.

C. cya'nus, *Blue Corn Flower*, or *Blue Bottle*. Height 3 ft. A beautiful well-known native plant. The term Corn Flower Blue is proverbial, but there are white ones and pink. The following are varieties :—

C. cya'nus mi'nor. Height 2 ft. A diminutive variety of the type, with the same colours.

C. cya'nus compa'cta na'na. Height 9 ins. A dwarf garden form of the type. Of small consequence.

CENTAUR'EA—*continued*.

C. depré'ssa. Height 1 ft. The flowers bear a close resemblance to *C. cyanus*, but brighter in colour, a gentian blue with brownish-red centre. From Caucasus, 1818.

C. depré'ssa ro'sea. Height 1 ft. A pink variety of *C. depressa*.

C. fla'va. See *C. suaveolens*.

C. imperia'lis. Height $2\frac{1}{2}$ ft. An improved *Sweet Sultan*, a recent hybrid between *C. moscata* and *C. odorata Margarita*. It has very large, long-stalked, sweet-scented flowers, splendid for cut blooms. There are many varieties of colours, purple, rosy purple, rose, lilac, white, etc.

C. moscha'ta, *The Purple Sweet Sultan*. Height 2 ft. Charming old-fashioned, thistle-shaped flower, pleasantly scented, and excellent for cutting. Native of Persia, 1629. *Wedding Bells* is a recent variety with beautiful deep mauve flowers. Syn., *Amberbo'a moscha'ta*.

C. odora'ta Margari'ta, *The White Sweet Sultan*. Height 2 ft. Very fragrant and lasts a long time in water.

C. suave'olens, *The Yellow Sweet Sultan*. Height $1\frac{1}{2}$ ft. Pretty lemon-yellow, thistle-like flowers, doing best in light dry soil. A great favourite. From Levant, 1683. There is a new form, white with yellow centre. The *Bridegroom* having large reflexed radiated

CENTAUR'EA—*continued.**C. suave'olens*—*continued.*

mauve flowers. The *Bride* is pure white. *Bridesmaid*, white with yellow centre. *Honeymoon*, rich yellow. Syn., *Amberbo'a suave'olens*, *C. odora'ta*, and *C. fla'ra*.

Propagate by seeds sown $\frac{1}{8}$ in. deep where they are to grow in September or April. Those plants that are sown the previous September are, however, the most robust, and being hardy stand the winter well. They resent root disturbance, though it is possible to transplant them if moved with a ball of earth when young. The *Sweet Sultan* group are partial to a chalky soil, which should be added in the form of lime rubble if possible, where there is a deficiency of it.

CENTAURI'DIUM—Nat. Ord. *Compositæ*.

C. Drummond'ii. Height 3 ft. A bright, half-hardy annual from Texas, introduced in 1877. The flowers are large, somewhat similar to *Centaurea*, of a lemon yellow, and bloom during the warm months of the year. Syn., *Xanthi'sma texa'num*.

Sow seeds $\frac{1}{8}$ in. deep in pans of light soil plunged in a moderate hotbed in March or April, and planted out in May, or in the open at the end of April in mild weather.

CENTAURY. See CENTAUREA. Also ERYTHRÆA.

CENTRA'NTHUS (from Gr. *kentron*, a spur, and *anthos*, a flower). Nat. Ord. *Valerianaceæ*.

A small family of the Valerian order, the two mentioned species below being bright, free-blooming hardy annuals. Suitable for planting in sunny borders and rockeries.

C. calci'trapa. Height 1 ft. Flowers purple, in June. Portugal, 1623.

C. macrosi'phon. Height $1\frac{1}{2}$ ft. Has bright rose-coloured flowers, very like the well-known perennial species so often seen growing on walls in the south of England. Spain. July.

C. macrosiphon a'lba is a white variety. There is also a red variety, besides a dwarf form.

Sow seeds in March or April $\frac{1}{8}$ in. deep in open ground, thinning out the seedlings to 1 ft. apart. Or else in pans of light soil in temp. 55° at the beginning of March, putting the seedlings out in the open in May. Or they can be sown in September, pricked off into pots for wintering in the greenhouse, and planted out in spring.

CEPHALIP'TERUM *Drummon'di*—*Australian Star Flower* (from Gr. *kephalis*, a little head, and *pteron*, a wing). Nat. Ord. *Compositæ*.

This is a newly discovered (1905) plant hailing from West Central Australia. It is said to be unique and beautiful and easily grown. The flowers are perfumed, and possess a pleasing rosy-crimson shade, occasionally nearly white, which are borne in graceful clusters, and when cut will retain

CEPHALIP'TERUM—*continued*.

their colour and form, equalling in keeping qualities the so-called "everlastings." About 12 ins. high and the same through.

Sow $\frac{1}{8}$ in. deep in March in pots placed in a hotbed or greenhouse, and transplant outdoors in May or June. Or else in the open ground in April.

CERATOCAL'LOS *daturoi'des*. See DATURA *ceratocaula*.

CERI'NTHE—*Honeywort* (from Gr. *keros*, wax, and *anthos*, a flower). Nat. Ord. *Boraginaceæ*.

A small family allied to the Borage group. They are said to be hardy, and come from Greece. Not very much in favour, though most of them are cultivated. The flowering season is July.

C. a'spera, *The Rough Honeywort*. Height 1 ft., has racemes of yellow, tube-like flowers, which are black at the base, and beloved by bees. 1633.

C. ma'jor. Height $2\frac{1}{2}$ ft. Yellow. 1596.

C. mi'nor. Height 2 ft. Yellow and purple flowers, which bend over and are almost hidden by the foliage. 1570.

C. reto'rta. Height 2 ft. Yellow flowers tipped with purple and purple foliage. 1825. A pretty flower and as good as any of the others.

Propagate by seeds sown $\frac{1}{8}$ in. deep in April, where they are to grow; or better in temp. 60°

CERIN'THE—*continued*.

in March, and transplanted outdoors in May, in a sunny border.

CHALK PLANT. *See* GYPSOPHILA.

CHAMÆPEU'CE—*Fish-bone* or *Herring-bone Thistle* (from Gr. *charmai*, on the ground, dwarf, and *peuke*, the fir). Nat. Ord. *Compositæ*.

Highly ornamental, half-hardy biennials, grown for the sake of their low-growing, spiny foliage, which makes a good edging for flower beds. Their flowers, being of little value, should be stopped.

C. Casabo'næ. Very squat, dark green foliage, with small golden spines on the margin of the leaves. Native of S. Europe, 1791. Syn., *Cnicus Casabonæ*.

C. diaca'ntha is similar to the above in habit, but differing in colour, the leaves being a shiny purple-green with silvery veins and spines. Native of Syria, 1800. Syn., *Cirsium diacanthum* and *Cnicus diacanthus*.

Seed may be sown $\frac{1}{8}$ in. deep in light sandy soil in temp. 65° in February. But the best results are obtained by sowing in August or September in the open ground, putting the seedlings in pots, wintering them in a frame, and planting out at the end of May. They should be given a warm position and watered sparingly.

CHARIE'IS *hetero'phylla*. *See* KAULFUSSIA *amelloides*.

CHEIRA'NTHUS—*Wallflower*, *Wall Gilliflower* (from Gr. *cheir*, a hand, and *anthos*, a flower). Nat. Ord. *Cruciferae*.

These charming old-fashioned, yet always popular, flowers are very welcome in the spring time, not only for their rich colours, but also for their delightful fragrance. A well-arranged bed of Wallflowers is a "thing of beauty"; but they are just as happy growing on an old wall, and in that position enjoy a long life among the stones and rubble, whereas those in a bed will sometimes, if the situation is exposed, be cut down by frost and cold winds. Naturalised on a wall they are practically perennial, but for bedding out they are always treated as biennials, except the variety *Parisian Early*. The double German strains are very fine, both the tall and dwarf forms, while of the single kinds there are many to choose from.

C. alpinus. See *ERYSIMUM ochroleucum*.

C. Che'iri. The common single *Blood-Red Wallflower* in old times shared the name of *Heartsease*; while a dark-red variety was known in the West of England as *Bleeding Heart*. This was the ancestor of the improved garden forms originally brought from the South of Europe as long ago as 1573. The cultivated kinds include:—

The improved German strains of double golden yellow and red-brown Wallflowers produce large spikes, some with a branching habit,

CHEIRA'NTHUS—*continued.**C. Che'iri*—*continued.*

and deliciously scented, about 18 ins. high. There is also a dwarfer variety, 1 ft. high.

The single-named varieties include :—

Belvoir Castle, yellow, a good compact kind, hardier than most, and very suitable for bedding.

Covent Garden Blood Red is 18 ins. high, and the one usually seen hawked about in barrows in the London streets, and extensively grown for that purpose.

Eastern Queen or *Salmon Queen*. A single flower, pale apricot or chamois colour, changing to creamy white. Not particularly popular on account of its washed-out appearance. About 15 ins. high.

Golden Tom Thumb, only 9 ins. high, is bright yellow and single.

Harbinger. Height 18 ins. Blood red, a very early bloomer.

Old Purple. Height 18 ins. Brownish-purple, quite distinct. Single.

Primrose Dame. Height 18 ins. Sulphur yellow. Single.

Ruby Gem. Height 18 ins. Quite one of the best, the flowers large ruby-violet.

Parisian Early is a true annual. An agreeable light brown colour. Will flower from June to October.

CHEIRA'NTHUS—*continued.*

C. Che'iri—*continued.*

Veitch's Selected Yellow is about the finest strain of bright yellow Wallflower grown. Most robust and of medium height.

Vulcan. Velvety brown-crimson, compact and bushy. One of the best. 12 ins. high.

Wallflowers are frequently sown as late as July, but to get good "stocky" well-grown plants, it is much better to do so in May, or even in April, $\frac{1}{4}$ in. deep on a sunny border in the reserve garden, in 6-in. drills on firm ground. If left undisturbed all the summer, they grow a long straight tap root, making them difficult to move later on. To prevent this and also encourage good fibrous rootlets which will make them flower better later on, they should, in about three weeks' time, be lifted, the tap root severed with a sharp knife, and again replanted in 12-in. drills, 9 ins. apart. By the end of October, they will have become good-sized plants and well rooted, ready to plant out in the beds for spring flowering. In exposed places it is certainly beneficial to protect the beds with Gorse or something of that kind during winter.

For wall culture, seeds can be placed in the chinks and crevices, covered thinly with a little soil and kept watered till the young plants appear. Or else small seedlings may be inserted in the holes. Wallflowers also make good pot plants. The variety *Parisian Early* being a true annual

CHEIRA'NTHUS—*continued*.

will flower in June to October if sown in gentle heat in February, or early in March in a frame and planted out in May; or in September if sown outdoors in May.

CHENOPO'DIUM—*Goosefoot* (from Gr. *chen*, a goose, and *pous*, a foot, in reference to the shape of the leaves). Nat. Ord. *Salsolaceæ*.

This family is not one that merits much consideration, but may be noticed here as including some plants that are more curious than beautiful.

C. Atriplicis is a robust annual from China, whose erect reddish-branched stem, 3 ft. high, and leaves covered with a violet "bloom," entitle it to a place among "foliage" plants. Syn., *C. purpurascens*.

C. Blitum capitatum, the *Strawberry-blite*, is not a plant to grow for the sake of its flowers, which are inconspicuous and devoid of any corolla, usually the attractive part of a flower; but the deficiency is supplied by an ornamental highly-coloured fruited calyx, placed at the foot of the leaf-stalk, suggestive of little strawberries. These are succulent, tasteless, and harmless, and were formerly, it is believed, used in cookery as a colouring matter. Height $2\frac{1}{2}$ ft. May to September. S. Europe, 1680.

C. scoparium. See *KOCHIA scoparia*.

Sow in the open where they are to grow in March or April in ordinary soil.



See p. 74.]

CONVOLVULUS TRICOLOR.



CHRYSANTHEMUM CARINATUM BURRIDGEANUM and *CHRYSANTHEMUM*
CARINATUM ATROCOCINEUM.

[To face p. 63

CHICKLING VETCH. *See* LATHYRUS *sativus*.

CHILIAN BELLFLOWER. *See* NOLANA.

CHIMNEY BELLFLOWER. *See* CAMPANULA *pyramidalis*.

CHINA ASTER. *See* CALLISTEPHUS.

CHINESE PINK. *See* DIANTHUS *chinensis*.

CHRYSA'NTHEMUM (from Gr. *chrusos*, gold, and *anthemon*, flower). Nat. Ord. *Compositæ*.

The annual species of this very popular group are showy Daisy or Marguerite-like flowers, and well worth growing. Having long stems as cut flowers for vases they have few rivals, almost arranging themselves. For this purpose alone they should be extensively grown both in the border and the reserve garden. There are many different varieties, some of them double. They are very simple to grow, requiring only good ordinary garden soil, and bloom from July to the end of September. The seedlings vary much, but the following are distinct species:—

C. carina'tum. Height 2 ft. White with yellow band. From Barbary in 1796. Syn., *C. tri'color*.

C. carina'tum atrococci'neum. Height 2 ft. Rich deep scarlet with a yellow inner ring.

C. carina'tum Burridgea'num. Height 2 ft. White with crimson and yellow inner rings.

C. carina'tum Chameleon. Height 2 feet. New in 1899. Large, light coppery bronze, mixed

CHRYSA'NTHEMUM—*continued.**C. carina'tum* *Chameleon*—*continued.*

with purplish crimson, the former colouring changing into a clear yellow after a few days.

C. carina'tum, *Lord Beaconsfield*. Height $1\frac{1}{2}$ ft. Crimson, and gold edge.

C. carina'tum, *Evening Star*. Like the one below, only it has bright golden yellow flowers.

C. carina'tum, *Morning Star*. Height $1\frac{1}{2}$ ft. Pale primrose and golden eye. One of the most satisfactory of the annual Chrysanthemums to grow.

C. carina'tum, *The Sultan*. Crimson, with golden central ring.

C. carina'tum, *W. E. Gladstone* or *Eclipse*. Rich crimson.

C. corona'rium, *Crown Daisy*. Height 3 feet. This species is usually double, varying from pale yellow to crimson and purple. S. Europe, 1629.

C. Dunnet'tii is a small group of double-flowering Chrysanthemums. White or golden yellow, while there are also double dwarf forms.

C. inodo'rum pleni'ssimum. Height $1\frac{1}{2}$ ft. A very free double-white Pyrethrum-like flower. "Bridal Robe" is a good garden variety, excellent for bedding in a mass, 15 ins. high. "Snowball" is another fine form, $2\frac{1}{2}$ ft. high.

CHRYSA'NTHEMUM—continued.

C. multicaule. Height 2 ft. A good border plant with large yellow flowers and branching habit. Algiers.

C. myco'nis. A dwarf plant from the Mediterranean. It forms a rosette of leaves on the ground, and throws up yellow flowers singly on stalks, 6 ins. high. July. 1775.

C. se'getum. Height $1\frac{1}{2}$ ft. Yellow, the common native *Gowan* or *Corn Marigold* of the fields. For the garden it is better to grow the next below.

C. se'getum grandiflo'rum. Height $2\frac{1}{2}$ ft. An improvement on the former wild sort.

C. se'getum pu'milum is a dwarf form, 9 ins. high, forming a compact bushy plant, a mass of yellow bloom.

C. tri'color. See *C. carinatum* and its varieties.

Propagate by seeds sown $\frac{1}{8}$ in. deep in the open, grown where they are to flower, in ordinary soil in April; or in pans of light soil in temp. 65° in March, planting out in May in an open, warm position. The soil should have been previously well and deeply dug, plenty of manure being incorporated as the ground is turned over.

CHRYSE'IS. See ESCHSCHOLTZIA.

CHRYSTOSTE'MMA. See COREOPSIS.

CIRSIUM *diacanthum.* See CHAMÆPEUCE.

CLARKIA (named after Captain Clark). Nat. Ord.
Onagraceæ.

These popular Californian hardy annuals are a decided acquisition to the garden borders, especially the first one mentioned below, when grown in clumps. The flowers are most singular in shape, but at the same time elegant and long-lasting, blooming from the end of June to the end of August. Introduced from N. America about 1825 to 1832.

C. elegans. Height $2\frac{1}{2}$ ft. Erect and branching, exhibiting a profusion of beautiful flowers an inch or more across, of varying shades on strong stems. Rather later to bloom than the *pulchella* varieties. It is splendid for cutting for vases. The new varieties are:—*Brilliant* double salmon-scarlet; *Salmon Queen*, salmon-pink; *Carnation-flaked Pink*; *White Queen*, pure white; *Purple King*, deep purple, and a dwarf, known as *nana rosea*, or *Tom Thumb Pink*, 10 ins. high.

C. elegans flo're-pl'no is a name given to the double-flowering forms of the above.

C. integripe'tala. Height $1\frac{1}{2}$ ft. A variety with rosy flowers.

C. integripe'tala alba has single pure white flowers. There is also a double form.

C. integripe'tala, *Mrs Langtry*. White, crimson centre.

C. integripe'tala manina'ta, or *Morning Glory*, has double rosy-purple flowers, edged with white.

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1. *CLARKIA ELEGANS*.

2. *CLARKIA PULCHELLA*.

[To face p. 66.]

CLAYTONIA—continued.

C. pulchella. Height $1\frac{1}{2}$ ft. Magenta, purple, and other shades. There is a double form, and a dwarf variety only 1 ft. high. Blooms at the beginning of June. The *pulchella* varieties are not as choice as the *elegans* tribe.

Sow seeds $\frac{1}{8}$ in. deep in the open ground in March, and thin to 8 ins. apart. Successive sowings may be made in April, May, and June. Or sow the previous September, protecting with branches in frosty weather in exposed situations, and transplant in spring. Ordinary soil, well dug. They generally drop their seed and come up of their own accord in autumn.

CLARY. See SALVIA.

CLAYTONIA (named after Dr John Clayton, a botanist of Virginia). Nat. Ord. *Portulacæ*.

The Claytonias are a family of low-growing, humble herbs, suitable for the rock garden in sunny positions, but not of a high decorative order. The two named below are treated as hardy annuals, and flower from June to the end of August.

C. perfoliata, or *Winter Purslane*, is a little plant only 6 ins. high, having small spikes or racemes of white flowers, spreading widely where it is once grown. Native of N. America, 1794. Syn., *C. cubensis*.

C. sibirica, or *Siberian Purslane*, is also a dwarf of 6 ins., producing erect little white flowers,

CLAYTO'NIA—*continued*.*C. sibi'rica*—*continued*.

delicately streaked with pink. Siberia, 1768.
Syn., *C. virginica*.

Sow the seeds $\frac{1}{16}$ in. deep in the open ground in April. *C. sibirica* requires a wet, boggy, peaty soil.

CLIAN'THUS (from the Gr. *kleos*, glory, and *anthos*, a flower). Nat. Ord. *Leguminosæ*.

These truly magnificent plants may be tried as half-hardy annuals in favoured localities in Irish gardens, or in South Devon and other west country places where the climate is mild, in warm sunny positions, though they are all perennial in their native country. They are, however, more often to be seen in greenhouses or at Horticultural Exhibitions in this country than outdoors, but the brilliant colour and general quaintness of the flower clusters are sufficient qualifications to encourage one to give them a trial under the circumstances described.

C. Dampie'ri, *Dampier's* or *Glory Pea*. This species attains about 2 ft. in height. It produces pendent clusters of brilliant scarlet papilionaceous flowers, each having a conspicuous black blotch at the base. Australia, 1852.

C. Dampie'ri marginaltus is a variety of the above, having white flower clusters with a red margin, and black blotch as in the first-mentioned species, the foliage being pale green and woolly. 1866.

CLIAN'THUS—continued.

C. puni'ceus, or *New Zealand Glory Pea*, *Parrot's Beak*, or *Kowi* as it is called in the Antipodes. This species is more vigorous than the Australian form, 3 ft. in height. The flower clusters hanging from the axiles of the leaves are the most brilliant crimson colour. N. Zealand, 1832.

C. puni'ceus magni'ficus is an improved variety on the last. Syn., *Do'nia puni'cea*.

Sow the seeds singly $\frac{1}{4}$ in. deep in pots of loam two parts, leaf-mould or peat and sand one part, in temp. 75°, in March. Plant out in May or June, disturbing the roots as little as possible in doing so, and syringe frequently.

CLIMBING FUMITORY. See *ADLUMIA cirrhosa*.

CLINTONIA. See DOWNINGIA.

CLOUD PLANT. See GYPSOPHILA.

CNI'CUS (from L. *cnecus*, or *cnicus*, a thistle; pronounced *ni'kus*). Nat. Ord. *Compositæ*.

This is a very large family of the thistle tribe, the majority not being worth growing, but there are a few that are tall and effective in the wild garden or woodland. *C. casabonæ* and *C. diacanthus* are synonyms of *Chamæpeuce* (which see); and *C. benedictus* is placed under the head of CARDUUS (which see).

CNI'CUS—continued.

C. conspi'cuus, the *Scarlet - flowered Thistle*, or *Mexican Thistle*, is a handsome border plant growing some 6 ft. in height or more, the blood-red flowers appearing in September. From Mexico in 1825. Syn., *Erythrolœ'na conspi'cua*.

C. erio'phorus is also a fine plant with purple flowers, growing 3 ft. or more. Syn., *Cir'sium erio'phorum*.

Sow the seeds $\frac{1}{8}$ in. deep in March where they are to grow.

COBÆ'A—*Cup and Saucers* (named after Barnardez Cobo, a Spanish botanist of the seventeenth century). Nat. Ord. *Polemoniaceæ*.

C. scan'dens. This herbaceous climber, hailing from tropical America, is mentioned here as it is usually treated as a half-hardy annual in this country and sometimes as a half-hardy biennial plant. Being of extraordinarily rapid growth it is exceptionally well suited for growing against trellis work, verandahs, or over arbours and balconies. The dingy purple flowers, without close inspection, are suggestive of the well-known Canterbury Bells in shape and size, but are produced singly on strong stems in July. It must be planted in a sunny position, where it will flower freely, and with protection may survive a mild winter. Under



COBÆA SCANDENS.

(To face p. 70.)

COBÆ'A—*continued*.

C. scan'dens—*continued*.

glass it has been known to grow 200 ft. in a season, and will usually attain 10 ft. of growth outdoors during the summer. Mexico, 1792.

C. scan'dens a'lba has white flowers.

Sow the seeds $\frac{1}{8}$ in. deep in sandy soil in pots in temp. 75° during February or March. Plant out in June in not too rich a soil, otherwise it will develop too vigorously at the expense of the flower growth.

If treated as a biennial the young plants become established sooner and flower earlier. Sow in July in thumb pots, house from frost during the winter, shift into 4-in. pots in February, using rich soil, and transplant outdoors at the end of May. Water freely during the growing season.

COCHLEA'RIA *acaul'lis*. See IONOPSIDIUM *acaul'e*.

COCKSCOMB. See CELOSIA.

COLLIN'SIA—*Collins' Flower* (named after Zaccheus Collins, an early botanist). Nat. Ord. *Scrophulariaceæ*.

Pretty, shrubby, free-flowering N. American hardy annuals, of very simple culture, attractive for beds or mixed borders, even doing well in town gardens. They should be grouped together. There are several varieties, all of which flower during the summer.

COLLIN'SIA—continued.

C. bartsiaefolia. Height 9 ins. Purple. June. California. There is also a white variety.

C. bi'color. Height 1 ft. These flowers are produced in whorls or rings round the stem, the lower petals lilac and upper white. Very showy and the best known. California, 1833.

C. candidis'sima. Height 9 ins. Pure white; excellent for edging.

C. grandiflo'ra. Height 1 ft. A modest plant, having blue and pink flowers in whorls or rings round the stem. Columbia, 1826. A variety *carminata* is carmine.

C. tinctor'ia. Height 1 ft. Pale pink. California, 1848.

C. tincto'ria purpu'rea. Height 9 ins. A recent variety having deep violet flowers of a branching habit.

C. ver'na. Height 1 ft. Purple and blue. N. America, 1826.

C. viola'cea. Height 1 ft. Violet and white.

Sow seeds $\frac{1}{8}$ in. deep out of doors in September, March, or April, where they are to grow, thinning out to 3 ins. apart as soon as they are well up. *C. verna*, however, must be sown in September to flower the next year, and the others bloom earlier if autumn sown.

COLLO'MIA (from *kolla*, glue, in reference to the sticky secretion round the seeds). Nat. Ord. *Polemoniaceæ*.

Hardy annuals of compact habit, having large heads of brilliant flowers from July to October. There are several kinds, the ones mostly cultivated being :—

C. coccin'ea. Grows to about 12 ins. with clusters of small bright scarlet flowers. From Chili in 1832. Syn., *C. lateritia*.

C. grandiflo'ra. About 2 ft. high. This erect plant supports a compound flower, consisting of a cluster of small trumpet-shaped rose and buff florets. From Columbia, 1826-1831.

Propagate by seeds sown $\frac{1}{8}$ in. deep where they are to grow in September, or else in March and April, thinning out to 3 ins. apart. It likes a warm position, but produces more bloom on a poor soil than when highly cultivated.

COMMON CORN POPPY. See PAPAVER *Rhœas*.

COMMON FOXGLOVE. See DIGITALIS *purpurea*.

COMMON MARIGOLD. See CALENDULA. From Mary, *i.e.*, the Virgin Mary, and gold. Mary's Plant.

COMMON YELLOW SUNFLOWER. See HELIANTHUS *annuus*.

CONVOL'VULUS—*Bindweed* (from L. *convolvere*, to entwine). Nat. Ord. *Convolvulaceæ*.

Of the numerous species belonging to this family there is only one (together with its varieties) of any

CONVOLVULUS—*continued*.

consequence that is annual. There are others that used to be classed under the name Convolvulus, but these now are placed in the genus IPOMŒA (which see).

C. ma'jus. See IPOMŒA *purpurea*.

C. mi'nor is a synonym of *C. tricolor*.

C. Nil. See IPOMŒA *hederacea*.

C. purpur'eus. See IPOMŒA *purpurea*.

C. tri'color is a lovely flower, about 2 ins. across, of bright purplish blue, with a white throat divided by five yellow stripes from centre to edge. Height about 12 to 18 ins.

C. tri'color albiflo'rus is a variety having white flowers.

C. tri'color monstro'sus has deep violet flowers with white centre.

C. tri'color vitta'tus is striped with vittæ or bands.

C. tri'color ros'eus has a white centre, surrounded by a band of purplish-violet rays, divided by five broad yellow stripes from the throat, the margin being of a beautiful rose colour.

C. tri'color compactus is a dwarf form.

C. White Tassel is a name given to a new form of *C. tricolor*, having double white fringed flowers.

The cultivation is of the simplest nature. Sow $\frac{1}{8}$ in. deep in September for spring flowering, or in February in heat for planting out in May for early summer flowering, or again in April and May out-doors for later flowering.



COREOPSIS.

Tickseed.

COREO'PSIS, also called CALLIOPSIS—*Tickseed* (from Gr. *koris*, a bed bug or tick, and *opsis* resemblance, in allusion to the apparent similarity of the seed and the insect). Nat. Ord. *Compositæ*. Syn., CHRYSOSTEMMA.

These charming plants are indispensable in every mixed border and should be extensively cultivated, being bright and rich in colour, profuse bloomers, and excellent for cutting for vases. They come from different parts of the N. American continent, and are quite hardy even in town gardens, any ordinary garden soil suiting them.

C. aristo'sa. Grows to 2 or 3 ft.; large golden flowers. 1869.

C. artemisiæfo'lia. See *COSMOS sulphureus*.

C. Atkinsonia'na. Height 2 to 3 ft. Orange-yellow with brown-spotted centre.

C. atrosangui'nea. Height 3 ft. Deep rich crimson-brown flowers. 1823. Syn., *C. nigra speciosa*.

C. bi'color tinctor'ia. Height 2 to 3 ft. Rich chestnut-brown with yellow tips. Arkansas, 1823.

C. bic'olor splen'dens, gold and maroon.

C. Burrid'gi. Height 3 ft. Rich crimson and gold. Syn., *Cosmidium Burridgeanum*.

C. Cardaminifo'lia. Height 2 ft. Deep crimson.

C. corona'ta. Height 1½ ft. Orange-yellow, and chestnut-brown in the centre.

C. diversifo'lia. See *C. Drummondii*.

COREO'PSIS—*continued*.

C. Drummond'ii. Height $1\frac{1}{2}$ ft. Has larger and heavier looking foliage, distinguishing it from any other species. Golden-yellow with chestnut-brown centre. September, 1835. Syn., *C. diversifo'lia*.

C. filifolia. Height 2 ft. A most graceful plant from Mexico. Yellow. Syn., *Thelesper'ma filifol'ium*.

C. grandiflo'ra is perennial, but frequently treated as an annual, and easily flowered the first season. Height $2\frac{1}{2}$ ft. Large yellow flowers, finer than any of the others.

C. Marmora'ta. Height $1\frac{1}{2}$ ft. Striped and marbled flowers.

C. mari'tima. See LEPTOSYNE *maritima*.

C. Stillmann'i. See LEPTOSYNE *Stillmanni*.

C. tinctor'ia. See *C. bicolor tinctoria*.

Seed may be sown in September for spring flowering, $\frac{1}{8}$ in. deep; or in March up to June to flower in July to October, in a moist soil for choice.

CORN ADONIS. See ADONIS *autumnalis*.

CORNFLOWER. See CENTAUREA *cyannus*.

CORN MARIGOLD. See CHRYSANTHEMUM *Segetum*.

CORN ROSE. See PAPAVER *Rhæas*.

COSMAN'THUS *grandiflo'ra*. See *Phacelia grandiflora*.



THE MEXICAN ASTER (*Cosmos bipinnatus*).

[To face p. 76.]

COSMI'DIUM *Burridgeanum*. See COREOPSIS *Burridgi*.

COSMOS, or COS'MEA, *Mexican Aster* (from Gr. *kosmos*, beautifying). Nat. Ord. *Compositæ*.

The following members of this family are very handsome annual plants, exhibiting flowers 3 or 4 ins. across and elegant foliage. Being tall and producing their blooms only at the extremities, they are no mean objects for the back of the flower border or even in a bed by themselves. The blooming period is August to November, or till frost cuts them down.

C. atrosanguineus. Height 3 ft. This plant has deep crimson - purple Dahlia - like flowers. Mexico, 1861. Syn., *C. atropurpureus*.

C. bipinnatus. Height 4 to 6 ft. This is one of the best and most vigorous annuals, and splendid to cut from. The large Dahlia-like flowers are a pale crimson-purple colour with bright yellow centres. Mexico, 1799. There are also garden forms that are white and pink.

C. sulphureus. Height 2½ ft. Is a branched plant, having bright, pale yellow flowers on slender stems and glossy green foliage. Mexico, 1799. Syn., *Coreopsis artemisiæfolia*.

“*Rainbow*” is a recent introduction, with large flowers of pale colours, 6 ft. high.

Sow seed in light soil in temp. 65° to 70° in March, and plant out in May in a sunny position, about 18 ins. apart.

COTGRAVE. *See* DIANTHUS *barbatus*.

CREAM CUPS. *See* CELSIA *Cretica*.

CREPIS—*Hawk's-beard* (from *L. crepis*, an unknown plant). Nat. Ord. *Compositæ*.

C. barba'ta is a small semi-double Dandelion-like annual from South Europe, 1620-1632. It is useful for the rockery as an edging, or looks pretty sown in a mass in the border. The flowers are of three colours, red, yellow, and white, about 12 ins. high. Syn., *Tol'pis barbata*.

Sow the seed $\frac{1}{4}$ in. deep in April where required to grow.

CROWN DAISY. *See* CHRYSANTHEMUM *coronarum*.

CUP AND SAUCER CANTERBURY BELL. *See* CAMPANULA *medium calycanthema*.

CUP AND SAUCERS. *See* COBÆA.

CUP FLOWER. *See* SCYPHAN'THUS.

CU'PHEA (from Gr. *kuphos*, bending). Nat. Ord. *Lythraceæ*.

There are several pretty plants of this family that are useful for bedding out, though more often seen in the greenhouse. A few are annual, and the other perennial species may be treated as such, but coming from a warm climate like Mexico they must have a warm sunny position, where they will flower profusely during the hottest months.

C. æquip'e'tala. *See* *C. ocymo'i'des*.

CUPHEA—continued.

- C. em'inens*, 6 ins. high, has orange-red and yellow flowers, introduced in 1856. Syn., *C. jorullen'sis*.
- C. ig'nea*, *Cigar Plant*. Height 1 ft. Graceful branching habit with brilliant scarlet and black tubular flowers. This is the kind usually employed for bedding-out. 1845. Syn., *C. platycen'tra*. There is a white variety called *a'lba*.
- C. jorullen'sis*. See *C. eminens*.
- C. lanceola'ta*. Half-hardy annual, $1\frac{1}{2}$ ft. high, with purple flowers. 1796. There is a white variety named *a'lba*.
- C. minia'ta*. Half-hardy annual, 1 ft. high, with scarlet flowers.
- C. minia'ta compa'cta*. Half-hardy annual, $2\frac{1}{2}$ ft. high. Crimson and purple flowers, blooming till late in the summer.
- C. miniata purpu'rea*. Height $1\frac{1}{2}$ ft. A purple variety. 1847.
- C. ocymoï'des*. Half-hardy annual, 2 ft. high, with rich purple-violet flowers. 1859. Syn., *C. æquipetala*.
- C. platycen'tra*. See *C. ig'nea*.
- C. Roe'zlii*. Height $2\frac{1}{2}$ ft. Vermilion and orange flowers. 1877.
- C. silenoi'des*. Hardy annual, $1\frac{1}{2}$ ft. high, has blue flowers. 1836.

CU'PHEA—*continued*.

C. strigullo'sa, 1 ft. high, has yellow and red flowers.

A tender plant, may be planted in mild localities, but better suited for the greenhouse.

C. Zimapan'i. A good hardy annual, $1\frac{1}{2}$ ft. high; has flowers of deep purple, edged with a lighter shade. 1878. Excellent for cutting from, and lasts well in water.

Propagate by seeds sown $\frac{1}{8}$ in. deep in boxes of light sandy soil in temp. 75° in March; prick off seedlings into pots of loam, leaf-mould, or peat and sand, gradually harden off, and plant out in June in a rich dry soil. Water moderately.

CURLED MALLOW. *See* MALVA *crispa*.

CUT-FLOWER. *See* SCHIZANTHUS.

DAH'LIA (named after one Dahl, a Swedish botanist).
Nat. Ord. *Compositæ*.

It does not appear to be generally known among amateur gardeners that Dahlias may be raised like annuals by sowing the seed in the early months and flowering them the same year and at the usual time, about September. But this is so, though it is not the usual practice. Nevertheless, they are such important plants that this fact cannot be passed over. If they do not make quite such large plants the first season, they produce as fine flowers as those from cuttings or division of the roots, and there is always the chance of getting something new, as seedlings are always liable to variation.

DAH'LIA—*continued*.

The very large number that have been cultivated and hybridised owe their origin to either of the following wild kinds:—*D. coccinea*, *D. Merckii*, *D. Juarezii*, or *D. variabilis*, all natives of Mexico.

The variations are now divided into several classes, called Show, Fancy, Pompon, Cactus, Decorative, Single and Tom-Thumb Dahlias. Show and Fancy Dahlias are not so often seen as they used to be, the lighter Cactus and Single forms having become more popular. If they are to be raised from seed, it is useless to give names, as they seldom come true.

The Pompon or Bouquet class is small, double, and compact, very prolific flowers of numerous hues. Height about $2\frac{1}{2}$ to $3\frac{1}{2}$ ft.

The Cactus class is nowadays the most popular, being large but light in appearance, with long twisted petals, some 5 ins. across, forming bushes about $5\frac{1}{2}$ ft. high. There are both single and double forms.

The Decorative class grows about $3\frac{1}{2}$ to 4 ft. high, the blooms being something between a Single Dahlia and a Cactus, the petals being rolled and somewhat pointed, but not so much so as a Cactus.

Single Dahlias are coming into favour, as they lend themselves very well for vases in the house. They are bright, light, and elegant, and about

DAH'LIA—*continued.*

2 ins. across, the round petals being centred with a large yellow eye. About 3 to 4 ft. high.

Tom Thumb Dahlias. This is a variety not so often seen, though they are capital for bedding out, being only 12 to 18 ins. high. The flowers are small and single, but very prolific and of many colours.

Sow seed $\frac{1}{8}$ in. deep in light soil in pans in temp. 70° to 75° in February, pot singly in two parts turfy loam, one part decayed manure, and plunge in brisk bottom-heat shaded from sun. Harden off gradually when they should be ready to plant out in June. Apply liquid manure in July to September. Give them an open sunny position in a bed to themselves or in mixed border, and see that they are well staked when planted. This is absolutely necessary. Few flowers are easier to grow, seeming indifferent as to soil, provided they have plenty of elbow room. Of course the little *Tom Thumbs* do not require the space of the larger varieties, which should have at least 3 or 4 ft. each way.

DAISY. *See* BEL'LIS.

DAMASK VIOLET. *See* HESPERIS.

DAME'S ROCKET. *See* HESPERIS.

DAME'S VIOLET. *See* HESPERIS.

DAMPIER'S PEA. *See* CLIANTHUS *Dampieri*.

DANISH FLAG POPPY. *See* PAPAVER *somniferum*, variety *Danebrog*.

DATU'RA (from Hind. *dhatūra*, a plant). Nat. Ord. *Solanaceæ*.

The large trumpet-shaped flowers of the Daturas are remarkably handsome. As they hail from Mexico and other warm climes, they are, however, not hardy in this country, though there is a *Datura* native of this country, but of little consequence for the garden, namely, *D. Stramon'ium*. The seed pods are large, round, and spiny. They flower in August and September till frosts cut them down.

D. ceratocau'la is a plant $2\frac{1}{2}$ ft. high, exhibiting large scented flowers 6 ins. long and 4 ins. across and upright. These are white, but slightly striped outside with violet. S. America, 1805. Syn., *Ceratocau'los datu-roi'des*.

D. chloran'tha flo're ple'no, about 2 ft. high, produces double pale yellow blooms which are sweet smelling. A good plant for the conservatory too. Mexico, 1845.

D. cornuco'pice, or *Horn of Plenty*, is a form of *D. fastuosa* with huge flowers. It is remarkable for being triplicate, that is, having three flowers one within the other, the interior being pure white with violet outside. About $1\frac{1}{2}$ ft. high. A garden form.

DATU'RA—*continued*.

D. fastuo'sa, or *The Thorn Apple*, is a plant 3 ft. high. The flowers are double, white within, and violet on the outside.

D. fastuo'sa Huberia'na is another double garden variety, said to be a cross between *D. fastuosa* and *D. chlorantha fl. pl.* There are several shades of colouring.

D. hu'milis fla'ra is a pale yellow species, 2 ft. high. Mexico, 1829.

D. Met'el has pure white flowers, often mistaken for the next following, which, however, is longer in the tube.

D. meteloi'des, or *Wright's Datura*, is a handsome plant with large, pure white flowers veined with pale purple on the exterior; 6 in. long, 4 in. across. It is about 4 ft. high, and makes quite a branching tree-like growth. A handsome specimen for a sunny sheltered border. California, 1856. Syn., *D. Wright'i*.

D. quercifo'lia. 1½ ft. high. Has pale mauve flowers with oak-leaved foliage. Not so handsome as those mentioned above. Mexico, 1824.

D. Wright'i. See *D. meteloides*.

Sow the seeds, which are fairly large, singly $\frac{1}{8}$ in. deep in sandy soil in pots in hot-bed about 65° in March. Plant out in light sandy soil in a sunny sheltered border in May. Water sparingly. A little liquid manure applied when the plants are in flower is beneficial.



LARKSPUR (*Delphinium ajacis*).

DEAD-MEN'S-BELLS. See DIGITALIS.

DELPHIN'IUM—*Larkspur* or *Rocket* (from Gr. *delphin*, a dolphin, from the spur of the flower being likened to a dolphin). Nat. Ord. *Ranunculaceæ*.

The annual Larkspurs rank among the beauties of the summer garden, their gaiety for their size being unrivalled, while their variety of colouring, hardiness, and simple culture, and their usefulness as cut flowers, render them great acquisitions.

They are not so tall or as stately as their well-known perennial cousins, but are by no means meagre in growth, some species reaching 3 or 4 ft. in height, while others again are dwarf. They flower from the end of June till the end of September, according to the time of sowing.

D. Aja'cis, or *Rock Larkspur*, grows about 18 ins. high in erect spikes of pink flowers. This is one of the original ancestors from which the numerous garden forms have sprung. Switzerland, 1573.

D. Aja'cis mi'nus, or *Lesser Larkspur*, is about 2 ft. high, having double flowers on a single spike. The colours of the garden varieties are white, flesh-colour, pink, mauve, violet, pale violet, blue, blue-grey, chestnut, and white, with many different coloured stripes.

D. Aja'cis hyacinthiflo'rum, or *Hyacinth-flowered Larkspur*, is a dwarf Larkspur. Flowers similar to the above, but the spikes taper more and are further apart.

DELPHINIUM—*continued.*

D. consol'idum, or *Branched Larkspur*. 2 ft. high with blue single flowers. There is a double-flowered variety. This is one of the original parents of the branching group of garden Larkspurs, the variety called *candela'brum* bears different coloured flowers on pyramidal spikes. *The Emperor*, comprising three sorts, dark-blue, red-striped, and tri-coloured double flowers, is the last to flower, and about 18 ins. to 3 ft. high.

D. ranunculiflo'rum, *The Ranunculus-flowered Larkspur*. Height 18 ins. Is later in blooming. This is a garden strain, as is also the *Stock-flowered* variety, which is 3 ft. high and branching, in two colours, scarlet and blue.

Blue Butterfly is a new kind, with beautiful blue flowers—an excellent bedder.

Sow seeds $\frac{1}{8}$ in. deep in the open ground where they are intended to bloom in September, March, or April, the seedlings being thinned out to 4 to 6 ins. apart. The branching sorts may be raised in the reserve garden, and transplanted carefully with a ball of earth when 1 ft. high. Ordinary rich soil.

DEPTFORD PINK. See DIANTHUS *armeria*.

DEVIL-IN-THE-BUSH. See NIGELLA.

DIANTHOIDES *dianthiflo'ra*. See GILIA *dianthoides*.

DIANTHUS—*The Pink* and *The Carnation* (deduced from Gr. *dios*, of Jupiter, divine, and *anthos*, a flower ;

DIANTHUS—*continued*.

or *dianthes*, meaning double-flowering). Nat. Ord. *Caryophyllaceæ*.

The species of this large family are mostly perennial, but the following are annual or biennial, or like the well-known *Sweet William*, a member of this genus, are usually grown from seed and treated as biennial.

D. armeria or *Deptford Pink*. A true annual and a native of England, though rare. The flowers are small and clustered, speckled pink and white, about 12 ins. high. A pretty plant for the rockery in July and August.

D. barbatus, *The Bunch Pink*, *Sweet William*, *Sweet Johns*, *Tolmeyners*, *London-tufts*, or *Cotgrave*.

With so many names it is easily inferred this plant has long been popular. It is indeed perennial, but is usually propagated by seed and treated as a biennial, blooming the year after sowing. It is absolutely hardy and vigorous, bearing clustered flowers of varied zonal colouring, usually a pink or crimson shade and white, but often of one hue, spotted, streaked, eyed and margined, smooth-edged or indented. A new variety with brilliant colouring is called *Pink Beauty*. It is a salmon-pink shade and a plant of striking colour when grown in large masses, the foliage being almost hidden by the broad flower clusters in the month of June.

DIANTHUS—*continued*.

The old-fashioned Sweet William was introduced, it is said, as long ago as 1573 from S. Germany.

Sow the seeds in April $\frac{1}{8}$ in. deep in light soil outdoors in a sunny spot, transplanting to 10 ins. apart in July or September to where they are to bloom the following year. Although the plants do well in ordinary soil, they are all the better for a little leaf mould and rotten turfs broken up. When the blooms begin to show, give a dressing of guano, and water well in dry weather. A second application of liquid manure applied just as the flowers begin to open is very beneficial for a fine display. They are rather subject to Black-fly, and should this occur it can soon be got rid off by syringing with essence of quassia diluted.

D. Chinen'sis (sometimes spelt *sinensis*). *The Chinese Pink, The Japanese, and Indian Pink.* This and its varieties are very floriferous plants of small stature, suitable for beds or groups in the front of the mixed border, and seldom grow above 1 ft. high. The forms and colouring are very variable and easily hybridise.

Sometimes they are sown in the spring and treated like half-hardy annuals, while some gardeners prefer to sow them in autumn to flower the following year. Sometimes also,

DIANTHUS—continued.

D. Chinen'sis—continued.

though not often, they survive to flower a second season. The following are varieties, viz. :

- D. Chinen'sis Heddewi'gi*. This is commonly known as the *Japan Pink*. The flowers are single, crimson, pink, and white. There are several garden varieties of this. *Crimson Belle* is a good one with rich brilliant crimson flowers. *Eastern Queen* is also fine, having delicately marbled flowers of salmon-red with rose and pink.
- D. Chinen'sis Heddewi'gi diadema'tus* is a double flowering variety with large blooms of various colours. *Mourning Cloak* has rich deep crimson blooms, strikingly edged with white. *Purity* is a pure double white. *Fireball* is another novelty, having double scarlet-crimson flowers.
- D. Chinen'sis Heddewi'gi lacinia'tus* is a pretty strain, having fringed or frilled edges. There are double and single garden forms. *Lucifer* is a new variety of dazzling orange-scarlet, the most brilliant of all. Height 12 ins. *Salmon Queen*, of which there are single and double varieties, is a salmon-red shading to pink. *Zonalis* has fringed salmon-red petals with a distinct deep purple inner ring. *Royal Pinks* has large fringed single flowers about 3 ins.

DIANTHUS—continued.

D. Chinen'sis Heddewi'gi lacinia'tus—continued.

across, of a blood-red colour varying to pink and sometimes to white. About 15 ins. high. *Superbis'simus* has giant single broad-petalled flowers of beautiful colours. Height 15 ins.

D. Chinen'sis Atkinso'ni. A biennial garden variety about 6 or 8 ins. high. Its flowers are a brilliant blood-red colour and produced in profusion, though the habit of this form is more straggling than many of them.

D. sinen'sis. See *D. Chinensis*.

There is a strain of carnation hybrids between *D. Chinensis* and *D. Caryophyllus*, which are commonly called annual carnations, because they grow best from seed and flower within six months of sowing, and though they may last another season they quickly deteriorate, or else die. Therefore it is far better to treat them as annuals. Among the best are—*Margarita*. This bears a profusion of clove-scented flowers of varied colours, each one being fringed. Height 18 ins.

Grenardin is a double scarlet, and may be depended upon to come true from seed. Sweet scented. Height 15 ins.

Riviera Market is a strain of mixed shades. Height 2 ft.

DIANTHUS—*continued.**D. sinen'sis*—*continued.*

Geant de Nice is of great size and rich colouring, the flowers being borne on stout stems. Height 2 ft.

Vanguard is a new strain of beautifully scented blooms of exquisite shape and varied colour.

Sow the seeds $\frac{1}{16}$ in. deep in February to March, or, as some recommend, in August or September, in well-drained pots in a compost of loam, leaf-mould, and sand, about $\frac{1}{2}$ in. apart, only just covering them with the soil. Place these in a frame with very little heat, and prick off, as soon as the seedlings are large enough to handle, into boxes, 2 ins. apart, filled with the same compost, and let them remain in the frame as before. As soon as they are 3 or 4 ins. high, transplant where they are to bloom in the summer; but if autumn sown keep in the frame till the following April, when they will be nice strong plants to place where they are to bloom the same summer.

A little lime rubble is an excellent thing to add to the soil when planting out, and allow 12 ins. between each. Pinch out the tops at an early stage to encourage laterals to sprout, thereby obtaining more flowering shoots.

D. barbatus is treated specially under its own heading.

DIAS'CIA *Barbæ'rae* (from Gr. *diaskeo*, to adorn, in allusion to the beauty of the flower). Nat. Ord. *Scrophulariaceæ*.

A charming little annual from S. Africa, resembling *Nemesia*, to which it is allied. Its spurred coral-pink flowers are freely produced on slender branching stems during the summer months. An excellent plant for small beds or in groups in a border. About 8 ins. high.

Sow the seed in pans on a hot-bed in February or March, and plant out in May in light soil in a sunny position. Under exceptional circumstances it has been known to survive a winter and to bloom again the following summer.

DIDIS'CUS (from Gr. *di*, meaning twice, and *diskos*, a flat disc). Nat. Ord. *Umbelliferae*.

C. cæru'leus is a half-hardy annual which grows about 18 ins. high. It is not particularly showy, but the branched umbels or thick clusters of lavender flowers, 2 ins. across, are neat and pretty, and last well in water when cut. These appear in July and continue to bloom till September. Being a native of Australia, whence it was brought in 1827, it requires a hot summer to bring it to perfection and full sun striking on it. The edge of the mixed border is the best place for it. Syn., *Trachyme'ne cærulea*.

Sow in a hot-bed temp. 65°, or in boxes of light soil, in March. Prick off the seedlings into pots,



DIDISCUS CŒRULEUS.

DIDIS'CUS—*continued*.

and in May transplant them out of doors, 12 ins. apart, in sandy loam and leaf mould.

DIGITA'LIS—*Foxglove, Finger Flowers, or Dead Men's Bells* (from L. *digitalis*, a *finger-stall* or *thimble*, so named by the German botanist L. Fuchs, in reference to the shape of the flowers). Nat. Ord. *Scrophulariaceæ*.

A beautiful biennial plant, too well known to require much description, and a native of our own country from Cornwall to the Orkneys, but not the Shetlands. It is not adverse to shade, and on that account is a great acquisition in the woodland and other parts of the garden, and it must indeed be a poor soil where it will not grow. It is most effective if grouped together in a mass, single plants not showing themselves off to so much advantage, and if grown in a mixed border should be placed at the back, as they attain 4 to 5 ft. in height, and flower in June and July.

D. ambi'gua. Grows 3 ft. or so with beautiful pale yellow flowers, and counted amongst the most beautiful flowers that adorn the Alps of Switzerland and Tyrol. 1596. Syns., *D. grandiflo'ra* and *D. ochroleu'ca*.

D. au'rea. Height 2 ft. with yellow flowers. From Hungary, 1816. Syns., *D. læviga'ta* and *D. fusce'scens*.

DIGITA'LIS—*continued*.

- D. eriostac'hya*. Height 3 ft. Brown and yellow.
Russia, 1897.
- D. ferrugin'ea*. Height 4 ft. Flowers brownish.
Italy, 1597.
- D. fusces'cens*. See *D. aurea*.
- D. grandiflo'ra*. See *D. ambigua*.
- D. lanata*. Height 2 ft. Yellow. June.
Hungary, 1789.
- D. lævigata*. See *D. aurea*.
- D. ochroleu'ca*. See *D. ambigua*.
- D. purpur'ea*. The Common Foxglove of Britain, 4 to 6 ft. Mauve. There are some fine garden varieties of this called *gloxiniæflo'ra*, on account of their supposed resemblance to the Gloxinia, their throats being spotted and blotched with different shades of purple and maroon or chocolate.
- D. purpu'rea al'ba*. A pure white strain of the above, and one of the handsomest plants grown. Very effective against a dark background. There are also forms more or less spotted with claret colour.
- D. purpu'rea monstro'sa*. A curious form, the terminal flower develops before the others and in an upright position.
- D. stenoph'ylla*. Height 5 ft. Buff colour with yellow centre, foliage white edged. From Smyrna.



FOXGLOVE (*Digitalis purpurea*).

[To face p. 94.



DIMORPHOTHECA AURANTIACA.
The Namaqualand Daisy.

DIGITA'LIS—*continued*.

Sow seed $\frac{1}{16}$ in. deep where they are wanted to grow in April to June, or in a reserve bed, and transplant in the autumn 18 ins. apart in a shaded border, or alongside the woodland walks. After the first planting they usually sow themselves, when the seedlings can be pulled up and transplanted where required.

DIMORPHOTHE'CA (deduced from Gr. *dimorphos*, having two forms, and *theke*, a case, box). Nat. Ord. *Compositæ*.

D. auranti'aca, *The Namaqualand Daisy*, is a half-hardy annual recently introduced from Namaqualand, S. Africa, 1907. It produces during summer a profusion of large Marguerite-like flowers of a glossy golden-salmon or orangy colour, with black central ring. Height 12 to 15 ins. Requires a sunny position. Quite one of the best of the newer annuals, and destined to become popular.

A still more recent variety (1910) of the same thing is in store for the public (not in commerce yet). It is a pale apricot shade, and will no doubt become popular too. It has not yet received a name.

D. pluvial'is, *The Great Cape Marigold*. An attractive hardy annual from S. Africa. Height 1 to 2 ft. Large single Marguerite-like flowers, white with yellow centre, and mauve on the reverse or under side, blooming all

DIMORPHOTHE'CA—*continued*.*D. pluvia'lis*—*continued*.

July to the end of September. In the evening and during cloudy weather it has the property of closing up. Excellent for planting in the mixed border. 1699. Syn., *Cale'ndula pluvia'lis*.

Sow the half-hardy species in slight heat in March and prick out. Sow the seeds of *D. pluvialis* in the open border in April $\frac{1}{8}$ in. deep about 1 ft. apart. The young plants do not care about being disturbed, unless moved very carefully with a ball of earth round the roots.

DO'LICHOS *La'blab*—*The Purple Soudanese Bean* (from Gr. *dolichos*, long, with reference to its long twining shoots. *Lablab* is the Arabic for *Convolvulus*). Nat. Ord. *Leguminosæ*.

A half-hardy twining plant, best treated as an annual, with rose-violet pea-shaped flowers and ruby coloured seed-pods. Suitable only for a south aspect. Native of the Soudan, 1794. Syns., *D. bengalen'sis* and *D. purpur'eus*.

Sow seeds in heat 65° or 70° in February or March, and plant out in June. Add a little peat, and water freely during summer. It is, however, what gardeners would call a "tricky" plant to rear.

DO'NIA *puni'cea*. See CLIANTHUS *puniceus*.



ECCREMOCARPUS SCABER.

DOWNIN'GIA (named after A. J. Downing, a landscape gardener of New York). Nat. Ord. *Campanulaceæ*. Frequently called *Clinton'ia*.

These pretty little dwarf annuals, introduced from California in 1827, are well worth growing for hanging baskets, edging beds or borders, or pot culture, and closely resemble the well-known dwarf blue Lobelias, but are brighter. The two varieties are similar in habit.

D. e'legans. Only 6 ins. high. Flowers blue and white in June to September. Syn., *Clinton'ia e'legans*.

D. pulchel'la. The same height as the former, with violet-blue, white, and yellow flowers. Syn., *Clinton'ia pulchel'la*. The varieties are *al'ba*, white, *atropurpur'ea*, deep purple, and *ru'bra*, red.

Sow the seeds $\frac{1}{8}$ in. deep in the open ground in April, and thin out to 6 or 8 ins. apart in May; or sow in February, temp. 55°, in loam, leaf mould, and sand, and plant out in May. Give a little liquid manure on beginning to flower.

DRAGON'S MOUTH. See ANTIRRHINUM.

ECCREMOCAR'PUS (from Gr. *ekkremes*, hanging, and *karpos*, fruit, in allusion to its pendent seed-pods). Nat. Ord. *Bignoniaceæ*. Known also as *Calam'pelis*.

E. sca'ber, or *Chilian Glory Flower*, is a favourite creeper of elegant and rapid growth, 15 ft. or so high, but unfortunately tender. It is not a true annual, and in the south-west of

ECCREMOCAR'PUS—*continued*.*E. sca'ber*—*continued*.

England and Ireland it sometimes keeps green all the winter and even flowers then; but it is best to sow seed each year, because the old plants usually die during the winter even if protected. Its tubular flowers, of a brilliant red-orange colour hanging in loose racemes, are charming, as it rambles up and throws itself over anything within reach. It is at its best in July to September, revelling in the sunshine. A native of Chili and introduced in 1825.

E. sca'ber au'rea. This is a new form with bright yellow flowers.

E. sca'ber carmin'eus is a new form with carmine flowers.

Sow the seed $\frac{1}{16}$ in deep in pans or pots in March, in gentle heat about 65° to 70°, and plant out at end of May or beginning of June against a pillar, balcony, wall, or trellis in a south aspect, the soil light but good. Or they may be treated as tender biennials and sown during July in small pots, housed during the winter from frost, shifted into 4-in. pots in rich soil in February, and planted out at the end of May. By treating them thus they bloom earlier.

EGYPTIAN ROSE. *See* SCABIOSA.

ELEPHANTS' TRUNK PLANT. *See* MARTYNIA *Probo-scidea*.



ERYSIMUM ARKANSANUM.

ERYSIMUM (from Gr. *eruo*, to draw, in allusion to its supposed property of raising blisters). Nat. Ord. *Cruciferae*.

The Wallflower-like Erysimums are extremely free and continuous-flowering biennials, not nearly as often grown as they deserve to be, and if profusely massed together they make a show of bright colour in the spring and early summer, surpassed by few other flowers at that time of year.

E. Arkansa'num, *The Western Wallflower*, 18 ins. in height. A perfectly hardy plant, with erect racemes of mustard-yellow flowers.

E. ochroleu'cum helvet'icum, *The Alpine Wallflower*, forms little bushy plants about 9 ins. high, with pale yellow flowers. A native of the Swiss Alps and the Pyrenees. Syn., *Cheir-an'thus alpi'nus*.

E. Perowskia'num, 18 ins. high, is distinctly the finest of this class. The flowers open and continue blooming for many months, are of the brightest orange colour, and smell sweetly. Pick off the long seed-pods as they form. A native of Afghanistan, 1838.

Sow the seed outdoors in June for spring flowering, and afterwards treat the seedlings as for Wallflowers. Or sow in March and April for summer and autumn flowering.

ERYTHRÆA—*Centaury* (from Gr. *eruthraios*, red). Nat. Ord. *Gentianaceae*.

A dwarf plant worth growing in the rock garden, of biennial duration.

ERYTHRÆA—continued.

E. aggregata. 4 ins. high. Its pink flowers blossom in July and August. A native of S. Europe, 1824.

Sow the seeds $\frac{1}{8}$ in. deep in July or August, and plant out in the following March or April in sandy loam with an admixture of peat. A sunny but moist rockery is the best place for it.

ESCHSCHOLTZIA, *Californian Poppy* (named after Dr J. F. von Eschscholtz, a German naturalist). Nat. Ord. *Papaveraceæ*.

An extremely brilliant, free-blooming family of Californian poppy-like plants, having orange, crimson, rose, or yellow flowers. They are general favourites, though apt to overrun a border unless checked, as they sow themselves very readily. If grouped together they are very gay, especially the orange varieties.

E. cæspitosa. Height 6 ins. Sulphur yellow. Neat for edgings or rockery. Syn., *E. tenuifolia*.

E. californica. Pale yellow flowers. Introduced, 1790. Syn., *Chryseis crocea*.

E. californica caniculata rosea. Rosy white, striped with pale yellow.

E. californica compacta. Bright yellow flowers. Syn., *Chryseis compacta*.

E. californica crocea. Orange flowers.

E. californica crocea alba. Pure white flowers.



ESCHSCHOLTZIA CALIFORNICA.

ESCHSCHOL'TZIA—*continued*.

E. californica crocea fl. pl. Orange, double flowers. New, 1879.

E. californica crocea, Carmine King. Carmine-crimson flowers, erect and compact. New, 1906.

E. californica crocea, Rose Cardinal. Rosy shade.

E. Douglas'ii. Syn., *E. californica*.

E. erecta compacta, Dainty Queen. Shell-pink. Erect and compact, 1907.

E. erecta compacta, Rose Carmine. Upright and compact.

E. erecta compacta, Mandarin. Erect habit, deep orange. Very fine. New, 1897.

E. erecta compacta, The Mikado. Orange-crimson. A cross between *Mandarin* and *Carmine King*. New, 1908. Probably the best.

E. erecta maritima. Light yellow, deep orange spots, greyish foliage.

E. tenuifolia. See *E. caespitosa*.

Sow seeds $\frac{1}{16}$ in. deep in August or September where they are to flower, and they will come on earlier than if sown in March, and bloom in June and throughout the summer to October. They are not very particular about soil, but like a sunny position.

EUCHARIDIUM (from Gr. *eucharis*, agreeable). Nat. Ord. *Onagraceæ*.

EUCHARIDIUM—*continued*.

Lovely little hardy annuals, closely allied to *Clarkia*, native of California, and flowering a few weeks after sowing.

There are only three species, with a few garden varieties, none of which exceed 1 ft. in height. Plant in masses in the mixed border.

E. Brew'eri. Height 8 ins. A tufted little plant with deep reddish-purple flowers with white centres. The best of this group.

E. concin'num. Height 9 ins. Has deeply cut bright rose-coloured flowers resembling a prostrate plant of *Clarkia*. 1836.

E. grandiflor'um. Height 1 ft. Rose - purple flowers with white streaks. Not quite as hardy or rich in colour as the first one.

E. grandiflor'um al'bum. A white variety of the above.

E. grandiflor'um rose'um. A pink variety.

Sow seeds in the border in August or September $\frac{1}{16}$ in. deep for early flowering the following year, or March and April for midsummer, or June for autumn flowering. Thin out to 2 or 3 ins. apart as soon as large enough to handle. Soil ordinary. Position sunny. The autumn sown plants are the more robust.

EUCNI'DE *bartonioi'des*. See MENTZELIA *bartonioides*.

EU'TOCA VIS'CIDA. See PHACELIA *viscida*.

EU'XOLUS *olerac'eus*. See AMARANTHUS *oleraceus*.

EVENING PRIMROSE. *See* CENOTHERA *biennis*.

EVERLASTING FLOWERS. The annual plants known as "Everlastings" include the following families, viz., *Acroclin'ium*, *Ammo'bium*, *Gnapha'lium*, *Helichry'sum*, *Helip'terum*, *Lo'nas*, *Rhodan'the*, *Wait'zia* and *Xeran'themum*. Although *Helichrysum* is generally considered the true Everlasting or Immortelle of the French, the peculiar quality with which it is endowed is common to them all, so that they retain their form, colour, and brightness long after being gathered. The fashion for drying them for winter decoration is a thing of the past in this country, though on the Continent they are still used in cemeteries. The time to gather them for preservation is all-important, as if cut when fully expanded they drop in the drying. Pluck the flowers just before they are in full bloom, and hang in a bunch from a nail on the wall, head downwards, in some cool dry shed. Select if possible a sunny day when free of moisture for the operation, and should by any chance the heads fall off, they can be wired in the usual florist's fashion. The *Amaran'thus* family might also be mentioned, though quite distinct from the others named. In Portugal they are largely used for decorating churches, and last a considerable length of time.

FALSE DAISY. *See* BELLUM.

FEATHER COCKSCOMB. *See* CELOSIA *plumosa*.

FENNEL-FLOWER. *See* NIGELLA *damascena*.

FEN'ZLIA *diantheflor'a*. See GILIA *dianthoides*.

FEVER-FEW. See PYRETHRUM *parthenium*.

FIG-LEAVED HOLLYHOCK. See ALTHÆA *ficifolia*.

FIG MARIGOLD. See MESEMBRIANTHEMUM.

FINGER-FLOWERS. See DIGITALIS.

FISHBONE THISTLE. See CHAMCEPEUCE *casabonæ*.

FLAX. See LINUM.

FLORA'S PAINT BRUSH. See CACALIA.

FLOS ADO'NIS. See ADONIS.

FLOS-FLOWER. See AGERATUM.

FLOWER-OF-AN-HOUR. See HIBISCUS *trionum*.

FORGET-ME-NOT. See MYOSOTIS.

FOUNTAIN PLANT. See AMARANTHUS *salicifolius*.

FOUR O'CLOCK. See MIRABILIS.

FOXGLOVE. See DIGITALIS.

FRENCH HONEYSUCKLE. See HEDYSARUM.

FRENCH MARIGOLD. See TAGETES *patula*.

FRENCH POPPY. See PAPAVER *somniferum*.

FRINGE-FLOWER. See SCHIZANTHUS.

FRINGED CANARY FLOWER. See TROPÆOLUM.

GAILLAR'DIA, or BLANKET FLOWER (named after M. Gaillard, a French botanist). Nat. Ord. *Compositæ*.

These flowers are great acquisitions in the

GAILLARDIA—*continued*.

garden, whether the annual or perennial varieties are employed. A great family likeness runs through them all, though the modern hybrid perennials may be reckoned by the dozen, while the annuals are restricted to a few species. They bloom from June to November, and though they may be continuously cut for vases, for which purpose they are unsurpassed, new blossoms come on in quick succession. The flowers as a rule are large and borne on long stalks, and last a long time in water. The colours are generally some shade of yellow or cinnabar-red, or both together, the largest flowers measuring some 4 to 5 ins. across, generally single, but sometimes double.

G. ambly'odon. This is a true annual Gaillardia, about 12 to 18 ins. high, with rather small flowers of a blood-red colour. Texas, 1873.

G. bi'color. See *G. pulchella*.

G. corona'ta is a true annual having reddish-brown flowers.

G. pulchel'la. 1½ ft. high. This plant has blooms of purple-crimson, tipped with yellow. 2 to 3 ins. across or more. From N. America, 1834. Syn., *G. bicolor*.

G. pulchel'la pic'ta. About 12 ins. or a little more in height. The flowers are small, red, edged with yellow. Syn., *G. bicolor*, var. *Drummondii*.

GAILLAR'DIA—*continued*.

G. pulchel'la pic'ta Lorenzia'na is a modern form of the above, about 18 ins. high, having double flowerheads of tufted funnel-shaped florets of colours ranging from deep red, purple or claret, to bright or pale yellow.

Propagate by seeds sown $\frac{1}{16}$ in. deep in shallow boxes or pans of sandy soil, in temp. 68°, on a hot-bed about the end of February. Sow thinly and prick off into other boxes. As they grow, harden off and plant out of doors in June. To treat them as biennials, sow in June out of doors in the reserve garden, thin out if too close, and transplant in September where they are to flower the following summer. During the winter, some little protection may be necessary in cold situations, such as covering with branches of gorse. The soil should be deeply dug and manured, but dry and sunny. A damp situation is totally unsuited to them. The best effect is obtained by massing in round clumps 1 ft. apart. A little liquid manure while in flower does them good. Beware of slugs as they are partial to them, and if any are seen or suspected, surround the plants with a ridge of soot.

GR'LIA (called after P. S. Gilio, a Spanish botanist).
Nat. Ord. *Polemoniaceæ*. See also LEPTOSIPHON.

A pretty family of hardy annuals and one biennial, that by sowing at different periods may be had in bloom in spring, summer, and autumn, and should be grown in bold groups in the mixed

GILIA—continued.

border. The flowers are small but produced in great number, and should be grown by those who pursue bee-keeping, as the insects are very partial to them.

G. achilleæfolia major. Height $1\frac{1}{2}$ ft. Has blue flowers. A native of California, 1833. There is a white variety called *alba*. Syn., *G. multicaulis*.

G. androsa'cea. See LEPTOSIPHON *androsaceus*.

G. capita'ta. Height 2 ft. Lavender blue. Columbia, 1826.

G. coronopifo'lia. Height $2\frac{1}{2}$ ft. A strikingly handsome biennial plant, with large spikes of brilliant scarlet flowers and light foliage. Tender out of doors, and best suited for a greenhouse. June. Carolina, 1726.

G. densiflor'a. See LEPTOSIPHON *densiflorus*.

G. dianthoï'des. Height 3 or 4 ins. Lilac colour. Useful as a groundwork for taller plants. California, 1833. Syns., *Dianthoï'des dianthi-flor'a* and *Fenz'lia diantheflor'a*.

G. inconspic'ua. See IPOMOPSIS *inconspicua*.

G. laciniat'a. Height 6 ins. Purple flowers. Chili, 1831.

G. liniflor'a. Height 9 ins. White. California, 1833.

G. lu'tea. See LEPTOSIPHON *luteus*.

G. micran'tha. See LEPTOSIPHON *roseus*.

GI'LIA—*continued*.

G. min'ima cœru'lea. Height 6 ins. Blue flowers, useful for carpet work for taller plants and as an edging.

G. multicaul'is. See *G. achilleæfolia*.

G. niva'lis. 1 ft. high. Snowy white, as its name suggests, with a crimson inner ring and yellow centre. A pretty little plant for edging and rockwork.

G. pulchel'la. See *IPOMOPSIS elegans*.

G. ro'sea splen'dens has very showy pink flowers, about 12 ins. high.

G. tri'color. Height 1 ft. White edged with purple, dark violet inner ring, and yellow centre. California, 1833.

Sow seeds $\frac{1}{16}$ in. deep in September out of doors, giving slight protection during winter for early flowering the following year. Sow again in March or April for later flowering, thinning out to 3 ins. apart. Aspect sunny. The biennial *G. coronopifolia* should be sown in pots in June and kept moist till the seed has germinated, when the seedlings should be potted up singly in forty-eight pots, and not given much water till the flowers show.

GILLYFLOWER, GILLIFLOWER, or GILLOFLOWER. A commonplace name for several plants. It was formerly spelt *gyллоfer* and *gilofre*, from the French *giroflée*, Italian *garofalo*, modern Latin *gariofilium*, corrupted from the Latin *Caryophyllum*, the Clove-

GILLYFLOWER—*continued*.

tree. Hence the name Gillyflower is given to the spicy Clove Carnation (*Dianthus caryophyllus*). The name is also given to the *Stock-gillyflower*, more often called the Stock (*Matthiola*). The *Wallflower* (*Cheiranthus cheiri*) also is sometimes termed the *Wall Gillyflower*. Other flowers besides have the same appellation, such as the *Hesperis*, *Queen's* and *feathered Gillyflower*.

GLAU'CIUM—*The Horned Poppy* (from Gr. *glaukos*, signifying greyish-green, in reference to the colour of the foliage). Nat. Ord. *Papaveraceæ*.

This is a family not very often represented in the garden, but nevertheless it is quite worthy of that distinction. It belongs to an order of Poppies and is closely allied to *Eschscholtzia*. The species are all biennial in habit, but will flower the first summer like annuals if sown in spring, though the plants will not be so large if treated in that way. No protection is required during the winter, but the second season plants are the better for being tied up, as they get very sprawling and untidy looking. The flowers are pretty, but the foliage, which is covered with a silvery bloom, is as decorative, and quite noticeable at a little distance. The edge of the mixed border or the "wilderness," as the wild part of a garden is sometimes termed, is the best place for them. A large group with a dark background should be very effective. About 18 ins. to 2 ft. high.

GLAU'CIUM—*continued*.

G. luteum, *The Yellow-horned or Seaside Poppy*.

This is a native of Britain, and not uncommon on some parts of the coast. The flowers are pale yellow. This species is not of much consequence for cultivation. Syn., *G. flavum*.

G. luteum (flavum) tri'color. This is the best and showiest of all the species. The flowers are large, about 2 or 3 ins. across, of a bright orange-scarlet with yellow and black markings in the centre. Asia Minor.

G. corniculatum phœni'ceum, *Scarlet-horned Poppy*. Showy orange-red flowers blooming in June and July. It has been found growing wild in some parts of England, but it is a doubtful native. S. Europe.

G. Fish'eri. Similar to the last, but more brilliant even in colour; its white woolly foliage is very striking.

G. flavum is the same as *G. luteum*.

G. fulvum. Height 2 ft. This has orange-coloured flowers. From S. Europe, 1802.

Sow seeds $\frac{1}{16}$ in. deep out of doors in June in sunny place, and transplant to flowering quarters in August to flower the following summer. If sown in March, however, they will flower the same year.

GLORY PEA. *See* CLIANTHUS.

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HORNED POPPY.

1. *Glaucium luteum*.

2. *Glaucium corniculatum phoeniceum*.

[To face p. 110.]



GODETIA.

[To face p. 110.

GNAPHA'LIIUM—*Cudwort* (from Gr. *Gnaphalion*, a downy plant used in stuffing cushions). Nat. Ord. *Compositæ*.

G. fœ'tidum. An "everlasting" hardy annual, 18 ins. high, similar to *Ammobium*, except in colour, which is yellow.

Sow in March or April in the open ground, $\frac{1}{8}$ in. deep. Gather the flowers just before they are quite in full bloom, and hang the bunch upside down in a cool, dry place. When quite dry they will last a very long time.

GODE'TIA (named after M. Godet, a Swiss botanist). Nat. Ord. *Onagaceæ*.

The Godetias are delightful and well deserve their popularity. The flowers are produced in such abundance and are always so bright and cheerful looking that it is not surprising they are to be met with in most gardens. But, as is often the fate of annual plants, they are not always given a fair chance. They are frequently half starved, while they should be given the opposite treatment, a dry and manured soil and plenty of air and sunshine. They are more easily transplanted as seedlings than most annuals, which is a great "feather in their cap," while the blooms last well in water when cut for the table. Always plant them in groups and masses, or in "ribbons" along the edge of a bed for fine effect. Native of Western America.

G. amœ'na al'ba. Height 1 ft. White flowers.

GODE'TIA—continued.

Crimson Glow. Height 1 ft. Compact, massive, blooming. 1907.

Crimson King. Height 1 ft. Brilliant crimson; one of the best.

Double Rose. Something like a double Clarkia. Quite one of the best for cutting, having long stems.

Duchess of Albany. Height 1 ft. Pure white. Most effective.

Duchess of Albany na'na. Dwarf, pure white and a good bedder.

Gloriosa. Dwarf and compact. The deepest crimson Godetia in cultivation.

Lady Albemarle. Height 1 ft. Bright crimson with edges of lilac. There is a dwarf compact variety of this.

Lady Satin Rose. Height 1 ft. Deep pink.

Lindleyia'na. Height 2 ft. Rose-purple with crimson spots.

Na'na lacinia'tus. Crimson, fringed at the edges. Quite dwarf.

Princess of Wales. Height 1 ft. Ruby crimson, pencilled with grey.

Sunset. Dwarf and compact; a novelty, and one of the finest for bedding; rosy carmine. 1904.

G. rubicun'da splen'dens. This is a double Godetia about $1\frac{1}{2}$ ft. high or more. The large flowers are crimson, with a large bright purple blotch. Rather straggling in form.

GODE'TIA—*continued*.

G. Schu'mini fl. pl. This is quite a new Godetia, with double bright rose-coloured flowers, 2 ft. high.

G. Whit'neyi. Height $1\frac{1}{2}$ ft. Rose, with crimson spots.

G. Whit'neyi ful'gida is a beautiful Godetia of dwarf compact habit, and brilliant flowers of rich scarlet crimson with white eye; quite one of the best.

Sow seeds $\frac{1}{16}$ in. deep in September where they are to flower in the succeeding year, or for an early display in boxes in slight heat, about 60° , in February, pricked off and planted out after hardening off in cold frame in May, 6 ins. apart; or sow out of doors in March or April, and when up thin out to 6 ins. between plants for later blooming. Ordinary good soil will grow them well in a sunny position, and in dry weather mulch with leaf-mould, charred rubbish, or old potting soil passed through a sieve.

GOLDEN FEATHER. *See* PYRETHRUM *parthenium*.

GOOSEFOOT. *See* CHENOPODIUM.

GOWAN. *See* CHRYSANTHEMUM *segetum*.

GRAMMAN'THES (from Gr. *gramma*, writing, and *anthos*, a flower, on account of the V-shaped marks on the base of each petal). Nat. Ord. *Crassulaceæ*.

G. gentianoï'des is a very dwarf half-hardy annual from S. Africa, 1788, not more than 3 ins.

GRAMMAN'THES—*continued*.

G. gentianoï'des—*continued*.

high, but a splendid rock plant. It flowers in June to August, and forms tufts of fleshy leaves with a mass of star-shaped blossoms, each one nearly 1 in. across, yellow at first, but becoming deep red when full blown. It thrives where the soil is warm and dry, with an admixture of lime-rubbish. Syns., *G. dichoto'ma*, and *G. retroflex'a*.

Sow the seeds on the surface or in boxes or pans in temp. 65° in February or March, planting the seedlings outdoors in May.

GRAMMATOCAR'PUS *volu'bilis*. See SCYPHANTHUS *elegans*.

GROUNDSEL. See SENECIO.

GROVE-LOVE. See NEMOPHILA.

GYPSO'PHILA, *Chalk Plant*, *Cloud Plant*, *Baby's Breath* (from Gr. *gypsos*, chalk, and *phileo*, to love, having regard to its partiality to a chalky soil). Nat. Ord. *Caryophyllaceæ*.

G. elegans. This is a charming plant, not on account of any brilliant colouring—on the contrary, it is sombre. Its value lies in the elegant and foaming or cloud-like appearance of its thousand small white flowers which appear in July. Mixed with other flowering plants for colour the effect is beautifully soft. Its height is about 18 ins., which is a useful

GYPSO'PHILA—*continued*.

G. elegans—*continued*.

length for cutting, consequently it is much prized for bouquets and table decorations, for which it is principally grown. Crimea, 1828.

G. elegans ro'sea is a pinkish variety of the above.

G. mura'lis is a little dwarf plant only 6 ins. high, having small pink flowers. It is not of much consequence, and only suitable for rock-work and old stone walls.

The seeds being small scarcely want covering with soil. Sow them in April, thinning out to 6 ins. apart. A better result is obtained by adding a little chalk or old mortar rubbish to the soil where there is an absence of it. The taller species is apt to be dashed down and spoilt by heavy rains, unless a few small twiggy supports are put amongst it.

HEARTSEASE. *See* VIOLA.

HEBENSTREI'TIA (named after Professor J. E. Hebenstreit).
Nat. Ord. *Selaginaceæ*.

H. como'sa serratifolia. A recent introduction (1902) from S. Africa, 18 ins. in height. The long erect branching spikes are covered with numbers of curious white flowers, each with small blood-red spots on it. It is half-hardy, but may be sown in the open at the end of April.

HEDYSA'RUM. Nat. Ord. *Leguminosæ*.

H. corona'rium, *French Honeysuckle*. This is not a climber, as one would suppose, but a showy biennial 2 to 4 ft. high, bearing spikes of red flowers in June to August. It is rather a weedy plant and sows itself to an irritating degree. There is a white flower also. Italy.

Sow in spring or summer $\frac{1}{8}$ in. deep for the following year.

HELIAN'THUS—*Sunflower* (from Gr. *helios*, the sun, and *anthos*, a flower). Nat. Ord. *Compositæ*.

These well-known plants, all having yellow flowers, are to be found in most gardens in one form or another, even the cottage garden, and with a dark background, such as a yew hedge or woodland walk, they look very striking. But they can be very easily misused and overdone, and a row of the common tall Sunflower is anything but original or artistic. It would be much wiser to make a bold group instead of spreading them about all over the place as one so often sees. Neither is the giant-flowered kind the prettiest, with its huge dark centre and fringe of comparatively small petals. This is sometimes grown as a crop for economical purposes in drills 18 ins. apart and $2\frac{1}{2}$ ft. between the plants, returning about 50 bushels of seed per acre. This is crushed into oil for oilcake, and is also, uncrushed, a valuable food for pheasants and poultry. The leaves and haulm have also their use as fodder and for extracting potash. All the

HELIANTHUS—*continued*.

Sunflowers are quite hardy and are no trouble to grow, and for newly-made gardens are useful on account of their very rapid growth. They are not particular as to soil, though they do best, like most plants, when it is well manured.

H. annuus, *The Common Yellow Sunflower*, that may be grown 8 to 10 ft. or even 12 ft. high. This huge annual must be sparingly used, either in a group in the shrubbery, by the margin of a lake or pond, or in the woodland. It flowers in July to September, and is a native of S. America, whence it came as far back as 1596. Syns., *H. macrocarpus*, *H. lenticularis*, and *H. ovatus*. The varieties are :—

H. annuus californicus. Height 6 ft. Single, dark yellow flower.

H. annuus californicus fl. pl. Double.

H. annuus globosus fistulosus. Height 6 ft. Very double, showing no disc.

H. annuus grandiflorus Excelsior. Height 5 ft. New; petals long and curled.

H. annuus grandiflorus fl. pl. Height 4 ft. New; double.

H. annuus sulphureus. Pale yellow. Single. Height 5 ft.

H. argophyllus. Height 5 ft. From Texas. The whole plant is covered with white soft wool, otherwise it resembles *H. annuus*, with very broad ray florets.

HELIANTHUS—*continued*.

H. cucumerifol'ius. A miniature Sunflower with many garden varieties about 3 ft. high, with purple mottling on the stems and much branched. Yellow with dark centre, 3 ins. across. From Texas.

H. Damman'ni. A hybrid between *H. annuus* and *H. argophyllus*. There is a variety of this, *H. d. sulphureus*, paler in colour.

H. ex'ilis. 2 ft. high. A slender species with yellow flowers, 2 ins. across and narrow leaves. N. California.

H. lenticula'ris. Same as *H. annuus*.

H. macrocar'pus. Same as *H. annuus*.

H. ova'tus. Same as *H. annuus*.

H. petiola'ris. 3 ft. high. Yellow flowers 4 ins. across, the leaves covered with hard hairs. Rather a rare plant. A variety called *H. p. canes'cens* is covered with white hairs. From Arkansas, 1826.

H. scaber'rimus, deep yellow flowers, branching stems, and broad oval-toothed leaves. From California.

H. Stel'la. A garden variety, very like *H. cucumerifolius*, 8 ft. high with large flowers. There is a variety of this with pale yellow flowers, called *Primrose Stella* in the catalogues.

Seed may be sown 2 ins. deep for the *H. annuus*,

HELIAN'THUS—*continued*.

and less for the others in April where they are to grow, thinning out $2\frac{1}{2}$ ft. apart for the more vigorous and larger sorts, and less for others.

HELICHRYSUM—*Everlasting Flower, Immortelle Flower, and Gold-Flower* (from Gr. *helios*, the sun, and *chrysos*, golden). Nat. Ord. *Compositæ*.

This is a very large family, but only a few, with their varieties, are cultivated. It is one of the so-called "Everlastings," the flowers resisting the usual withering process. They are double and globular and crisp to the touch. The colour is very rich, and keeps a long time after being cut and dried. The flowers appear in July and September, and are the most popular of all the "Everlastings." See EVER-LASTING FLOWERS.

H. brachyrhynchum grows about $1\frac{1}{2}$ ft., with yellow flowers.

H. bracteatum aureum. Height 3 ft.; with golden-yellow flowers. From Australia, 1779 or 1799.

H. bracteatum niveum. Height 4 ft. White and yellow flowers. From the Swan River, W. Australia, 1837. This is perennial, but should be treated as an annual.

H. bracteatum macranthum. Pale pink. From the Swan River, W. Australia, 1837. This is perennial, but often perishes during winter, and should therefore be sown annually.

H. monstrosum album is a white variety. Height $2\frac{1}{2}$ ft.

HELICHRYSUM—*continued*.

H. monstro'sum atrococcin'eum fl. pl. Double scarlet. Height $2\frac{1}{2}$ ft.

H. monstro'sum lu'teum fl. pl. has double yellow flowers. Height $2\frac{1}{2}$ ft.

H. monstro'sum ro'seum fl. pl., with rose-coloured flowers. Height $2\frac{1}{2}$ ft.

Fireball has large double bright crimson flowers. Height $1\frac{1}{2}$ ft.

Golden King, or *Orange Globe* of the catalogues, is a golden-yellow garden variety with an orange centre.

Salmon Pink is a new colour. The flowers are a pretty salmon-pink colour, distinct and striking.

Silver Queen, or *Silver Globe*, has large snow-white flowers with an orange centre.

Sow the seeds thinly in pans or shallow boxes in light soil in March in temp. 65° , transplanting them in May in light rich soil in a sunny border 6 ins. apart. Or they may be sown out of doors in April under hand-glasses, otherwise if not hastened a little they sometimes only begin to bloom when the frosts commence, and they will not assume their brightest colours; the glasses will also keep the slugs away. Water a little in very dry weather.

HELIO'PHILA—*Cape Stock* (from Gr. *helios*, the sun, and *philos*, loving). Nat. Ord. *Cruciferae*.



EVERLASTING FLOWER (*Helianthus monstrosum*).



HELIPHILA ARABOIDES.

HELIO'PHILA—*continued*.

Pretty little annuals from S. Africa, but not of much value for making any display. They are also rather short-lived, but may be flowered from June to September by successive sowings. Suitable for the margin of the mixed border when massed together.

H. araboï'des. The blue racemes of Forget-me-not flowers grow about 1 ft. to 18 ins. high. The foliage is hairy and of a grey-green shade, the leaves forming like a miniature three-fingered glove. 1768. Syn., *H. pilo'sa inci'sa*.

H. pilo'sa. About 12 ins. high. Very similar to the above, but the blue flowers are said to be about a month later in appearing. 1768.

Sow the seeds $\frac{1}{16}$ in. deep in the open ground in April in a sunny spot and thin to 6 ins. apart. Make a sowing again in May and another in June to keep up a succession of flowers.

HELI'PTERUM — *Australian Everlasting, Immortelle-Flower* (from Gr. *helios*, the sun, and *pteron*, a feather). Nat. Ord. *Compositæ*.

H. Humboldtia'num. Australian half-hardy annuals, papery looking like the *Helichrysum*, and lasting a long time after it is cut and dried, though it loses its bright golden colour and turns a metallic green. It is a good pot plant, but when grown in this way requires a very rich compost, half sandy loam and half cow-manure, 9 ins. high. Syn., *H. Sandford'ii*.

HELI'PTERUM—*continued.*

H. splen'didum. A newly discovered W. Australian plant (1905). It is described as a glabrous herb, 9 to 12 ins. high; leaves glaucous, long and linear; flower-heads erect; bracts, outer small brown, inner white.

H. Mangle'si. See RHODANTHE *Manglesi*.

H. ro'seum. See ACROCLINIUM *roseum*.

Sow the seed thinly $\frac{1}{8}$ in. deep out of doors in March under a hand glass where they are to grow, as they resent having their roots disturbed, which they probably would have if sown in pots under a frame. The position must be sunny and only water very moderately.

HEN-AND-CHICKENS DAISY. See BELLIS *perennis proli-fera*.

HES'PERIS—*Rocket, Sweet Rocket, Dame's Rocket, Dame's Violet, Damask Violet* or *Queen's Gilliflower* (from Gr. *hesperos*, the evening star, having reference to its increased fragrance towards evening). Nat. Ord. *Cruciferae*.

Well-known, rather coarse, but sweet-smelling plants. *H. matronalis* is perennial, but is best treated as an annual, especially the double form, which for some reason or other withers away if left to itself and not transplanted. As annuals, however, they are quite hardy and also very free-flowering, and are an ornament to the mixed border or woodland walk.

HES'PERIS—*continued.*

H. matrona'lis, *Dame's Violet*, grows about 2 ft. high. Its racemes of purplish-pink flowers appear in June. Native of England (though rare) and Europe.

H. matrona'lis al'ba fl. pl. A good old-fashioned double white flower and very sweet scented, thriving in deep rich loam; but if it is to be kept as a perennial it must be shifted and given fresh soil, otherwise it dies down. It grows 3 ft. high and flowers in June to September. Europe, 1597.

H. albiflo'ra has single white flowers in June, and not as attractive as the former double kind. About 4 ft. high. Europe, 1759.

H. purpur'eo-pl'e'na. Height 3 ft. Double purple and not as pretty as the double white. Europe, 1597. There is a dwarf form called *Compactness*.

H. tristis, *The Night-scented Stock* or *Rocket*, is biennial. It grows about 1 ft. and has purple flowers in May to September. It is best suited for naturalising on old ruins and stone walls and such like places. Austria, 1629.

Sow the seed of *H. matronalis* and its varieties out of doors in April $\frac{1}{4}$ in. deep in a sunny position, transplanting the seedlings where they are to grow in June; the double kinds under a hand-light or frame in September or October, transplanting in March to their flowering quarters.

HES'PERIS—*continued*.

To grow *H. tristis* sow the seeds in chinks of old walls in April to July; or in groups in the border where they are to grow in June to September to flower the following year.

Those in the border should be mulched in May or June, the double varieties requiring a little liquid manure in summer.

HIBIS'CUS (from *L. hibiscum*, the mallow). Nat. Ord. *Malvaceæ*.

This is a very large family, but mostly shrubs and herbaceous perennials (one of which, *H. Manihot*, is treated in this climate as a half-hardy annual), while two are strictly hardy annuals. The latter are well worth growing and distinctly pleasing.

H. africa'nus ma'jor, or *Black-eyed Susan*, grows about 2 ft. high. It is an erect growing plant, having showy Mallow-like flowers $1\frac{1}{2}$ ins. across of pale primrose yellow with a dark centre of rich purple maroon. They, however, only expand to their full extent in bright sunny weather. It is best in a light sandy soil. The flowering season is June to the end of September. From Africa in 1826.

H. Man'ihot, or *Australian Manihoc*, always treated as a half-hardy annual, and then not often very successfully, being a difficult plant to deal with. It is a handsome plant reaching 3 or 4 ft. in height, with large blossoms about 3 ins. across

HIBIS'CUS—*continued*.

H. Man'ihot—*continued*.

of sulphur yellow and conspicuous dark maroon centre. It flowers about July to September, and was brought from the E. Indies in 1712.

H. Trio'num, *Flower-of-an-hour*, *Good-night at noon*, *Good-night at nine*, *Venice Mallow*, or *Bladder Ketmia*. A weed in many sub-tropical climates, but the flowers are pretty. The colour of the flower is sulphur yellow with a dark purple eye, but not so large as *H. Africanus*, and the plant grows about $1\frac{1}{2}$ ft. in height. Unfortunately the flowers last only a very short time, hence the name it has attained, though a variety has been produced, the flowers of which will remain open nearly all day in sunny weather. However, fresh blooms quickly succeed the faded ones. It should be planted in groups in the border to make an effect. It flowers in July to September, and is quite hardy. Introduced from Italy in 1596.

Sow the seed of the first and last $\frac{1}{8}$ in. deep in the open ground where the plants are to bloom, and thin out to 6 or 8 ins. apart. They like a sunny position. *H. Manihot* must be sown in February in well-drained pots on sandy peat under a hand-glass in temp. 75° , and planted out in May in good rich soil.

HOLLYHOCK. See ALTHÆA rosea.

HO'LOGYNE *glabrata*. See LASTHENIA *glabrata*.

HOLY THISTLE. See CARDUUS *benedictus*.

HONESTY. See LUNARIA *biennis*.

HONEYWORT. See CERINTHE.

HOP. See HUMULUS *japonica*.

HORN-OF-PLENTY. See DATURA *cornucopia*.

HORNED POPPY. See GLAUCIUM.

HU'MEA or *Amaranth Feathers* (called after Lady Hume).
Nat. Ord. *Compositæ*.

H. elegans is an Australian plant and one of the most handsome biennials in cultivation. It has been grown to the height of 8 ft., and for this reason may be used as a most stately centre in a bed, or in pots on a terrace, or else in a group at the back of a border. Its leaves have a peculiar fragrance which is very delightful. The feathery plumes or panicles are a reddish-brown or rose colour, produced in July to October. There are some varieties distinguished as:—

H. elegans al'ba, which is white, and

H. elegans purpure'a, having dark purplish-brown flowers.

Sow the seed in June or July on the surface of well-drained pans, sprinkling lightly over with very fine soil. Give a single watering and place in a hotbed at about 55°, and keep shaded. As soon as the seedlings appear, place the pans close to the

HU'MEA—*continued*.

glass and gradually harden off in a cooler atmosphere. Pot singly in small pots, mixing some leaf-mould with the soil and keep growing in a cold frame and shaded. By end of August they should be strong enough to stand out and soon after repotted into larger pots. Plunge these into ashes, where they should remain well watered till the winter, when they must be kept in a cool house. During winter they must be repotted again in 12-in. pots, and will soon make fine plants to bed out in June with some rotten manure under and round them. They will probably require staking.

HU'MULUS—*Hop* (from L. *humus*, the ground; because, unless supported it spreads over the ground). Nat. Ord. *Urticaceæ*.

H. japon'icus. This, the *Japanese Hop*, must not be confused with the common hop which is a perennial plant, and will not be treated of here. But the *Japanese Hop* is a vigorous twining annual growing 10 or 18 ft. in a season, and most useful for covering verandah posts, trellis work, pergolas, and such like things with its light green foliage. It is easily grown and frequently sows itself after it is once planted.

H. japon'icus variegatus is a variegated form of the above, the foliage being marked with creamy white.

HU'MULUS—*continued*.

Propagate by sowing the seeds $\frac{1}{8}$ in. deep in pots in greenhouse in April, or out of doors in May. Water freely in dry weather.

IBE'RI8—*Candytuft* (from *Iberia*, an ancient name for Spain, where the species abounds). Nat. Ord. *Cruciferæ*.

The annuals of this group, for there are many perennials, are very hardy and effective, and quite an acquisition to the garden. They are all most profuse bloomers, and make an uncommonly pretty bed if massed together or as an edge g. *I. umbellata* is the great favourite.

I. coronaria, the *Rocket Candytuft*, grows 12 to 16 ins. high, with pure white spikes of bunched bloom. An improved garden variety of this is called *Giant-flowered White*, *White Rocket*, or *Giant Snowflake*, in the catalogues. The *Hyacinth-flowered* is probably the finest type of all. There is a dwarf spreading kind called *Little Prince* or *pumila*. Height 4 ins. White.

I. umbellata grows about 1 ft., the flowers being purple. There are several varieties of this, viz. :—

I. umbellata atropurpurea. Dark crimson. 1 ft. high.

I. umbellata, *Rose Cardinal*. Bright rose. 1 ft. high.



ROCKET CANDYTUFT (*Iberis coronaria*).

IBE'RIS—*continued*.

I. umbella'ta na'na purpur'ea. Dwarf purple.
9 ins. high.

I. umbella'ta na'na ros'ea. Dwarf rose. 9 ins.
high.

I. umbella'ta na'na al'ba. Dwarf white. 9 ins.
high.

Propagate the seeds by sowing them in August or September in open ground $\frac{1}{8}$ in. deep, to flower in May to July of the following year; or in March to May, to flower later in the summer. Those sown in September are usually the finest. Give them a rich soil and thin out to 6 ins. apart.

ICE PLANT. *See* MESEMBRYANTHEMUM *Crystallinum*.

ICELAND POPPY. *See* PAPAVER *nudicaule*.

IMMORTELLS. *See* HELICHRYSUM, HELIPTERUM, and XERANTHEMUM.

IMPA'TIENS—*Balsam* or *Touch-me-not* (from *L. impatiens*, impatient, referring to the elasticity of the valves of the seed-pods which discharge their seeds when ripe or when touched). Nat. Ord. *Geraniaceæ*.

The common Balsam, *I. glandulifera*, and other species like it, are handsome annuals but seed too freely to be welcome, soon overrunning a border or shrubbery if care is not taken. Fortunately they are easily pulled up by the roots, but a group may be left here and there during this operation, as it is certainly an ornament in moderation. The

IMPA'TIENS—*continued*.

Garden Balsam, however, is quite a different plant and a most desirable “bedder.”

I. coccin'ea. See *I. balsamina*.

I. crista'ta. Height 2 ft. Yellow flowers.

I. glanduli'fera. The common Balsam, 4 or 5 ft. high. Numerous flowers, varying from white to rose.

I. longicor'nu. Similar in habit, but yellow and brown underneath and rose above. India, 1830.

I. Roy'lei is not so tall, and has deep rose flowers.

I. balsami'na, Garden Balsam, also called in the United States *Ladies Slipper*.

This is a beautiful flower, often seen in the greenhouse, and effective in summer and autumn if planted out in beds in the open. It must be treated as a half-hardy annual and placed in a warm sunny position in rich soil. The rosette-like flowers of many colours and shades grow on the main stem on very short stalks, hence one garden strain is called *camellia-flowered*. The cultivation is a very simple process. The type plant has scarlet flowers, grows 2 ft., and was introduced from tropical Asia. Syn., *Impatiens coccinea*. The following are garden strains:—

Double Camellia-flowered Balsam. Large and very double; blooms of numerous colours, from white to dark crimson. It varies in height from 18 to 9 ins.

IMPA'TIENS—*continued.*

Large-flowered Miniature or Dwarf Balsam.

Height 9 ins.; of many colours. These flowers are excellent for bedding as well as pots in the conservatory.

Rose-flowered Balsam. This is double and rose-like; in some ten varieties of colour.

To propagate *I. balsamina* sow the seeds $\frac{1}{8}$ in. in pots of sandy soil in temp. 70° during March or April. Pot off into larger pots as they increase in size, using a compost of equal parts of loam, leaf-mould, and sand. Keep near the glass, unshaded, so as not to get them drawn. Still continue repotting as they grow larger, and apply liquid manure when they show flower. Plant out in June in a sunny position and water freely.

The hardy-annual sorts are merely sown where they are to grow in April.

INDIAN CORN. *See* ZEA.

INDIAN CRESS. *See* TROPÆOLUM *majus*.

INDIAN PINK. *See* DIANTHUS *chinensis*.

INDIAN SHOT. *See* CANNA.

IONOPSI'DIUM—*Violet Cress, Carpet Plant* (from Gr. *ion*, meaning violet, *opsis*, like, and *idion*, diminutive). Nat. Ord. *Cruciferae*.

I. acaul'e is a very dwarf plant, only 3 ins. high.

It would hardly be thought that a plant so diminutive could possibly be any use in a garden. Such, however, is not the case. Its

IONOPSI'DIUM—*continued*.

I. acau'le—*continued*.

flowers, of course, are useless for cutting, but they are borne in such profusion and so soon after sowing too (about two months) that it is quite an acquisition for filling up spots here and there that have been forgotten and left bare. On the rockery, for instance, or near the margin of a border, there are always little places that can be found for it. It will even grow in a hard gravel path, so little does it care where it rears its tiny lilac-blue flowers, so bright and simple. Its life is short, but the self-sown seeds quickly germinate and a second crop quickly follows. A native of Portugal, 1845. Syn., *Cochlea'ria acau'lis*.

I. acau'le al'bum is a form of the above with white flowers, but probably more uncommon.

Sow the seeds where they are to grow in April and May for blooming in June and July, or in September for early spring flowering. Only just cover them with fine soil and thin out to 1 in. apart. Water frequently.

IPOMÆA, also written IPOMEA—*Morning Glory* or *Star Glory* (from Gr. *ips*, a worm, and *homoios*, like). Nat. Ord. *Convolvulaceæ*.

This is a very large family of the *Convolvulus* order, comparatively few being in cultivation. These are very slender and rapid climbers, often growing 6 or 10 ft. in a season, with beautiful, fragile, trumpet-shaped flowers blooming from

IPOMÆA—continued.

June to September, and are most useful for quickly covering posts, trellises, tree-stumps, verandahs, and the like. They are too ephemeral to cut, though *I. rubro cœrulea* is sometimes used for that purpose.

I. purpur'ea, a general favourite, may be taken as the type, of which there are several varieties. The flowers are purple and pink. Syns., *Convol'vulus purpur'eus*, *Convol'vulus maj'or*, and *Pharbi'tis his'pida*. From tropical America.

I. purpur'ea fl. pl. Double white flowers. Height 10 ft.

I. purpur'ea fl. pl. Burrid'geii is crimson.

I. purpur'ea fl. pl. Dick'soni is deep blue.

I. purpur'ea fl. pl. tri'color. Red, blue, and white.

I. heder'cea, the *Ivy-leaved Morning Glory*. Very like the above type, but has leaves like ivy and smaller flowers of deep blue with red stripes. N. America. Syns., *I. Nil*, *Convol'vulus Nil*, *Pharbi'tis barba'ta*, and *Pharbi'tis he'dera*, *Pharbi'tis puncta'ta*, *Pharbi'tis tri'loba*, and *Pharbi'tis diversifolia*.

I. heder'cea atroviola'cea. Dark violet and white.

I. heder'cea grandiflor'a has light blue flowers.

I. heder'cea Hu'beri or *Japon'ica*. A beautiful plant with exquisite flowers of deep blue, shading to white towards the centre. Rather tender for out of doors. Japan.

IPOMÆA—continued.

I. hederacea limbatata. Dark blue, bordered with white. N. Australia, 1868. Syn., *Pharbitis limbata*.

I. rubro cœrulea has sky-blue flowers and grows about 8 ft. high in a genial situation. This is one of the prettiest climbers where the conditions are suitable to its requirements. Mexico, 1823 or 1880.

I. versicolor is better known under its synonym of *Min'a lobata* (which see).

Sow the seeds of *I. purpurea* and varieties $\frac{1}{8}$ in. deep in pots in temp. 65° in March; harden off and plant out in June in a warm sunny place against a post or trellis. Water occasionally in hot, dry weather. The *ivy-leaved* forms are rather more hardy, and may be sown out of doors in April in light rich soil.

I. rubro cœrulea requires special care and must be raised in heat. Sow in February in 65° and pot up. Plant out in June. It is only under very favourable conditions that this plant will succeed, and then only in mild climates and a warm situation. When it does succeed it is about the best of the species mentioned. It is not a true annual, but must be treated as such in this country.

IPOMOP'SIS (from Gr. *ipos*, a trap, and *opsis*, sight). Nat. Ord. *Polemoniaceæ*.

Pretty Californian biennials having feathery foliage and graceful spikes covered with flowers

IPOMOP'SIS—*continued*.

opening in succession that grow to a height of $2\frac{1}{2}$ ft. or a little more. They are not often seen in gardens, but are worth a place on a warm border in a light dry soil.

I. ele'gans is the best known, the flowers, which bloom in July, being scarlet. N.-W. America, 1826. Syn., *Gi'lia pulchel'la*.

I. inconspi'cua. The flowers of this are blue and are a month later than the first mentioned. N. America, 1793. Syn., *Can'tua parviflor'a*.

I. super'ba is very similar to *I. elegans*, while there is a variety *I. s. rosea* that is dark pink.

Propagate by sowing the seeds $\frac{1}{8}$ in. deep in May to August in the open where they will flower the following summer, or transplant from the reserve garden in September. It is best to give a little protection during winter.

ITALIAN PIMPERNEL. See ANAGALLIS.

IVY-LEAVED MORNING GLORY. See IPOMÆA *hederacea*.

JACK-IN-PRISON. See NIGELLA.

JACOBÆA. See SENECIO.

JAPANESE HOP. See HUMULUS *japonicus*.

JAPAN PINK. See DIANTHUS *chinensis* (Heddewigii).

JASIO'NE—*Sheep's-bit Scabious* (a name used by Theophrastus for a plant of the Convolvulus kind). Nat. Ord. *Campanulaceæ*.

JASIO'NE—*continued*.

There is only one member of this family that is annual, and that is the native.

J. monta'na. A pretty bright purplish-blue tufted flower, about 1 ft. high, which comes out in June. Though native of the British Isles, it is by no means to be despised even in a garden, though it is best kept to the wild or woodland part.

Sow $\frac{1}{16}$ in. deep in April or September in a sunny position.

JOSEPH'S COAT. See *AMARANTHUS tricolor splendens*.

KAULFUSSIA *amelloi'des* (called after Dr G. F. Kaulfuss, a German botanist). Nat. Ord. *Compositæ*.

This is a free-flowering plant of dwarf growth, having purple-blue daisy-like flowers which rise about 9 ins. above the ground. It is a capital little plant for a small bed when massed together or as an edging. S. Africa, 1819. Syns., *Char'i'eis heterophyll'a* and *Amellus an'nuus*.

Sow $\frac{1}{8}$ in. deep in a hotbed in March, prick off and plant out in May; or sow outdoors in April and thin out to 8 ins. apart. These should bloom in June. It is fairly hardy.

KOCH'IA *tricho'phila*—The *Mock Cypress* or *Belvedere* and *Broom Cypress* (named after Prof. W. Koch). Nat. Ord. *Chenopodiaceæ*.

A remarkable, and till lately, little known plant. Although it is said to have been introduced as long



KAULFUSSIA AMELLOIDES.

KOCH'IA *tricho'phila*—continued.

ago as 1629 from Greece, it only came to be recognised by the public through its re-introduction by one of our leading nurserymen about 1901 as a plant of conspicuous merit for decorating the garden border. It is the foliage and not the flowers which attracts attention. These are insignificant, but the foliage is compact, light, and feathery, and in late summer assumes a brilliant crimson colour. It grows about 2 ft. high, and should be planted in groups for effect. Syns., *Chenopodium scopar'ium* and *Blitum Virga'tum*.

K. scopar'ia, a species very inferior to the former.

Sow the seed in March in pots, prick off in boxes or separate pots, and plant out in rich soil in a sunny aspect in May or early June.

KNOT-WEED. See POLYGONUM.

KO'NIGA *mari'tima*. See ALYSSUM.

LA'BLAB. See DOLICHOS *Lablab*.

LADIES'-SLIPPER. See IMPATIENS *balsamina*.

LADY-IN-THE-BOWER. See NIGELLA.

LARGE KAMPION. See CENOTHERA *biennis*.

LARKSPUR. See DELPHINIUM.

LASTHE'NIA — (Derivation unknown). Nat. Ord.
Compositæ.

L. califor'nica. A modest little annual plant not unlike a small *Inula*. It is somewhat straggling in growth, but may be made to

LASTHE'NIA—*continued*.*L. califor'nica*—*continued*.

look pretty if grown in a good clump in a small bed or on the margin of the mixed border. The small flowers, barely an inch across, are bright mustard-yellow, borne in quantity. It is quite hardy, and if sown in autumn will come into flower at the same time with Aubretia, the two making a good combination. About 8 ins. in height. There is a variety known as

L. glabra'ta. Very similar to the above, but slightly taller. Syn., *Hol'ogyne glabra'ta*.

Sow the seeds $\frac{1}{8}$ in. deep in September or October to flower the following spring; or in March or April for June.

LATH'YRUS—*Sweet Pea* (from Gr. *lathuros*, a kind of pulse). Nat. Ord. *Leguminosæ*.

No words can overrate the value of the Sweet Pea, the most popular annual grown, equally valuable for large or small gardens, and deservedly a great favourite as a cut flower. About 5 ft. high, it is usual to plant it in clumps or as hedges, supported by twiggy stakes. The flower is described as follows:—The "Standard" is the large back petal which may be erect, waved, or slightly "Hooded." The front petals are the "Wings," while the lower part of the flower is called the "Keel."

The varieties of this plant are now so very numerous that it is not so necessary to give a

LATH'YRUS—*continued*.

complete list, if indeed such were possible, many of the so-called varieties being so similar that it is very difficult to distinguish the difference between them.

L. odora'tus. The common purple and pink variety, and believed to be a native of Sicily and Southern Italy, was introduced in 1700, while the old-fashioned pink and white variety is supposed to have originally come from Ceylon. Appended is a list of some of the best garden varieties:—

An asterisk indicates those that are NOT waived.

White.

Etta Dyke.

Nora Unwin.

*Dorothy Eckford.

Crimson and Scarlet.

The King.

*King Edward.

*Queen Alexandra.

Sunproof Crimson.

Rose and Carmine.

John Ingman.

Marjorie Willis.

*Prince of Wales.

Yellow and Buff.

Clara Curtis.

Isobel Malcolm.

*James Grieve.

Blue.

A. J. Cook.

*Lord Nelson.

Mrs Geo. Charles.

Blush.

Mrs Harcastle Sykes.

Cerise.

Chrissie Unwin.

*Coccinea.

Pink.

Countess Spencer.

*Prima Donna.

Cream Pink.

Constance Oliver.

Mrs H. Bell.

*Queen of Spain.

Orange Shades.

Earl Spencer.

Edrom Beauty.

Helen Lewis.

St George.

*Miss Wilmott.

Lavender.

Frank Dolby.

Mrs C. Foster.

LATH'YRUS—*continued.*

*Lady G. Hamilton.
Masterpiece.

Violet and Purple.

Rosie Adams.

*Duke of Westminster.

Majenta.

Menie Christie.

Mauve.

The Marquis.

*Mrs Walter Wright.

Maroon and Bronze.

*Black Knight.

*Hannah Dale.

*Tom Bolton.

Picotee Edged.

Elsie Herbert.

Mrs C. W. Breadmore.

Striped and Flaked.
(Red and Rose).

Aurora Spencer.

Yankee.

*Jessie Cuthbertson.

(Purple and Blue).

Prince Olaf.

Fancy.

Sybil Eckford.

Bicolor.

Mrs Andrew Ireland.

*Jeannie Gordon.

Marbled.

*Helen Pierce.

There is a dwarf or Cupid strain of Sweet Peas, the height of which is scarcely a foot, and therefore well adapted for massing in a bed, or as a pot or hanging basket plant, or as an edging. There are several colours.

Yet another class is known as The Bush Sweet Pea. This is intermediate between the tall kinds and the Cupid. The climbing habit is quite absent, and the plant forms a bush 18 ins. high and self-supporting, as the tendrils bind the stems together. The colours are various.

L. sativus azur'us, the *Chickling Vetch*, is an elegant little plant with bright blue flowers, that grows about 3 ft. high. It is, however, of small

LATH'YRUS—*continued*.*L. sati'vus azur'eus*—*continued*.

consequence in the garden. There is a white variety also. South Europe, 1640.

L. tingita'nus, or *Tangier Pea*, about 3 ft. high, has small dark reddish-purple flowers. 1680.

The culture of Sweet Peas must be properly undertaken, otherwise it is useless to try and grow really fine flowers. It is essential to well prepare the ground beforehand by digging deeply, incorporating at the same time some good stable or cow manure in a light soil, and a good dusting of bone meal as well, leaving it for a time quite rough. At the end of February or beginning of March on a dry day, when the soil is in good working order, dress the ground well with old soot and then fork it all over. If it is intended to sow in rows, make the drills 3 ins. deep and 4 ft. apart; or if in clumps, put the seeds in, in a circle, 8 to 12 ins. apart. Finally rake over and make firm by treading. Some gardeners like to make a trench for them 3 ins. deep, like celery is grown, to collect moisture. Make the ground firm and place strong sticks, hazel for choice, on either side of the drills or round the clumps well away from the seeds, and stick into the ground close to the seeds some little twigs to give the seedlings a lead to the stouter supports. The remains of a worn-out besom cut away from the handle is good material. Protect against birds pecking the seedlings when they come up by putting black

LATH'YRUS—*continued*.

cotton thread about them. Early in the summer give a mulching of manure. This is important, as it keeps the roots moist during the hot weather. A frequent application of liquid stable manure during the flowering season increases the size and quality of the blooms. Another good manure which makes a wholesome change is 1 lb. of guano to 20 gallons of water. Sulphate of potash, 1 oz. to the gallon of water, is also a good manure. Soot water also helps to brighten the colour of the flowers. Never give liquid manure, however, when the ground is dry.

Some people prefer to sow the seeds in pots. In that case the pots must be washed clean and well crocked, otherwise the young roots will stick to the sides and get torn when turned out. Fill the pots with fibry loam 3 parts, leaf mould 1 part, and old decayed manure 1 part, with a little road grit or coarse sand. The seeds can then be put in $\frac{1}{2}$ in. deep, 5 seeds round a 5-in. pot. Label them and water with clean water. The pots can then be put on a shelf in a cool greenhouse or a cold frame. When 3 ins. high put some besom sticks round the pots to help support them, and gradually inure them to the open air. Any time in April the seedling can be shaken out of the pots, separated with as little disturbance of the roots as possible, and dibbled into the ground prepared for them. Exhibitors put them 12 to 18 ins. apart.

The seed-pods should always be picked off as



MALOPE TRIMESTRIS.

[To face p. 142.

LATH'YRUS—*continued*.

they form, as the plants cannot undergo two duties successfully. A second sowing may be made in April or even as late as the beginning of June. An autumn sowing is sometimes made for early spring flowering, but it is not always easy to keep the plants alive during a cold winter. The season is a long one, and with attention it is quite easy to have an abundance of flowers till the middle of October.

LAVATE'RA (called after two Swiss naturalists of the name of Lavater). Nat. Ord. *Malvaceæ*.

This is a family of rather coarse-growing plants, a few of which only are fit for the garden, these being mentioned below; the second is a decided acquisition, very gay in a good rich soil, and splendid to cut from. The *Convolvulus*-like flowers are very similar to those of Malope and are produced in the axils of the leaves.

L. arbor'ea variega'ta, or *Tree Mallow*. This is a handsome biennial plant, the leaves marked with white. It makes a good effect in company with other fine foliaged plants, branching out into a broad, compact head, like a miniature tree, about 6 ft. in height. The flowers are red.

L. trimes'tris. This annual grows 3 ft. high in good rich soil. The flowers, which are very abundantly produced in July to September, are rose coloured, and there is a white variety

LAVATE'RA—*continued*.*L. trimes'tris*—*continued*.

called *L. t. alba*. It requires plenty of room. Improved forms are *rosea splendens*, and *alba splendens*.

L. cre'tica. See MALVA mauritiana.

The seeds of the biennial species should be sown in May or June to bed out the following year. *L. trimestris* should be sown $\frac{1}{8}$ in. deep where it is to grow in September or April, on richly prepared ground in a sunny position, allowing 2 ft. or more between each plant.

LA'YIA—*Tidy-tips Flower* (named after Thos. Lay, a naturalist). Nat. Ord. *Compositæ*.

The three cultivated species of this Californian family are profuse flowering dwarf plants that make a pretty edging. They are all quite hardy annuals and not as often seen as they deserve to be. They are in flower from June to September.

L. calliglos'sa grows only 1 ft. high, the yellow flowers smothering the little plant in their profuseness. It differs very little from *L. elegans*, except that the flowers have no white margin, nor is it quite so spreading. It is also known as *Oxyu'ra chrysanthemoi'des*.

L. chrysanthemoi'des. A synonym of the above.

L. el'e'gans. A charming little sprawling annual about 8 ins. high, the flowers $1\frac{1}{2}$ ins. across, of yellow shading into white on the outside and

LA'YIA—*continued*.

L. elegans—*continued*.

slightly fringed. The foliage has a greyish appearance given it by the numerous little hairs with which it is covered. It lasts well in water and remains in flower for five or six weeks.

L. elegans al'ba is a pure white variety of *L. elegans*.

L. glandulo'sa. This is white with a yellow centre.

Sow the seeds $\frac{1}{16}$ in. deep outdoors in a sunny position in autumn or April, and thin out to 4 ins. apart.

LEPTOSI'PHON (from Gr. *leptos*, delicate, fine, and *siphon*, a tube, in allusion to the flower). Nat. Ord. *Polemoniaceæ*.

A charming group of Californian annuals that should rightly come under the head of *Gilia*, though more often catalogued under the generic name of *Leptosiphon*. They are quite diminutive and only suitable for rockwork and edgings, but when the tufts are covered with their umbels of little flowers they are most gay and attractive. The foliage is delicate and thread-like.

L. androsa'ceus. 6 ins. high. The flowers, which are larger than many of the other kinds, are a lilac colour. Syn., *Gi'lia androsa'cea*.

L. androsa'ceus al'bus is a white variety of the above, with a yellow centre.

LEPTOSIPHON—*continued*.

L. densiflorus, about 9 ins. high. The flowers are a rosy-lilac and larger than the following. Syn., *Gilia densiflora*.

L. densiflorus albus is a white variety.

L. luteus, about 6 ins. high, is one of the best to grow. The flowers are yellow. Syn., *Gilia lutea*.

L. aureus is a deeper coloured variety of *luteus*.

L. roseus, about 5 or 6 ins. high. This little plant is probably the most attractive of any of the species, the flowers being bright carmine. Syn., *Gilia micrantha*.

L. hybridus is a name given in catalogues for hybrid varieties consisting of numerous shades from yellow to carmine and white.

Sow seeds $\frac{1}{16}$ in. deep in March for summer flowering, though on light sandy soils autumn sown plants are recommended as being stronger. The position should be somewhat shady, as if exposed to the full glare of the sun the little plants seem to shrivel up.

LEPTOSYNE (from Gr. *leptos*, slender). Nat. Ord. *Compositæ*.

These pretty Californian flowers are of rather recent introduction, and the daisy-like flowers, which are borne on long stalks, are excellent for vase arrangements. They are sometimes placed under the same head as *Coreopsis*, which they much resemble.

LEPTO'SYNE—*continued*.

L. Douglas'i. Height 1 ft. This beautiful little annual has large yellow flowers, but being tender should be started in heat and planted out.

L. gigan'tea. This biennial plant attains the height of 5 ft. and is of rapid growth. It bears large Marguerite-like flowers.

L. marit'ima. This plant is really perennial and, moreover, rather tender, but it may be treated like a half-hardy annual. The large pale yellow flowers which reach a height of 3 ft. are very decorative. Syn., *Coreop'sis mari'tima*.

L. Stillman'ni. This is the best known of the species and an early plant to flower, for within five weeks of sowing the golden blooms appear. These are about $1\frac{1}{2}$ ins. across, broad petalled, rising on upright stems 1 ft. to 18 ins. high, and very suitable for cutting. The foliage is finely cut, compact, and bushy. A good subject for a group or small bed. 1873. Syn., *Coreop'sis Stillman'ni*.

Sow the seed of the half-hardy species in temp. 65° in March, gradually harden off and transplant outdoors in May. *L. gigantea*, though biennial, may be treated the same way to flower the same summer. *L. Stillmanni* being hardy may be sown outdoors in April in a sunny spot.

LESSER LARKSPUR. See DELPHINIUM *ajacis minus*.

LIMNANTHES (from Gr. *limne*, a marsh, and *anthos*, a flower). Nat. Ord. *Geraniaceæ*.

L. Douglas'i is a pretty Californian plant of robust and spreading habit, about 6 ins. high. It yields an abundance of delicately scented, five-petalled yellow flowers, 1 in. in diameter, terminating to white at the extremities. It is a favourite plant with those who keep bees, and is valuable as an edging as well as in masses. Few annuals stand the winter better if sown in autumn. 1833.

L. Douglas'i al'ba is an entirely white variety.

For spring flowering sow the seeds $\frac{1}{18}$ in. deep in the open ground in autumn. If sown in March or April a later succession of flowers will result, and continue by subsequent sowings in bloom till October. The soil need not be rich, as it flourishes quite as well in poor, light, and even mossy ground.

LINAR'IA—*Toadflax* (from L. *linum*, flax, in reference to the leaves). Nat. Ord. *Scrophulariaceæ*.

The annual Toadflaxes are among our most hardy and attractive flowers, of easy culture, varied and beautiful in broad masses, preferring a hot and sunny situation to too much moisture. There are some biennial species that, however, can generally be flowered the first season. Belonging to the tribe of Antirrhinums they are characterised by a spurred corolla and prominent palate.

LINAR'IA—*continued*.

L. alpi'na is a biennial species, and a beautiful little rock plant having purple and orange flowers only 3 ins. high. It makes a good plant for the wall garden. July. Alps and Pyrenees, 1750.

L. alpi'na ro'sea is a beautiful new variety, pale rose and orange-scarlet blotch. Height 3 ins.

L. biparti'ta. The Snapdragon-like flowers are very varied, from white through carmine to deep purple, the latter being sometimes named *splen'dida*, about 1 ft. high. It is sometimes known as *Annual Heather*. August. N. Africa, 1815.

L. marocca'na is a pretty plant about 9 ins. high, with bunches of purplish long-spurred flowers. It was only brought from Morocco in 1872. It flowers in profusion in a warm spot.

L. marocca'na al'ba is a variety of the above, of recent production, and sometimes known as *White Pearl*. It is entirely white and a good flower to cut from, lasting a long time in water. The plant is only $1\frac{1}{2}$ ins. high, but is a mass of bloom, and for this reason makes a capital edging.

L. marocca'na Excelsior is a new Scotch strain of great merit. It contains a mixture of all shades—dark violet, light blue, dark crimson, pink, and yellow.

LINAR'IA—*continued.*

L. multipuncta'ta is the dwarfest of all; the flowers black with yellow spots.

L. Pere'zi bears small yellow flowers and is of little importance.

L. reticula'ta is a fine annual, $1\frac{1}{2}$ ft. high, the purple flowers appearing in June. It is a native of Algiers, whence it is said to have been brought in 1788. Its variety

L. reticula'ta au'rea purpur'ea is also a charming plant and one of the best of annuals, of varied purple shades mottled with orange.

L. Spar'tia. A deep yellow. August. Spain, 1772.

L. trist'is is a hardy little plant 6 to 9 ins. high, with yellow flowers mottled with brown, excellent for rockwork or edgings. July. Spain, 1727.

Sow the seed outdoors in a sunny spot in patches $\frac{1}{16}$ in. deep in April for summer, and in August for spring flowering, thinning out to 3 ins. apart for the small varieties and 12 ins. for the taller. Linarias make good pot plants.

LINSEED OIL-PLANT. See LINUM *usitatis'simum*.

LI'NUM—Flax (from *L. linum*, flax, or old Celtic *lin*, a thread). Nat. Ord. *Linaceæ*.

These are well-known and valuable annuals, being free-flowering, fairly hardy, most elegant and easily raised. Not exceeding 2 ft. in height, they

LI'NUM—*continued*.

look best planted in little colonies together on a sunny well-drained border or small bed.

L. grandiflorum may be obtained in three colours, white, called *L. g. alba*; rich crimson, *L. g. coccineum* or *rubrum*, known as *Scarlet Flax*; and blue, *L. g. azureum* or *cœruleum*. By successive sowings it may be had in flower from May to October, and as a pot-plant it is useful and effective. Height 12 to 14 ins. A native of N. Africa.

L. usitatisimum, or *Linseed Oil-plant*. The tenacious and delicate fibre of this is the flax of commerce, while linseed oil is obtained from the seed. Of an unknown origin, it has been in cultivation from time immemorial, and the period of its introduction into England is unknown. The small blue round-petalled flowers are produced on long, slender stems.

Sow seeds $\frac{1}{8}$ in. deep at the beginning of April outdoors in ordinary soil where required to flower; but if in pots, give two parts loam, one part manure and sand; place in cold frame and keep shaded till the seedlings are up. Support by twigs, and water freely.

LION'S MOUTH. *See* ANTIRRHINUM.

LOA'SA (a name probably given by Michael Adanson, 1726 to 1806, a French naturalist, in honour of a Spanish botanist). Nat. Ord. *Loasaceæ*.

LOA'SA—*continued*.

The Loasas are an interesting, though not showy, family, remarkable for their very curious pendent reflexed flowers (something like the shape of a cyclamen), and stinging foliage. Being natives of Peru, Chili, Brazil, and other tropical parts of S. America, they are tender in this climate, but otherwise not difficult to grow in a warm and sheltered part of the garden.

L. acanthifolia is a dwarf plant about 6 ins. high, having singular yellow and red flowers and spiny, deeply cut foliage. End of June to September. Chili, 1822.

L. aurantiaca, or *Chili Nettle*, is the most interesting of the group and the most useful. Unlike the other species it is a climber, and when once it makes a start grows rapidly, attaining in a hot summer about 6 or 7 ft. The deeply cut foliage is soon bedecked with numerous bright orange-red flowers, about 1 in. across, and continue from July to September. It flourishes best in partial shade and requires support. Syns., *L. lateritia*, *Blumenbackia lateritia*, and *Caiophora lateritia*.

L. hispida. Height 18 ins. The flowers are 1 in. across, of a bright canary yellow, the centre green and white. July to September. Peru, 1830.

L. lateritia. See *L. aurantiaca*.



CHILI NETTLE (*Loasa aurantiaca*).



LOASA HISPIDA.

LOA'SA—*continued*.

L. nítida. Height 2 ft. Flowers bright yellow, dotted with red spots in the centre. Foliage stinging and hairy. Chili, 1822. Syns., *L. tri'color*.

L. tri'color. See *L. nítida*.

L. vulcan'ica is a species forming a pyramidal bush with pure white flowers, centred with red and yellow. 18 ins. to 2 ft. high. July and August. Ecuador, 1877.

The seed may be sown $\frac{1}{16}$ in. deep in sandy soil in temp. 65° during February and March. Transplant singly into 3-in. pots and grow on in 55° till June, when the seedlings may be planted out. Apply liquid manure when in bloom.

LOBE'LIA (named after M. Matthias de Lobel, a Flemish botanist). Nat. Ord. *Campanulaceæ*.

What are so often termed annual Lobelias are the well-known tufted plants with blue flowers so often seen edging "bedded-out" plants. They are not true annuals, however, with the exception of *L. gracilis* and *L. tenuifolia*, and if lifted into pots and placed in the greenhouse they will continue flowering for a long time during the winter. From these stock plants cuttings may be taken in the spring. In this way the same strain and colour is more surely reproduced than if raised from seed. They are mostly native of the Cape of Good Hope, and since their introduction have been very much improved, and a large number of varieties conjured.

LOBE'LIA—*continued*.

- L. eri'nus*. The type of the garden Lobelia grows 6 ins., covered with blue flowers in July. Cape of Good Hope. Introduced 1752.
- L. eri'nis compacta*. Height 6 ins. Very compact and shrubby. Blue.
- L. eri'nis compacta al'ba*. A pure white variety.
- L. eri'nis compacta au'rea* has golden foliage and blue flowers.
- L. eri'nis Barnard's Perpetual* is a fine ultra-marine blue, marked with pure white at the base of the two lower petals.
- L. eri'nus Low's Triumph* is another dark blue form relieved by small white blotches.
- L. eri'nus Royal Blue*. Beautiful dark blue with white eye.
- L. gracilis* has a drooping, spreading habit, which makes it more suitable for vases and hanging baskets or rock-work. There are light blue and dark blue varieties.
- L. pu'mila grandiflora* is a dwarf compact plant suitable for edgings. The flowers are a puce colour with white eye. Height 6 ins.
- L. pu'mila magnifica* has dark blue flowers.
- L. pu'mila Mrs Murphy* is white.
- L. ramo'sa* is a taller branched Australian variety, about 9 ins., with large blue flowers. August. Swan River, 1838.
- L. ramo'sa al'ba* has large white flowers.

LOBELIA—continued.

L. ramo'sa *Heavenly Blue*. Pale bright blue flowers.

L. specio'sa, of spreading habit, is suitable for vases and hanging baskets. The garden varieties are *Blue Stone*, *Emperor William*, rich deep blue. Height 6 ins.

L. coronopifo'lia is a Cape variety with large blue flowers. About 9 ins. high. July. 1752.

L. ilicifo'lia has pink flowers, and has a trailing habit suitable for hanging baskets and vases. These two latter are not so well known. June. 1815.

L. tenuifo'lia. This is a true annual and rather tender. The plant grows about 18 ins. high, with none of the tufted habit of the others. The flowers are much larger and a deep cobalt blue. A most excellent pot-plant.

Sow the seeds, only just covering them, in autumn in preference to spring. They will then flower better, and be stronger plants than those sown in February. Prick off into boxes or pots before winter 1 in. apart, keeping them close to the light in a temperature of 65° to 70°. When they touch one another transplant again 2 ins. apart. Remove them in May to a cold frame to harden, and plant out in June. A good variety will produce seedlings sufficiently true for ordinary borders, but for formal beds it is better to strike them from cuttings to get uniformity in shade of

LOBE'LIA—*continued*.

colour. The two true annuals, *Lobelia gracilis* and *L. tenuifolia*, are half hardy and require to be raised in gentle warm in March and potted up. When frosts are over they can be planted out.

L'ONAS *ino'dora* (derivation uncertain). Nat. Ord. *Compositæ*.

An uncommon plant from the N. African coast. It may be classed as one of the "everlastings," the flowers having that long-keeping quality peculiar to that class. It bears heads of yellow flowers in dense terminal clusters in July to October, about 12 ins. high. Introduced 1686. Syn., *Athand'sia an'nua*.

Sow seeds $\frac{1}{16}$ in. deep in February in heat about 65°, and plant out in May; in April outdoors in patches or lines, thinning out to 6 ins. apart.

LOPE'ZIA *corona'ta* (called after the Spaniard, Lopez). Nat. Ord. *Onagraceæ*.

This is an annual not often seen nowadays and not at all showy. Its small flowers are exhibited when only 3 ins. high, though the plant grows to 3 ft. when mature, and continues throwing out its little pink and white blooms in succession at the axil of each leaf from July to October. From Mexico, 1805.

Sow in the borders in April or on a hotbed in March, and transplant in light soil in May.

LOPHOSPER'MUM *scan'dens*. See MAURANDYA *scandens*.

LOVE-IN-A-MIST. See NIGELLA.

LOVE-LIES-BLEEDING. See AMARANTHUS.

LUNA'RIA—*Honesty*, *Money-Flower*, or *Satin-flower* (from *L. luna*, the moon, in allusion to the curious seed-pods). Nat. Ord. *Cruciferae*.

L. bien'nis is a well-known biennial plant that is never out of place on the margin of a partially shaded shrubbery, the flowers, which bloom in May to July, being succeeded in autumn by a crop of large, flat, oval, satiny seed-pods, which are generally saved, cleaned, and used for ornamental purposes in the house during winter, in conjunction with Cape Gooseberry. (*Physalis*). Syn., *L. an'nua*.

The flowers, usually of a light purple colour, are borne at the end of small branches all the way up, the topmost reaching about 2 ft. Besides the purple type there is a white form, and latterly, a crimson one has been produced. Native of Europe, 1570.

The seeds may be sown $\frac{1}{2}$ in. deep in April and subsequently thinned out to 6 ins., or else transplanted to flowering quarters for the following spring.

LUPINE. See LUPINUS.

LUPI'NUS—*Lupine* (from *L. lupus*, a wolf). Nat. Ord. *Leguminosæ*.

LUPINUS—*continued*.

The Annual Lupines are very pretty flowers, and some of the best kinds, such as *L. Hybridus at'ro-coccin'eus*, and *L. muta'bilis Cruickshank'i*, are effective additions to the border. There is great variety and their hardiness is beyond question. The pea-like flowers are borne in spikes well above the foliage. The large pods of seeds should be always gathered early to prolong the flowering season.

L. al'bus. Height 12 ins. Has white bloom.
Levant, 1596.

L. al'bo-coccin'eus. Height 18 ins. Crimson and white.

L. Dunnet'ti super'bus. Height 18 ins. Purple and white.

L. Hartwe'gii. Height $2\frac{1}{2}$ ft. With sky-blue, mauve, and white flowers. Mexico, 1838.

L. Hybrid'us at'ro-coccin'eus. Height, $2\frac{1}{2}$ ft. Crimson tipped with white. One of the best.

L. lu'teus. Height 2 ft. Yellow bloom. Sicily, 1596.

L. Menzie'sii. Height 18 ins. A handsome bush having bright yellow flowers. California, 1857.

L. muta'bilis. Height 4 ft. Has white and rose flowers. Columbia. S. America, 1819.



AN ANNUAL LUPINE (*Lupinus mutabilis Cruickshanki*).

[To face p. 158.]

LUPINUS—continued.

L. muta'bilis Cruickshank'i. Height 4 ft. Is a handsome plant having spikes of blue, white, and yellow shaded flowers. Few equal this form.

L. na'nus. A dwarf plant, 9 ins. high, with shaded blue flowers. California, 1833. There is a pure white variety called *L. n. al'bus*.

L. pubes'cens. Height 2 ft. A woolly plant with violet and blue bloom. This is a biennial. Quito, 1844.

L. subcarno'sus. Height 12 ins. Rich blue and white. Texas, 1835. This is perennial, but should be treated as an annual in this country.

Put the large bean-like seeds into the open ground 2 ins. deep about the middle of April to end of May for later flowering, 12 ins. apart, and 18 ins. for the tallest varieties. The first sown should flower in June and July, while *mutabilis* will last till October. If sown in autumn about beginning of October they should bloom in May. *L. pubescens* being biennial should be sown in July to flower the following summer, though it might flower the same year if sown early.

LYCH'NIS (from Gr. *lychnis*, a plant with a bright red flower; related to *lychnos*, a lump). Nat. Ord. *Caryophyllaceæ*.

L. cœli-ro'sa, or *Rose of Heaven*. This is a pretty but uncommon little plant 9 ins. high only,

LYCH'NIS—*continued*.*L. cœli-ro'sa*—*continued*.

having small pale rose flowers centred with white. There is also a white form called *L. c. al'ba* or *Burridg'i*. *L. c. brun'nea* has red-brown flowers, and *L. c. cardina'lis* is magenta colour. Levant, 1713. Syns., *Agrosten'ma cœli-ro'sa* and *Viscar'ia cœli-ro'sa* and *Viscar'ia ocula'ta*.

L. cœrulea is pale lavender.

L. Dunnet'ti is rose.

L. na'na is a dwarf strain.

L. pic'ta e'legans is crimson-purple with broad edging of white.

L. splen'dens is bright pink.

L. Haagea'na hybrids, with large handsome scarlet flowers, 1 ft. high, may be included, as they are best treated as annuals.

Sow lightly and thinly where it is required to grow in March or April.

MADA'RIA—*Mignonette Vine* (from the Chilian name, *madi*, of an uncultivated species). Nat. Ord. *Compositæ*.

M. e'legans, 2 ft. high, the only species cultivated, is an erect-growing hardy Californian annual, with heads of yellow daisy-like flowers touched with red round the centre. The first bloom is produced at the summit of the leading stem, others open in succession downwards, the



VIRGINIA STOCK (*Malcolmia maritima*).

MADA'RIA—*continued*.

M. e'legans—*continued*.

laterals exhibiting the same peculiarity. July to September. A warm border in semi-shade suits it best. 1831.

Sow seeds $\frac{1}{8}$ in. deep in April in patches, afterwards thinning out 6 to 8 ins. Syn., *Ma'dia e'legans*.

MA'DIA. See MADARIA.

MAIDEN PINK. See DIANTHUS *deltoides*.

MAIZE. See ZEA.

MALCOLM'IA—*Virginian* or *Virgin Stock* (named after William Malcolm, a nurseryman). Nat. Ord. *Cruciferæ*.

M. mari'tima is a well-known dwarf annual generally used for edgings or grown in patches. It is only 6 to 9 ins. high, and generally sows itself without any trouble, self-sown or autumn-sown seedlings producing the best flowers, which, though small, are borne in quantity all the summer. There are several varieties of pink and white, but the cultivated sorts, Crimson King and Fairy Queen, rose-colour, are the best to grow. Native of the Mediterranean, 1713.

Sow in September for spring flowering where required to grow $\frac{1}{16}$ in. deep; or in March or April for later flowering. Thin out to 3 ins. apart.

MALLOW. *See* MALVA.

MA'LOPE (pronounced Ma'lopy). From the *L. malope*, mentioned by Pliny as a Greek form of *malva*, the *Mallow*). Nat. Ord. *Malvaceæ*.

This plant and its varieties is a handsome border annual belonging to the Mallow family. Too often it is seen only as a half-starved or spindly thing of no beauty. But if the soil is well dug and manured before sowing the results are most charming, the flowers, rather like the *Convolvulus* in shape, being produced in great abundance during the months of June to September. A group of Malope is excellent material for a small bed, or, if grown for cutting, a hedge of it in the reserve garden is both effective and useful. Its home is round the Mediterranean.

M. tri'fida, or *Three-lobed Malope*, is the type, of a purplish-pink shade, introduced 1710. But this plant has given place to the following garden variety and its forms, namely :—

M. tri'fida grandiflor'a. This, if well grown, is 2 ft. high with rosy flowers. There is one called *al'ba*, which is pure white; another *ro'sea*, white touched with pink; *Crimson King*, bright red; and *na'na al'ba*, dwarf white.

Prepare bed by deep digging and manuring. Sow $\frac{1}{2}$ in. deep in April or May and thin to 18 ins. apart. Water frequently, and give some stimulant when in flower.

MALVA—*Mallow* (from *L. mollis*, soft, in allusion to the emollient qualities of the plant). Nat. Ord. *Malvaceæ*.

This is a large family and most of the species are perennial, but the two mentioned below are annuals, though they have small claim to special mention except as ornamental foliaged plants. They are fairly hardy and may be planted in a warm border.

M. cris'pa, *The Curled Mallow*, is a tall plant some 4 to 6 ft. high, having large, broad crimped leaves and white flowers, appearing in June or July. Syria, 1573.

M. mauritia'na is also a tall plant, about 4 or 5 ft. high, producing magenta-blue flowers in July. Crete, 1723. Syn., *Lavate'ra cre'tica*.

Sow seeds $\frac{1}{2}$ in. deep in sandy soil in pans placed in a cool frame either in March or in April and afterwards potted off singly. Plant out in ordinary rich soil in May or June, allowing plenty of room for growth.

MARIGOLD.

The name, derived from *Mary*, i.e., the Virgin Mary, and gold (compare the dutch word *goudbloem* and German *goldblume*, literally gold-flower, and Gaelic *lus Mairi*, marigold, literally "Mary's plant"), is given to several genera indiscriminately, viz., *Calen'dula officina'lis*, the Common or Pot-marigold, so called because formerly used in cooking and other economic purposes; the species

MARIGOLD—*continued*.

of *Tage'tes*, the African or French marigolds (though hailing from South America and Mexico), and *Dimorphothe'ca pluvia'lis*, the great Cape Marigold. (See under their respective headings.)

MARTYN'IA—*Unicorn Plant*, or *Elephant's Trunk Plant* (named after Dr John Martyn, sometime Professor of Botany at Cambridge). Nat. Ord. *Pedalineæ*.

A small tribe of pretty half-hardy annuals from Brazil, Peru, Mexico, and the warm parts of N. America. It may be characterised as branching in habit, covered with clammy hairs and bearing at the top roundish leaves and short racemes of purplish or yellow tube-like flowers spreading $1\frac{1}{2}$ ins. in length. It takes its name of Unicorn Plant or Elephant's Trunk from the very curious shaped seed-pod (particularly *M. proboscidea*), which is a woolly, wrinkled capsule armed with two long hook-like appendages. A warm, sunny position is essential. The principal species are :—

M. an'nua. Syn., *M. probos'cidea*.

M. fra'grans, 2 ft. high, has sweet-smelling mauve flowers streaked with yellow. July. Mexico, 1840.

M. lousia'na. Syn., *M. probos'cidea*.

M. lu'tea, $1\frac{1}{2}$ ft. high, has yellow flower clusters in July. Brazil, 1825.

M. probos'cidea, about 10 ins. high, is the most robust member of the family, with heavily-

MARTYN'IA—*continued*.

M. proboscidea—*continued*.

scented flowers of pale blue in July. Mexico, 1737-1738. Syns., *M. annua* and *M. lousiada*.

Sow the seeds 1 in. deep singly in small pots in light soil in temp. of 60° to 70° in March; harden off and transplant the seedlings in a rich light soil in a sunny position outdoors in June, 1 ft. apart. It is advised to mulch round the plants after planting. Give plenty of water in dry weather.

MARVEL OF PERU. *See* MIRABILIS.

MASK FLOWER. *See* ALONSOA *linearis*.

MATTHIOLA—*Stock* and *Stock Gillyflower* (named after an Italian physician and botanist, Pier Antonio Matthioli). Nat. Ord. *Cruciferae*.

As all gardeners know, stocks are among the choicest flowers grown, not only for their extreme gaiety of colouring, but also for their delicious scent. It is impossible to overestimate their worth as magnificent "bedders," both the annual and the biennial forms. The form of the flower is too well known to require much description, and it is always worth while to get the best selected seed from first-class seedsmen.

M. annua and *Ten-Week Stocks*. The wild plant which grows in the south of Europe, and introduced in 1731, is the ancestor of that beautiful annual section known as *Ten-Week Stocks*. The habit is somewhat branching, with a large central spike of bloom, 18 ins. high, sometimes

MATTHI'OLA---continued.

M. an'nua—continued.

single, sometimes double. The latter are by far the finest, though in sowing them a small percentage of singles is sure to crop up; but this is almost impossible to avoid. The colours range from pure white to blush rose, carmine, mauve, and purple. A very fine strain is known as *Pyramidal Ten-Week Stocks*. This is one of the finest annuals in cultivation. The plants should be placed 12 ins. apart. Another strain is called *The Bouquet*. This is more dwarf, and particularly useful for pots in the conservatory. The *Giant Perfection Ten-Week Stock* is a splendid strain too. It is branching, and has large spikes of flowers of many colours. *Princess Alice* is a magnificent variety with large white trusses. Another variety is known as the *Rocket Ten-Week*. This grows 2 ft. high, is branching, and produces large trusses of bloom. One of the finest for cutting from. Yet another, the *German Dwarf Ten-Week*. This is compact, a free bloomer, and good bedder. 12 ins. high, and of many shades of colour.

M. bicor'nis is a dwarf annual, only 12 ins. high, having lilac-coloured flowers, which close up in the daytime and open at night, at which time they exhale a strong perfume which is very delicious. S. Europe, 1768. Syn., *M. tristis*.

MATTHIOLA—continued.

M. græ'ca, or *Wallflower-leaved Stock*, is an annual, and quite a contrast to any other variety, having glossy deep-green foliage very like a Wallflower. The double white flower spikes are similar to the type, but are scarcely more than 12 ins. high. A native of the Greek Archipelago. A variety of this, known as *All the Year Round*, is double white, compact, and vigorous, and a good bedder, with glossy leaves. 12 ins. high.

M. fenestra'lis is a biennial plant. 1 ft. high. From Crete in 1759, with purplish flowers. It has been improved by cultivation, and now produces many colours. See *Brompton Stocks*.

M. inca'na, or the wild *Hoary Shrubby Stock* of the Isle of Wight, is the common ancestor of the valuable *Brompton* and *Queen Stocks*. These are very similar and both biennials. They may be distinguished by the roughness of the under side of the leaf in the Queen Stock, while the Brompton is smooth, and there are other slight differences. The Queen Stock is perhaps rather the better of the two for exposed situations, and sometimes proves to be almost perennial. There are a dozen shades and colours among the Bromptons, but not quite so many among the Queen Stocks. These are generally scarlet, white, or purple, usually single, but sometimes double. *Beauty of Nice*, flesh-pink; *Queen*

MATTHI'OLA—*continued*.

M. inca'na—*continued*.

Alexandra, rose-lilac ; and *Crimson King*, bright crimson, are fine varieties. They are both branching and rather tall, about 2 ft. During the winter, if autumn sown, the seedlings are sometimes a little difficult to keep, so that a sheltered border should be chosen in the seed bed. The *Cocardeau*, or *Cape Giant Stock*, is a variety of Brompton Stock, and a descendant and improved form of *M. fenestralis* (which see). It bears large trusses of bloom in autumn ; in some half-dozen colours. 18 ins. high.

M. sinuata and *Intermediate Stocks*. The so-called *Intermediate* strain of Stocks takes its source from *M. sinuata*, which is a wild English plant, and not worth cultivating itself. But its descendants are most valuable. They are biennials, shrubby, exceedingly fragrant, and not quite as tall as the Brompton and Queen Stocks (before mentioned), about 18 ins. high. They may be had in bloom practically all the spring, summer, and autumn, according as they are sown. For pot culture they are the best variety. The colours are crimson, scarlet, purple, and white, and much grown for Covent Garden Market.

An excellent hardy Scotch variety of the *Intermediate Stock* is that called *East Lothian Intermediate*. The climate of the North is exactly suited to it, where it is extensively

MATTHI'OLA—*continued*.

M. sinuata—*continued*.

cultivated. It is more branching than the true Intermediate, and on this account is scarcely so suited for pot culture. The colours are scarlet, purple, and white, and, if spring sown, comes in after the Ten-Week Stocks are over, in August and September, and, by later sowing, about July and August, comes into bloom in the early months of spring.

The *Emperor* strain of this Stock is an excellent plant for pot culture in the autumn, being large flowering, and taller than the other Intermediates.

M. tricuspidata is a small annual species with pale mauve flowers, hailing from Barbary, 1739. Of little consequence in the garden.

M. tristis. See *M. bicornis*.

To grow the garden Stocks it will be noted that some are annual only, while others, the autumn and winter varieties, are biennial. The annual *Ten-Week Stocks* and the *Wallflower-leaved Stock* should be sown in pans $\frac{1}{8}$ in. deep in temp. 60° in light soil in March. As soon as large enough to handle, prick the seedlings out in fresh pans and keep in cool frame but out of frost, to harden off. In May they should be ready to plant out, 12 ins. apart, the soil having previously been made fairly rich. A little lime is a good thing to add when planting. They will be in full bloom at the end of June and

MATTHI'OLA—*continued*.

in July. Without artificial heat they may be raised in a cold frame or even outdoors in April, transplanting in June. They will, however, be a month later in flowering. *M. bicornis* is a hardy annual that can be sown in the open in April. The biennial *Brompton* and *Queen Stocks* should be sown outdoors $\frac{1}{8}$ in. deep in a seed bed in July, and transplanted in September to flower the following spring and summer, 12 or 14 ins. apart; or better wintered in a cold frame if position is exposed. *Cocardeau* should be sown in spring for autumn.

The *Intermediate Stocks* to flower in autumn should be treated as annuals and sown $\frac{1}{4}$ in. deep in March or April and transplanted out in June. For spring flowering sow in well-drained pots in cold frame in June on an east or west border. When 3 ins. high transplant in beds in rows 6 ins. apart. In September pot off singly in loam, leaf-mould, and sand. Before frost commences place in cold frame plunged in ashes. When all danger from frost is over, plant out where they are to bloom.

MAURAN'DYA or MAURANDIA (named after Dr Maurandy, a botanist of Carthagera in Spain). Nat. Ord. *Scrophulariaceæ*.

These tender climbing perennials cannot stand our winters, so that they are obliged to be treated as half-hardy annuals. They will grow with great luxuriance 10 ft. high in a season when trained

MAURAN'DYA—*continued*.

against balconies, verandahs, or trellis-work, supporting themselves by their twisted petioles, situated in a southern aspect. In the absence of these advantages, they may be displayed by training them up ordinary pea-sticks, on which they will produce abundance of flowers from June till frost cuts them down. From Mexico and Texas.

M. Barclaya'na has violet Foxglove-like flowers. 1825.

M. Barclaya'na alba is a white variety.

M. Barclaya'na atro-cærulea grandiflora is a garden variety with dark blue flowers.

M. coccin'eum. With light crimson-violet flowers.

M. erubes'cens has rose-coloured flowers. 1830.

M. scan'dens has purplish-rose flowers. Syn., *Lophosper'mum scan'dens*.

Sow the seeds $\frac{1}{16}$ in. in pots of light soil, placing them in temp. 65° in March. Transplant singly into small pots and wait for June before planting out in a rich sandy loam together with a little peat or leaf-mould. A better way still, perhaps, is to treat these plants as biennials. They come into flower sooner, but require more trouble and take up room in the glass-house during winter. Sow during July in thumb pots and keep them safe from frost during winter. In February shift into 4-in. pots in good rich soil and plant out in May.

MECONOP'SIS (from Gr. *mekon*, a poppy, and *opsis*, like).

Nat. Ord. *Papaveraceæ*.

MECONOP'SIS—*continued*.

This includes some beautiful and extremely interesting species, among them two newly introduced plants from Central Asia, which have created quite a stir in the horticultural world, viz., *M. integrifolia* and *M. punicea*. They are all of biennial growth and die after flowering, though sometimes it is two or three years before some of them arrive at the flowering stage. A well-drained, sunny, sheltered border or rockery is recommended for them, but they are all quite hardy.

M. aculeata is a charming plant about 18 ins. high, having hairy foliage and large satiny blue flowers with bright yellow centres, several growing on a stalk. N.-W. India, 1864.

M. integrifolia. This was brought before the public notice in 1904. The plants were grown from seed brought from the mountains of N.-E. Thibet at an altitude of 11,000 to 15,000 ft., where millions were seen growing. The flowers are 6 to 7 ins. in diameter, borne well above the foliage, on stout, hairy stems, 2 ft. high, of a bright lemon-yellow colour, shaped something like a Tulip, 4 to 6 being the usual number on a plant, though twice that number was sometimes seen in its native mountains. It is recommended to treat it as a hardy, moisture-loving plant, in peaty or leafy soil and sand, and any coddling in the way of protection is fatal.

MECONOPSIS—*continued*.

M. puni'cea. Another remarkable species, discovered and introduced at the same time as the before-mentioned plant. It was found growing in "damp meadows, amid grass and low shrubs, shaded from the rays of the sun, at an altitude of 11,500 to 12,500 ft. in the N.-W. corner of Szechuen." The flowers are dark scarlet, solitary, and nodding, and are borne on stalks 18 ins. to 2 ft. high.

M. nepalen'sis, *The Nepaul Poppy*. An erect pyramidal plant, 3 ft. high, having fine large golden flowers, 2 or 3 ins. across. Favours a cool, peaty soil. Native of the Himalaya, 1866.

M. simplicifo'lia, *The Sikkim Poppy*, about 1 ft. high, has long narrow leaves with a central stalk carrying one large violet-coloured flower. Native of India, 1855

M. Wallich'i, *Wallich's Blue Poppy*. One of the finest of this group, rises 4 ft. or more in a stately pyramid of true blue drooping flowers, which open in June, slowly expanding from the bottom upwards, and by the time the top-most are open the lowest have ripened their seed. The leaves are 12 ins. or more in length, and form a rosette round the base of the flower stem.

There is still something to learn in the cultivation of these lovely Poppyworts, while the recently

MECONOP'SIS—*continued*.

introduced species are rarely to be found at present in gardens, though as the seed becomes cheaper it is to be hoped this will soon be altered. Coming as most of them do from the high plateaux of Central Asia and the Himalayas, they must be regarded as hardy, though most tantalising plants to establish, resenting anything like coddling. The seed, which is very minute, should be sown $\frac{1}{16}$ in. deep in sandy soil in pans or pots placed in a cold frame in March or April. It germinates in a few weeks, and may be pricked off and planted out 18 ins. apart, as soon as the seeds are large enough to handle, where the plants are to grow. The soil should be open and friable with a large proportion of peat and sand. Good drainage and ample moisture are necessary. During the following winter the plants should be kept as dry as possible, as they are liable to rot off, though this is difficult to accomplish except under pot culture. It is a good plan to place sandstone, broken up firmly, round and underneath the leaves to check damp and rot. By the following spring, with any luck, they will be strong established plants and flower the same summer.

MENTZE'LIA (named after C. Mentzel, a Prussian botanist). Nat. Ord. *Loasaceæ*.

Showy annuals and biennials of N. America, suitable for the mixed border when grown in groups together in full sunshine.

MENTZELIA—continued.

M. bartonioi'des. A pretty annual plant, 18 ins. high, having abundant elegant pale yellow flowers furnished with quantities of long slender stamens, slightly fragrant, in August. Mexico, 1849. Syns., *Eucni'de bartonioi'des* and *Microsper'ma bartonioi'des*.

M. decapeta'la. See *M. ornata*.

M. lævicau'lis. An annual 1 to 3 ft. high, with a whitish stem, which, with the leaves, is covered with strong hairs. The yellow flowers only expand in sunshine. From California, 1890.

M. Lindley'i. Height $1\frac{1}{2}$ ft. Better known under its other name of *Barto'nia au'rea*. The polished, broad-petalled, golden-yellow cup-shaped flowers, about $1\frac{1}{2}$ ins. across, produced in June, are very showy and free-flowering, but only exhibit their beauty under full exposure to the sun. Introduced from California, 1833-1834. Syn., *Barto'nia au'rea*.

M. nuda. A biennial plant about 3 ft. high, having white flowers similar to *M. lævicaulis*, in August. From Missouri, 1811. Syn., *Barto'nia nu'da*.

M. orna'ta. A biennial about 3 ft. high, having large, fragrant, cream-coloured flowers in July. From Missouri, 1811. Syn., *M. decapeta'la* and *Barto'nia decapeta'la*.

MENTZE'LIA—*continued*.

Propagate the annual varieties by seed sown $\frac{1}{8}$ in. deep in February in temp. 65° , growing the seedlings on in a frame, giving liberal shifts. Soil, fibry loam, and a small quantity of leaf-mould and sand. Plant out in May in a sunny, well-drained border. They may also be sown, but with more risk, in the open in mild weather in April where they are intended to flower, and thinned out at about 1 ft. apart when an inch high. *M. Lindley'i*, however, may be sown for spring flowering the autumn before, about September, and prefers a sandy soil. The biennials, sow the previous May or early June in the open in the reserve garden, when they will be large enough in the autumn to move to blooming quarters for the next summer.

MESEMBRYAN'THEMUM—*Fig Marigold* (from Gr. *mesembria*, mid-day, and *anthemon*, flower). Nat. Ord. *Ficoideæ*.

Nearly all the species of this numerous family are perennial, but there are a few annuals to note. Being natives of warm climates they are rather tender and revel in the sunshine on an old wall or rockery even in the poorest soil. They generally flower about July till cut down by frost.

M. crystallinum, or *Ice Plant*, is a dwarf trailing plant covered with icy-looking warts and sometimes used for garnishing; the star-like flowers are small and white. There is also a pink variety. A native of Greece, 1775.

MESEMBRYAN'THEMUM—*continued*.

M. gla'brum. A trailing plant with large yellow flowers. 1787.

M. tri'color, 3 ins. high, is the best of the annual species, the abundant, large, star-like flowers, deep rose and white with purple-crimson centre, being very effective. There is also a white variety with purple centre. Greece, 1775 or 1794.

M. pomeridia'num, 6 ins. high, with yellow flowers. Cape of Good Hope, 1774.

Sow the seeds $\frac{1}{8}$ in. deep in pans of sandy soil in temp. 55° to 65° in March, transplanting the seedlings in June outdoors in a sunny position, 6 to 8 ins. apart. Ordinary soil will do, but a compost of sand, peat, lime-rubble or grit with a little old cowdung mixed, suits them admirably.

MEXICAN ASTER. *See* COSMOS.

MEXICAN THISTLE. *See* CNICUS *conspicuus*.

MEXICAN POPPY. *See* ARGEMONE *mexicana*.

MICHAUX'IA, or *Michaux's Bell Flower* (named after the French botanist, M. André Michaux). Nat. Ord. *Campanulaceæ*.

M. campanuloi'des. A handsome and most interesting hardy plant throwing up a spike of branched-out, rosy-white flowers, 4 to 5 ft. high. The name, *Bell Flower*, is misleading, as the florets do not form a bell at all, but have reflexed petals somewhat like a *Cyclamen*.

MICHAUX'IA—*continued.*

M. campanuloides—*continued.*

At a little distance it might easily be taken for some kind of lily. It is a plant that is somewhat "tricky" in its behaviour, and is apt to suddenly damp off and entirely fail, and for this reason is not commonly seen. Though usually considered a biennial, it occasionally takes three years to flower. The numerous flowers appear in July to September. Native of the Levant, 1787.

M. Tchihatchew'ii. A species somewhat like the first, producing a tall spike, 3 to 5 ft. high, with abundance of snow-white flowers from a rosette of foliage. Caucasus.

Sow the seeds $\frac{1}{8}$ in. deep in pans in April in a cold frame and transplant outdoors in July; or sow outdoors in May or June and transfer them to their flowering quarters in autumn, allowing 18 ins. between each plant. Deep loam and a dry, not too exposed, situation suits them, with a little protection.

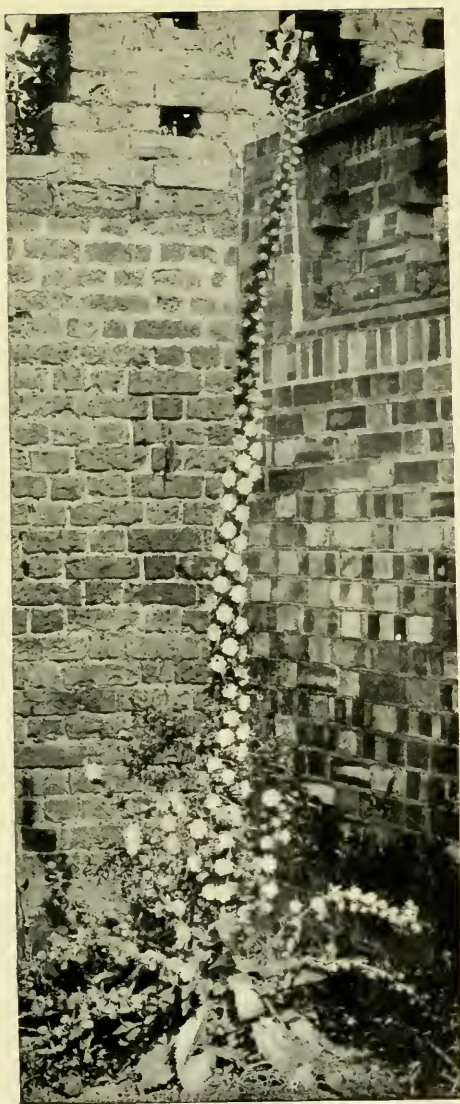
MICROSPER'MA *bartonioi'des.* See MENTZELIA *bartonioides.*

MICROSTEPHIUM. See CRYPTOSTEMMA *niveum.*

MIGNONETTE. See RESEDA.

MIGNONETTE VINE. See MADARIA.

MI'NA *loba'ta* (so named after a Mexican priest). Nat. Ord. *Convolvulaceæ.*



[By permssion of "The Garden."

A RARE HARDY PLANT (*Michauxia tchihatchewi*).

MI'NA *lobata*—*continued*.

This half-hardy annual, though now classed among the *Ipomæas*, is better known under the name of *Mina lobata*. It is a most charming climber, and is easily grown provided the summer be a warm one, but if cold and wet it has but a poor chance, being a native of Mexico, whence it came in 1841.

It requires to be raised in gentle heat and planted out against a trellis, or, if in a border, on pea-sticks, when under favourable conditions it will make 6 to 10 ft. of growth in a season.

About August it will be a mass of lovely tube-like flowers, produced in double racemes, graduating in colour from vivid scarlet in the terminal buds to orange and yellow, while the fully developed flower is a delicate cream colour. It will continue to flower in profusion till cut down by frost. Syn., *Ipomœa versicol'or*.

Propagate by sowing the seeds $\frac{1}{8}$ in. deep during February to March in light sandy soil, in temp. 65° to 70°. Prick out the seedlings into pots as soon as ready, and place in a cold frame to gradually harden off. In May they may be trusted in the open ground in a sunny, sheltered position. The soil should be for preference a sandy loam with peat or leaf-mould mixed.

MIRA'BILIS—*Marvel of Peru*, *Belle de Nuit* or *Four o'Clock* (L. *mirabilis*, to be wondered at or admired). Nat. Ord. *Nyctaginaceæ*.

MIRA'BILIS—*continued*.

A quaint, old-fashioned border plant, perennial by nature, but not very robust in our climate, so is usually treated in this country as a half-hardy annual. The plants are bushy and have a carrot-shaped tuberous root, which should be lifted if it is desired to keep it, just as a Dahlia would be, during the winter. The roots, however, in time become cumbersome to move, and it is hardly worth the trouble, since it is so easily raised from seed. Being natives of Mexico and California, and other warm climes, they require the warmest and most sheltered spot in the garden.

M. jala'pa grows about $2\frac{1}{2}$ ft. high. The flowers are about 1 in. across, open in the evening, and vary from white, rose, lilac, yellow, crimson, and purple. W. Indies, 1596.

M. longiflor'a is about the same height, but has white tubular flowers with carmine centres, somewhat fragrant, expanding about sunset, but unfortunately withering before the morning. Mexico, 1759.

M. multiflor'a is rather dwarfer than *M. jalapa*. The flower clusters are a crimson-purple colour, and not shy of the sunlight like the other two. California, 1876.

Propagate by sowing the seed $\frac{1}{8}$ in. deep in pots of light soil in temp. of about 70° in February, transferring to cold frame to harden off, and planting out at the end of May or in June.

MONEY-FLOWER. *See* LUNARIA *biennis*.

MOR'NA *ni'vra*. *See* WAITZIA *nivea*.

MORNING GLORY. *See* IPOMÆA.

MOTH MULLEIN. *See* VERBASCUM *Blattaria*.

MOURNFUL WIDOW. *See* SCABIOSA.

MULLEIN or MULLEN.

The derivation of this old word seems to be wrapped in mystery. It would appear to originate from the Anglo-Saxon *moleyn*, the meaning of which, however, is obscure, many explanations being suggested, among them candle-droppings or candlewick, to which, with a stretch of imagination, the plant is likened. *See* VERBASCUM.

MYOSO'TIS—*Forget-me-not* (from Gr. *mus*, a mouse, and *ous* (*otis*) an ear, having reference to the leaves).
Nat. Ord. *Boraginaceæ*.

Although there are annual as well as perennial *Forget-me-nots*, the former are hardly, if ever, cultivated. The perennials, however, are usually treated as biennials, being easily raised from seed, and sown in the summer to flower in the succeeding spring with the Hyacinths and Tulips, either as a groundwork or carpet for the bulbous flowers, or as an edging. A moist soil suits them best, though any ordinary garden soil will grow them. Most of the species are quite hardy and easily reproduce themselves.

MYOSO'TIS—*continued*.

M. alpes'tris is the *Alpine Forget-me-not*, a plant of low, cushion-like growth, and regular in height, at once distinguishing it from other species. The centre bloom is abnormally large. Distinctly a plant for edgings and rockery. The flowers are sky-blue, though occasionally a pink or white variety makes itself apparent. The Swiss Alps, 1818.

M. azo'rica', with dark blue flowers and erect growth, 8 ins. high, is later to bloom than most kinds. Coming as it does from the sub-tropical Azores it is rather delicate, and consequently requires a warm, sheltered position. 1846. There is also a pure white variety, while the garden form known as *Imperatrice Elizabeth* is a lovely plant, and quite worthy of pot culture.

M. dissitiflor'a, 6 ins. high, is the best known and earliest Forget-me-not. The sky-blue and yellow-centred flowers are produced in racemes, making their appearance early in the spring. There are several garden forms, viz.: *M. d. alba*, white; *M. d. atrocærulea*, intense blue; *M. d. elegantissima*, *M. d. grandiflora*, *M. d. splendens*, *M. d. Weirleigh Surprise*, and *M. d. Victoria*.

M. pyramida'lis. See below.

M. stric'ta cœlesti'na, known as the *Pillar Forget-me-not*, is a new production, possessing the unusual

MYOSO'TIS—*continued*.

M. stricta cœlesti'na—*continued*.

merit of forming a pyramid, covered with sky-blue flowers, 12 ins. high. There are white and pink forms known as *alba* and *rosea*. It makes an uncommonly pretty pot plant. In some catalogues it is named *M. pyramida'lis*.

Sow the seeds $\frac{1}{16}$ in. deep in May or June outdoors, transplanting the young seedlings to their flowering quarters in October for the following spring.

NASTUR'TIUM (from *L. nasus*, nose, and *tortus*, torment, in reference to its acrid smell). A name commonly but erroneously used for *TROPÆ'OLUM ma'jus* (which see).

NEME'SIA (a name used by *Dioscorides*, the Greek botanist. Probably from the Greek *Nemesis*, a goddess of justice). Nat. Ord. *Scrophulariaceæ*.

Exceedingly pretty and easily grown half-hardy annuals, having a mass of flowers of all colours of the rainbow, each about $\frac{3}{4}$ in. across. They are dwarf, but very showy and effective if grown in groups, or as an edging. If allowed, they get rather straggly and untidy, but may be made much more bushy and compact if the leading shoot is picked off when young. This makes them throw out numerous side shoots, which from the end of June onwards all bear flowers. Natives of S. Africa.

N. floribun'da grows 1 ft. high, and has white flowers with yellow throats.

NEME'SIA—*continued*.

N. strumosa has a variety of colours from white, yellow, pink, and carmine to blood-red. It grows about 15 ins. high. An improved strain is *strumosa Suttoni*, with the brightest colours of carmine, orange, and blood-red.

N. strumosa na'na compacta is a dwarf sort only 9 ins. high, but forms a neat little bush covered with bloom, which is perhaps scarcely as brilliant as the taller varieties, though more hardy.

N. versicolor has blue, lilac, or yellow and white flowers.

N. versicolor compacta is a dwarf variety of the above.

N. Blue Gem is a novelty with Forget-me-not blue flowers. Height 8 ins.

There are many other names given in catalogues, but of little material difference. The best and most pleasing results are achieved by a sowing of mixed varieties, except perhaps *Blue Gem* which should be massed.

Propagate the seeds by sowing them $\frac{1}{8}$ in. deep in pans of light soil placed in temp. of about 55° to 60° in March. Transplant the seedlings in May, 6 ins. apart. Or they may be sown outdoors about the middle of May. Good, well-manured fibrous loam with a small amount of wood ashes gives the best results.



NEMESIA STRUMOSA.



NEMOPHILA INSIGNIS, and Varieties.



See p. 190.]

CHILIAN BELLFLOWER (*Nolana atriplicifolia*).

[To face p. 185.

NEMO'PHILA—*Californian Blue-bell* or *Grove-love* (from Gr. *nemos*, a grove, and *philos*, loving). Nat. Ord. *Hydrophyllaceæ*.

There are several forms of *Nemophila*, all hailing from N. America, chiefly California. All of them have a dwarf trailing and spreading habit, with slender hairy foliage and little bell-shaped flowers. Being quite hardy, the best and earliest flowers are produced from autumn sowings, and if sown in spring flower all the summer.

N. atoma'ria has small white flowers speckled with blue. 1836. Syn., *N. Menze'sii*. The varieties are *al'ba ni'gra*, white, black centre; *cælestis*, white with blue margin; *ocula'ta*, pale blue, black centre.

N. auri'ta is a rare *Nemophila*, having purple flowers. 1831.

N. discoida'lis, dark purple, edged with white. 1843. The varieties of this are:—*e'legans*, maroon edged with white; *vitta'ta*, black edged with white. This is said to be herbaceous in its native country.

N. insig'nis. This is by far the best of the family. The flowers are larger than the other forms and of the most exquisite sky-blue with small white centre. 1833. There is a fine garden selected strain known as *grandiflo'ra* with larger blooms. Also a white form called *al'ba* and a claret-coloured one, *purpur'ea-ru'bra*.

NEMO'PHILA—*continued*.

N. macula'ta has large white flowers blotched and veined with violet. 1848. A variety of mauve colour is called *purpur'ea*.

N. Menze'sii. See *N. atomaria*.

The culture of these little plants is simplicity itself, while few annuals are so hardy. Sow where they are to flower in autumn, just covering the seed; or in spring, about March, for summer blooming. The seedlings must be rigorously thinned out to at least 12 ins. apart; even at this distance they will very soon run into one another. A rich light soil in a moist place in semi-shade is appreciated the most.

NEPAUL POPPY. See *MECONOPSIS nepalensis*.

NEW ZEALAND GLORY PEA. See *CLIANTHUS puniceus*.

NICOTIA'NA—*Tobacco Plant* (named after M. Jean Nicot, a French Ambassador to Portugal). Nat. Ord. *Solanaceæ*.

The Tobacco Plant is at least well known by name, while one or two species are quite familiar in the garden, notably *N. affinis* and the newer *N. Sanderæ* hybrids. Though vigorous growing annuals they are ranked as half-hardy in this climate. The tall and stately habit of growth renders them very suitable for prominent places in front of a shrubbery and as a background for dwarfer plants. They mostly flower in July and August, and even later.



TOBACCO PLANT (*Nicotiana glauca*).

[To face p. 186.]

NICOTIA'NA—*continued*.

- N. affinis*. This, the most common species, has lovely large white flowers which are sweetly scented. The leaves are large, sometimes 2 ft. in length and 1 ft. broad, and very sticky to the touch. It grows about 3 ft. high. There are numerous hybrid forms having colours ranging from white, rose, mauve, to violet.
- N. colos'sea*. An immense plant, 5 to 6 ft. high, of branching habit, with huge leaves delicately tinted when young with a reddish colour, the flowers being pink. There is also a variegated variety most striking in appearance. Brazil, 1888.
- N. grandiflora purpurea*. A majestic plant, with large foliage and reddish-purple flowers, not so large as those of *N. affinis*. 5 ft. high.
- N. macrophylla*. Another huge kind, 6 ft. high, with enormous foliage and purple flowers. S. America.
- N. San'deræ*. This hybrid flower, which made its début early in the present century, attracted a great deal of attention, its merits as a new acquisition being much discussed and criticised, sometimes very adversely. Nevertheless, it has come to stay, and the colour, which varies from pale pink to carmine, has probably been somewhat improved by selection since it first made its appearance. It cannot lay claim to being quite such a noble-looking plant as

NICOTIA'NA—*continued*.*N. San'deræ*—*continued*.

some of the taller growing species, either as regards height or size of foliage and flowers, its chief merit rather lies in the profusion and novelty of its colours. Usually 3 ft. high. It makes a capital pot plant for the conservatory. The *N. Sanderæ Hybrids* are the result of crossing the above with other hybrids; the colours are very varying, from deep red and crimson to violet, mauve, pink, and white. As cut flowers they are most useful, the buds opening in water.

N. Sylves'tris. A valuable species having a branching habit and luxuriant dark green foliage. The white tubular flowers, 3 ins. long, are pendant, and borne in clusters in spikes showing well above the leaves. 4 ft. high.

N. tabac'um virgin'icum grows about 3 ft. high. It has pink flowers and narrow leaved foliage. Island of Tobago, coast of Mexico, 1564.

N. wigandioi'des. A fine foliage plant with dark crimson flowers. 5 ft. high. Creamy white. Columbia, 1874.

Sow the seed in pans on the surface in temp. of about 65° in February or March. Prick off the seedlings and pot them up in 60° of heat. At the end of May they can be planted out and will soon grow into fine plants. Give them a sunny position and water freely in dry weather.

NICOTIA'NA—*continued*.

N. Sanderae. For pot work should be sown in May in a light soil. Gentle heat will quickly start the seed into growth. Prick off into pans and later into small pots, keeping them in a shady frame. Final repotting into 6-in. pots of good loam and coarse sand will be required a little later. Return to the frame for a few days only, when they may be arranged in ashes outdoors, but returned to a cool house before frost can touch them. Early in the year the conservatory should be gay with these flowers.

NIEREMBER'GIA *phæni'cea*. See PETUNIA *violacea*.

NIGELLA—*Fennel Flower, Love-in-a-Mist, Lady-in-the-Bower, Jack-in-Prison, Devil-in-the-Bush, Ragged-Lady* (from *L. nigellus*, diminutive of *niger*, black, in reference to the colour of the seeds). Nat. Ord. *Ranunculaceæ*.

A hardy family of pretty annuals having somewhat curious long-stemmed flowers surrounded by a green feathery setting of Fennel-like foliage. The plants are branched and erect, the foliage being beautifully light and graceful. The flowering season is from July to October.

N. damasce'na. Probably the best known of the group, has flowers of pale lavender blue, about 1½ ft. high. Common in S. Europe, 1570. *Nigella Miss Jekyll* is a new improved strain of much merit.

NIGELLA—*continued.*

N. hispan'ica has claret and white flowers, and not quite as tall as the first-mentioned species. Spain, 1629. There is a purple variety of this called *atropurpur'ea*.

N. orienta'lis. With pale yellow flowers, about 1½ ft. high. Syria, 1699.

N. sati'ra has pale yellow flowers, but not surrounded by leaves like the others. It is cultivated abroad for its aromatic seeds. About 1½ ft. high. Egypt, 1548.

As the seedlings do not stand transplanting well, sow the seeds $\frac{1}{8}$ in. deep in March where they are to grow. Thin out 6 ins. apart each way when quite young.

NIGHT-SCENTED STOCK. *See* *HESPERIS tristis*.

NOLA'NA—*Chilian Bellflower* (from late Latin *nola*, a little bell, for a dog). Nat. Ord. *Convolvulaceæ*. (Lindley's Order *Nolanaceæ*.)

These little annuals are deserving of more popular attention, for they seem to be rarely grown. Though dwarf trailing and spreading herbs, and most suitable for a rockery, the flowers are quite large, about 2 ins. across, the shape of the better known *Convolvulus*. Being maritime natives of Chili and Peru they require a very sunny aspect.

N. atriplicifolia. 4 ins. high, with showy lavender blue flowers with yellow and white centre. Peru, 1834. There is a white form named *alba*.

NOLA'NA—*continued*.

N. lanceola'ta has blue flowers with white centre.
Chili, 1862.

N. paradox'a grows taller, about $1\frac{1}{2}$ ft., with blue flowers. Chili, 1822-1825.

N. prostra'ta is only 3 ins. high with blue flowers.
Peru, 1761.

Sow the seeds $\frac{1}{16}$ in. deep in groups in March outdoors where they are to grow, and thin out to 6 ins. apart. The seedlings will stand transplanting well if lifted with a small ball of earth attached to the roots when quite small. The soil should be rendered light by adding peat or leaf-mould.

NOTCHED FRINGE-flower. *See* SCHIZANTHUS *retusus*.

NUTTA'LIA *digitata*—(named after Thomas Nuttall, an American botanist). *See* CALLIRHOE *digitata*.

NYCTER'NIA—(from Gr. *nycteros*, by night, in reference to its fragrance by night-time). Nat. Ord. *Scrophulariaceæ*.

Charming little half-hardy annuals forming compact tufts, and in late autumn smothered with minute flowers which at night-time are deliciously scented. They are excellent for the rockery or as edgings. Natives of S. Africa. Sometimes the term ZALUZIAN'S'KYA is used instead of NYCTERINIA.

N. capen'sis has pure white flowers smaller than the other species. About 9 ins. high. Syn., *Zaluziansk'ya capen'sis*.

NYCTERINIA—*continued*.

N. selaginoi'des. 4 ins. high. The flowers are white with orange centres. Syn., *Zaluzians'kya selaginoi*'des.

Sow the seeds on the surface of fine mould in pans covered with a piece of glass placed in a temp. of about 60° in March. The seedling must be transplanted in May or early June outdoors. Or the seed may be sown outdoors in May where they are to grow. Give rich light soil, and water freely in warm weather.

ÆNOTH'ERA—*Evening Primrose, Tree Primrose, Large Campion* (from Gr. *oinos*, wine, and *thera*, a pursuit, in consequence of the dried roots acquiring the flavour of wine). Nat. Ord. *Onagraceæ*.

A genus of N. American plants, some of which are stately, while others are low growing. All have pleasing flowers, generally lemon yellow or white, of large size from June onwards. Many do not expand fully till the sun is down and wither when it rises next morning, hence the well-known name of *Evening Primrose*. The taller kinds are well adapted for intervals in the shrubbery or mixed border. They are easily grown, very often sowing themselves in unlikely places.

Æ. *bien'nis* is a familiar hardy plant of biennial duration, attaining 6 ft. in height. It has numerous large lemon-coloured flowers, 3½ ins. across, lasting a short time individually,



EVENING PRIMROSE (*Enothera biennis*).

ŒNOTH'ERA—*continued.*

Œ. *bien'nis*—*continued.*

but quickly succeeded by others. The variety *Lamarkia'na* (or *grandiflor'a*) is an improved form. Native of N. America, 1622.

Œ. *bistor'ta Veitch'ii*. A half-hardy annual, about 1 ft. in height, has bright yellow flowers spotted with crimson.

Œ. *Drummond'i na'na* must be treated as a half-hardy annual in this country, though herbaceous in its own. It has soft bright yellow flowers about 6 ins. high ; most suitable for a rockery. Texas, 1833.

Œ. *Drummond'i al'ba* is a white variety of the above.

Œ. *grandiflor'a* is an improved form of Œ. *biennis*.

Œ. *Lamarckia'na* is the same as Œ. *grandiflor'a*.

Œ. *Lind'leyi*. See GODETIA *Lindleyi*.

Œ. *odora'ta* grows 2 ft., the yellow flowers being somewhat fragrant. This is biennial, but may be forced into flower the first year by treating it as a half-hardy annual. South America, 1790.

Œ. *sinua'ta*, growing about $2\frac{1}{2}$ to 3 ft., is a half-hardy annual with pretty yellow flowers. N. America, 1770.

Œ. *sinua'ta max'ima* is a magnified form of Œ. *sinuata*.

ŒNOTH'ERA—*continued*.

Œ. taraxacifo'lia. A prostrate trailer of biennial growth (on light soils often perennial), with large snow-white blossoms changing to pink. Most suitable for banks and rock-work.

Sow the seed of the annual species $\frac{1}{16}$ in. deep in patches in April outdoors, while the half-hardy should be sown under glass and transplanted in May. The biennial kinds in a shady place outdoors in April to July, transplanting the young seedlings in a sunny border in September or October to their flowering quarters. *Œ. bien'nis* requires 2 to 3 ft. all round.

OLYMPIAN MULLEIN. *See* VERBASCUM *olympicum*.

OMPHALO'DES—*Venus's Navelwort* (from Gr. *omphalos*, the navel, and *eidos*, form, so called from the shape of the seed). Nat. Ord. *Boraginaceæ*.

O. linifo'lia. A pleasing little hardy annual from Portugal, 1748. It is about 6 to 12 ins. high, has greyish-green foliage, and the purest white *Forget-me-not*-like flowers produced in June to September. It is very suitable for growing in the recesses of rock-work and shady places of that kind. It often reproduces itself without extra trouble.

Sow the seeds $\frac{1}{16}$ in. deep in April out of doors to flower in June, and again in June to flower in autumn. If sown again in September they should survive the winter and flower in early spring.

ONOPOR'DON—*Cotton Thistle* (from Gr. *onos*, an ass, and *porde*, breaking wind). Nat. Ord. *Compositæ*.

This is a characteristic family of giant Thistles flowering in July, and suitable for the semi-wild garden or among shrubs. One or two here and there look noble objects when their silvery stems and foliage are shown up against a dark background, and allowed plenty of room to develop. The drawback is that they seed so freely that they are liable to run riot unless checked.

O. ara'bicum. This is a biennial species with large purple flower-heads, erect, slightly branching, the spiny leaves covered with white down on both sides and a woolly stem. Height 8 ft. S. Europe, 1686.

O. bractea'tum. This is a recently introduced (1902) Thistle from Mount Boudroun, Asia Minor, very floriferous, the purple flower-heads 3 to 5 ins. across. The leaves, $2\frac{1}{2}$ to 3 ft. long, and stem are silvery, spiny, and glossy, and most ornamental. Height 10 to 12 ft. Biennial.

O. elonga'tum. See *O. illyricum*.

O. hor'ridum. See *O. illyricum*.

O. illyr'icum. This is a biennial species very like the Scotch Cotton Thistle, but with greener and more deeply cut and more spiny foliage, while the stem is stiffer and rather more branching, but with the same purple flower-heads. Height 6 ft. S. Europe, 1640.

ONOPOR'DON—*continued*.

O. macran'thum. An annual Thistle with purple flower-heads and spiny leaves, glabrous or smooth above, and woolly underneath. Height 6 ft. Barbary, 1798.

O. taur'icum. A handsome biennial species with immense woolly, spiny, silvery leaves, whitish, erect and branched and purple flowers. Height 6 ft. S. Europe.

Sow the annual species *O. macranthum* $\frac{1}{2}$ in. deep in ordinary soil outdoors in March in a sunny position.

The other species, being biennial, should be sown in April, May, or June, where they are to grow and flower the following year.

OPIUM POPPY. See PAPAVER *somniferum*.

OXALIS—*Wood Sorrel* (from Gr. *oxis*, acid, the taste of the leaves). Nat. Ord. *Geraniaceae*.

This is a very large family of dwarf plants, few of which are in cultivation. Those that are so are principally half-hardy perennials and not robust enough to stand our winter, so that they are mostly treated as annuals, flowering the same year as sown. The flowers, though small, are large petalled, while the foliage is trefoiled. Suitable for rockeries and old walls.

O. cornicula'ta. A native plant suitable for the rockery; 6 ins. high, with small yellow flowers.

OXA'LIS—*continued*.

O. corniculata rubra is similar to above, except that the foliage is deep crimson-brown. A beautiful little plant for a rockery, but apt to run riot.

O. ro'sea. Height 6 ins. Is a deep rosy-purple Chilean flower, handsome for pot work. 1826.

O. tropæloi'des. Height 3 ins. Has deep yellow flowers and bronze foliage.

O. valdivien'sis. Height 6 ins. A lemon-yellow variety. From Chili, 1862.

Sow $\frac{1}{18}$ in. deep where they are to grow in a warm sandy soil in March, thinned out to 3 ins. apart, when they should be in bloom at the end of June.

OXYU'RA *chrysanthemoides*. See LAYIA *calliglossa*.

PÆ'ONY-FLOWERED POPPY. See PAPAVER *somniferum*.

PÆ'ONY POPPY. See PAPAVER *somniferum*.

PANSY. See VIOLA.

PEACOCK POPPY. See PAPAVER *paroninum*.

PALA'VA (named after a Spanish botanist). Nat. Ord. *Malvaceæ*.

P. flexuosa. An elegant little half-hardy plant, bushy and covered with little mallow-like blooms of a mauve colour with white centre and crimson stamens, 9 ins. high. It flowers in June onwards. A native of Peru, 1866.

PALA'VA—*continued*.

Propagate the seeds in pans or pots of light sandy soil, $\frac{1}{16}$ in. deep in temp. 60° to 65° in March or April. In May transplant the seedlings outdoors in ordinary soil, choosing a sunny position.

PALMA CHRISTI. *See* RICINUS.PAPA'VER—*Poppy* (from *L. papaver*, a poppy). Nat. Ord. *Papaveraceæ*.

There are probably no annual flowers that are more gorgeous or that make a greater effect when seen grouped together in a mass than the *Poppies*. They look so irresistible on their long graceful stems that one is fain to pluck them and carry them away, an action, however, which is strongly resented, as they wither directly. This is true of most of the species, but there are some that are not so unkind. The hardy little *Iceland Poppy*, for instance (though not a true annual, but often treated as a biennial), is not so ephemeral, and in consequence is in great request for vases and table decorations. The beautiful *Shirley Poppy*, though to all appearances as delicate as a zephyr, will, if carefully handled, last fairly well in water. The family is represented in nearly every quarter of the globe, from the arctic regions, the home of the *Iceland Poppy*, almost to the tropics. Like many other plants grown from seed, they are liable to "sport," that is, they cannot always be relied upon to come quite true to colour, and especially is this so with most of the "improved" forms, a fact that

PAPA'VER—*continued*.

will account for the bewildering varieties advertised in trade catalogues.

P. arenarium. A Poppy not often grown and only 1 ft. high, has flowers of a brilliant red. From the Caucasus, 1828.

P. commutatum. See *P. Rhæas*.

P. glaucum, *Tulip Poppy*. This showy poppy, 2 ft. high, has large brilliant deep scarlet flowers with smooth glaucous or grey-green foliage. The two inside petals are half the size of the outside, forming a cup within a cup like an early Tulip. The seeds are slow to germinate. Native of Armenia.

P. hybridum, *Golden Poppy*. A novelty, characterised by its golden-yellow foliage, bushy compact growth, and double flowers of a light red colour. Height 12 ins.

P. nudicaule, *Iceland Poppy*. This elegant little poppy is a popular favourite. It is usually considered biennial, though sometimes it lasts longer. The blooms, each produced on a separate naked stalk, vary a good deal in colour, from white, canary-yellow, to deep copper or orange-red. Though usually single, some very often "sport" into double flowers. There is a good strain known as "Munstead," being the result of selected flower seeds. Native of Siberia and the northern parts of N. America, being found even in Spitzbergen,

PAPA'VER—*continued.*

P. nudicaule—*continued.*

where, however, as might be supposed, it is dwarfed.

P. Rhæ'as, *Common Corn Poppy* or *Corn-Rose*.

The ordinary red poppy of the cornfields. This is not a flower one would wish to see in the garden, however beautiful it may be in the fields. It has, however, undergone a process of improvement, and the many forms that have been produced through evolution is remarkable. There is the *Carnation*, *Picotée* or *Flayal*, and *Ranunculus-flowered*, all being double forms of the type and ranging in all shades of red and some few white. The *Carnation* group have fringed edges to the petals.

Of all the varieties, however, there are none that excel in delicacy and grace the well-known *Shirley Poppy*. This charming and aristocratic-looking plant originated at Shirley Vicarage, not many years ago, and is now one of the most popular of garden flowers everywhere. The blooms, which are quite large, sometimes 4 ins. across, and single, range in colour from pure white to pale pink, salmon, rose, and crimson, with sometimes an edging of white. The petals have the appearance of being made out of the finest crinkled silk.

It is a common error to suppose they are useless for cutting and that their beauty is

PAPA'VER—*continued*.

fleeting, for if the blooms are nipped off just as the calix splits early in the morning, the petals will unfold and expand in water. The height of the "Shirley" poppies is about $2\frac{1}{2}$ ft. Syn., *P. commutatum*.

P. lævigatum is a poppy inhabiting the Caucasus. 1823. The flowers are rich deep crimson, each petal having a black blotch at the base and a touch of white. Height 2 ft.

P. paroni'num, the *Peacock Poppy*, is a species something after the style of *P. Rhæas*. The flowers are glossy scarlet with grey eye edged with black. Height 1 ft. Afghanistan, 1883.

P. somni'ferum, the *Opium Poppy*, *French*, or *Pæony-Flowered*. This plant has been in cultivation from the earliest times on account of its product, opium. It is a plant with large wavy glaucous leaves. The Indian and Persian variety has white petals and white seeds, while that cultivated in Asia Minor has purple petals and black seeds. In English gardens many coloured varieties are found, the blooms being very large and showy, not to say gaudy. That known as *Danebrog*, *Danish Flag Poppy* or *Victoria Cross*, is very striking. It is single, having four blotches forming a white cross in the centre on a brilliant scarlet ground. *Giant White*, *Snow-drift*, or *White Swan*, double, pure white and

PAPAYER—*continued.**P. somni'ferum*—*continued.*

fringed. *Miss Sherwood* is white and rose. *Mikado* is double white shading to pink above. *The Cardinal* is a very handsome poppy, with double scarlet fringed flowers. These are all about 2 to 2½ ft. high and sometimes more.

P. tri'lobum. Syn., *P. Rhæas* (which see).

P. umbro'sum. This poppy is not unlike the common field poppy, but is a more intense red with large jet-black patch at the base of each petal. Height 1 ft. Caucasus, 1877.

The cultivation of all annual poppies is a very simple matter. Scatter the seed on well-dug ground in March where they are to grow, and lightly rake it over. When 1 in. high, thin out the seedlings unsparingly, leaving a space of about 12 ins. between each. Slugs are a great terror in the seedling stage. The best plan to keep these marauders away is to surround the plot with a good ridge of soot and lime, and hand-picking any that may be found within the boundary.

PARROT'S BILL. *See* CLIANTHUS *puniceus*.

PEACOCK POPPY. *See* PAPAYER *paroninum*.

PEA, SWEET. *See* LATHYRUS.

PENTSTE'MON (from Gr. *pente*, fine, and *stemon*, a stamen).
Nat. Ord. *Scrophulariaceæ*.

None of the Pentstemon family are true annuals, but they are so easily raised from seed and so often

PENTSTE'MON—*continued*.

treated as if they were annual that it would be a mistake to omit them. Moreover, if left in the ground during the winter, they not infrequently die off, being of uncertain constitution. Seedling plants make just as fine blooms as old plants. They throw up several spikes, each bearing tiers of tubular Gloxinia-like flowers, from violet and mauve to crimson, pink, and white. From a packet of seed some extra good variety is sure to appear, and if it is required to propagate it, recourse is had to cuttings of the young shoots which are easily struck.

P. cyanan'thus is a beautiful plant, 3 ft. high, having spikes of bright blue flowers. N. America. An improved form of this is known as *Brande'gei*.

P. cœru'lea is only 1 ft. high, and bears numerous bright blue flowers.

P. Hartwe'gii and the large flowered garden hybrids are the sorts most recommended for sowing. The variety of colours is endless.

P. Murraya'nus is quite a tall kind, 3 to 4 ft. or even more, with broad greyish foliage and bright scarlet flowers. A native of Texas, it naturally requires a warm position.

Sow seed in February in slight heat, and prick off in boxes when large enough to handle. Gradually harden off in cold frame, and plant out in May. Good soil enriched with manure and leaf-mould will suit them.

PERIL'LA, or *Beefsteak Plant* (from a native Indian name).
Nat. Ord. *Labiatae*.

P. argu'ta atropurpur'ea. See *P. nankinenses*.

P. lacined'tus atropurpur'ea is a very dark mulberry-red coloured foliage plant, 18 ins. high, much used in modern bedding on account of its striking effect. The small flowers are of no consequence and are usually picked off. This particular variety has a crinkled edge to the leaf, which gives it a lighter appearance.

P. macrophyl'la has larger leaves, crinkled, and of the same dark colour.

P. nankinen'ses is the form usually seen and is much the same as the others, but the foliage is not crinkled nor quite so dark as the first-mentioned variety. A native of Eastern India and China, 1770. Syn., *P. argu'ta atropurpur'ea*.

The seed must be raised in heat about 65° to 70°. Sow $\frac{1}{16}$ in. deep in February in pans, pricking off the seedlings in pots singly and gradually harden off. By the end of May or June they can be planted out. They are usually placed in ribbons or small clumps together, but it is a mistake to make too free use of these plants as is often done, being rather melancholy looking and having little to recommend them except the contrast of their deep coloured foliage.

PERSICA'RIA. See POLYGONUM.

PETU'NIA (from Amer. Indian word *petun*, meaning tobacco, to which it is nearly related). Nat. Ord. *Solanaceæ*.

This well-known family is in its native country of S. America a perennial, but in this climate it is often treated as a tender annual. It has been very greatly improved by cultivation, the native species *P. nyctaginiiflora* and *P. violacea* being mainly responsible for the beautiful garden forms now grown. These, however, do not always come true to name when raised from seed like annuals, it being the custom usually with gardeners to propagate them from cuttings to preserve their identity. But for mixed borders, seedlings are very beautiful, and a great number will come true to colour. It is said that the finest double flowers are produced from the smallest seedlings, so that these should not be thrown away as worthless.

P. grandiflor'a is a fine strain of single petunias varying in colour very much.

P. grandiflor'a fimbria'ta. Double and single rose, crimson and purple flowers, fringed at the edges.

P. grandiflor'a in'tus au'rea has large yellow throats, veined and spotted.

P. Miran'da. A new strain, having deep rose-coloured flowers, crimped and curled.

P. grandiflor'a, Lady Courtenay, is a good flower to raise from seed, as it comes very true. The flowers are single, rounded, and of a rich rosy-carmine colour with white throats.

PETU'NIA—*continued*.

P. grandiflor'a superbis'sima. Enormous single flowers with deep throats, veined.

P. viola'cea has double and single purple blooms. Native of Buenos Ayres, 1831. Syns., *Nierember'gia phaeni'cea*, *Salpiglos'sis integrifo'lia*.

Propagate the seeds by sowing on the surface of a compost of loam, leaf-mould, and sand, in well-drained pans in February or March, in temp. 65°. The beginning of June they may be planted out in the open border. Let the position be sunny, water frequently in dry weather, and give stimulants occasionally in the shape of liquid manure.

PHACE'LIA (from Gr. *phakelos*, a bundle, in reference to the clustered flower growths). Nat. Ord. *Hydrophyllaceæ*.

The Phacelias are a family of hardy annuals useful for edgings or groups, and are all natives of either California, Texas, or Mexico. The erect bell-shaped flowers, borne in clusters or racemes, are produced in great abundance, and usually of a bright blue or violet shade. These are supported on delicate hairy stems from the latter part of May to October.

P. campanula'ria. This is one of the choicest hardy annuals in cultivation on account of the rich true blue colour of the flowers. It is a dwarf bushy plant, the leaves a grey-green edged with pale claret, above which rise the erect little blossoms in great quantity to the height



PHACELIA CAMPANULARIA. [To face p. 207.



PHACELIA GRANDIFLORA.

PHACE'LIA—continued.

P. campanula'ria—continued.

of 6 or 8 ins. Without doubt, this is one of the best annuals for an edging. California, 1882. There is a pure white variety with greener foliage.

P. congesta has large tufts of mauve flowers, 1 ft. high, with primate leaves. July to September. Texas, 1835.

P. divaricata Wrangelia'na is a variety with blue flowers and three-lobed radical leaves, *i e.*, springing from the base near throat. Height 12 ins. 1835. Syn., *Euto'ca Wrangeliana*.

P. grandiflor'a was a novelty in 1902 from California. It has the largest flowers of any of the species, violet and blue, veined in the centre and hanging in racemes. These open in June and continue in succession till October. 1 ft. high. It is well known also under the name of *Whitla'ria grandiflor'a*. Other Syns. are *Cosman'thus grandiflor'a* and *Euto'ca grandiflor'a*.

P. Par'ryi has violet-blue flowers with conspicuous white anthers. 1 ft. high. California, 1885.

P. tanacetiflor'a produces large heads of compact small bright blue flowers, much beloved by bees. 1 to 1½ ft. high. California, 1832.

P. vis'cida has blue and violet flowers nearly an inch across in loose clusters. Innumerable minute hairs cover the foliage, exuding a viscid

PHACE'LIA—*continued.*

P. vis'cida—*continued.*

gummy matter. 18 ins. high. California, 1834-1835. Syn., *Euto'ca vis'cida*.

Sow outdoors in patches where they are required to grow about $\frac{1}{8}$ in. deep either in autumn or April. Thin to 3 or 4 ins. apart. Ordinary rich soil in sunny borders.

PHARBI'TIS. See IPOMÆA.

PHEASANT'S EYE ADO'NIS. See ADONIS *autumnalis*.

PHLOX—(From Gr. *phlox*, a flame, in allusion to the many bright colours of the flower). Nat. Ord. *Polemoniaceæ*.

P. Drummond'i. This annual Phlox, with its many varieties, is one of the most charming flowers of the garden, used either as a carpet for taller plants, such as roses, or in a bed by itself. It is not hardy in this climate, being a native of Texas, so that it has to be reared under glass and planted out. The flower clusters are produced in infinite variety of colour, while one variety is star-shaped with long points. In chalky well-drained soils it is at its best, while in stagnant ground it never flourishes. It will not flourish either in shade, but loves the full glare of the sun. The usual height is about 1 ft.

P. D. compacta na'na is a dwarf shrubby strain, comprising all the colour of the taller kinds.



PHLOX DRUMMONDI.



CREAM CUPS (*Platystemon californicus*).

PHLOX—*continued*.

P. D. grandiflor'a is a fine large flowered variety of great diversity of colour and the most effective of the strains.

P. D. cuspidata is a variegated leaved variety with flowers mostly toothed and some fringed; about 1 ft. high. Rose and carmine shades.

P. D. fimbriata. Beautiful star-shaped flowers of all sorts of colours margined with white.

P. D. flore' ple'no is a double flowered form of numerous shades and colours.

Seed should be sown $\frac{1}{8}$ in. deep in light soil in a pan on a slight hotbed in March. Transplant 2 ins. apart in boxes, harden off gradually, and plant outdoors 6 to 8 ins. apart in good soil in June. Water frequently in hot weather. It is a good plan to get bushy plants to pinch off the leading shoot when quite small.

PILLAR FORGET-ME-NOT. *See MYOSOTIS stricta cœlestina.*

PIMPERNEL. *See ANAGALLIS.*

PINCUSHION FLOWER. *See SCABIOSA atropurpurea.*

PINK-ROSETTE EVERLASTING. *See RHODANTHE Manglesi.*

PLATYSTEMON—*Cream-Cups* or *Californian Poppy* (from Gr. *platus*, broad, and *stemon*, a stamen). Nat. Ord. *Papaveraceæ*.

P. californicus is a pretty dwarf-spreading Poppywort, having glaucous-green hairy

PLATYSTEMON—*continued*.

P. californicus—*continued*.

foliage, forming a tuft studded with numerous large-petalled pale yellow flowers about an inch across. It makes a charming rock or border plant. On the lower Californian hills it is quite common. 1833. Height 6 to 9 ins. June.

P. leiocar'pum is very similar to the above. N. California, 1837. July.

Sow seed $\frac{1}{8}$ in. deep in masses outdoors in April, thinning seedlings to 3 ins. apart. Water freely in hot weather. They are vigorous plants, sowing themselves freely and soon taking possession of a bed if allowed to.

POLY'GONUM—*Knot-weed, Prince's Feather, Persicaria, Ragged Sailor* (from Gr. *polus*, many, and *gonu*, a knee, in allusion to the knotty stems). Nat. Ord. *Polygonaceæ*.

This is a very large family, mostly perennials, but there are a few annuals, of which one only is in general cultivation.

P. orienta'le. For wild gardens and shrubberies this is a fine plant, with luxuriant foliage and stout stems bearing drooping racemes of crimson flowers in July. Height 3 to 5 ft. East Indies, 1707.

P. orienta'le al'bum is a variety of the above, bearing an abundance of elegant white flowers on slender arching stems. 3 to 5 ft. high.

POLY'GONUM—*continued*.

Sow the seeds $\frac{1}{16}$ in. deep in light soil in March in temp. 65°, transplanting outdoors in June; or better, outdoors in April and thinned out severely. If fine specimens for the sub-tropical garden are wanted they should be grown singly, allowing plenty of elbow-room.

POPPY—The word is derived from the Old English *poppy*, French *pavot*, old Provençal *paver*, *papaver*, Latin *papaver*, a poppy. See PAPAVER, the true poppies; also ARGEMO'NE, the prickly poppy. ESCHSCHOLT'ZIA, the Californian poppy. GLAU'Cium, the Horned poppy. MECONOP'SIS, the Himalayan poppyworts, including the Welsh poppy. PLATYSTE'MON, or Californian Cream-cups, and ROEMERIA, the Purple Horned poppy.

POPPY-MALLOW. See CALLIRHOE.

PORTULA'CA—*Purslane Sun Plant* (from L. *porto*, to carry, and *lac*, milk, in reference to the milky juice the plant contains). Nat. Ord. *Portulacaceæ*.

This is a family containing some charming annuals, although tender and requiring all the sun it is possible to give them. They are low-growing spreading plants, about 3 or 4 ins. high, with succulent fleshy leaves and flowers, about 1 in. to $1\frac{1}{2}$ ins. across, of the most brilliant colours imaginable, varying from white to yellow, orange, copper colour, chamois rose, pink, carmine, and intense scarlet. Given a hot summer, there will be nothing in the garden more brilliant for their size. They

PORTULA'CA.—*continued.*

should be closely massed, about 6 ins. apart. As to soil, they seem to have very little preference, flourishing just as well in a dry sandy place as in a highly manured bed. It is hopeless, however, to grow them in a moist clogged ground. Some produce single and others double flowers, but both are equally beautiful, though having scarcely any stalks are of little use for cutting. For all practical purposes it is best to purchase a packet of mixed seed, which will probably include the following. The flowering season is the end of June to September.

P. Gillie'sii. Reddish pink. From Mendoza, 1879.

P. grandiflor'a. Yellow of shades; pinks and purples. Chili, 1827. The following are varieties:—

P. grandiflor'a al'ba. A white variety.

P. grandiflor'a au'rea. A deep orange-yellow.

P. grandiflor'a Reg'e'li. Pink with yellow centre. Chili, 1885.

P. grandiflor'a Thelluson'ii. Orange-scarlet. S. Europe, 1839.

P. grandiflor'a lu'tea. Yellow. 1847. Chili, 1827.

P. grandiflor'a splen'dens. Deep reddish-purple. Chili, 1839.

P. grandiflor'a Thorbur'ni. A clear yellow.

PORTULA'CA—*continued*.

The seeds are minute and scarcely want covering with soil. Sow at the end of April outdoors; or on surface of light soil in pans and sprinkle with sand, placing them in a temp. of 65° in March. When two or three leaves have formed transplant singly into pots, harden off in cold frame and plant out in May or June. Water in very hot weather. Sunniest position in the garden.

POT-MARIGOLD. *See* CALENDULA *officinalis*.

PRICKLY POPPY. *See* ARGEMONE *Mexicana*.

PRINCE'S FEATHER. *See* AMARANTHUS *hypocondriacus*; also POLYGONUM *orientale*.

PRISMATOCAR'PUS *pentagonius*. *See* SPECULARIA *pentagonia*.

PURPLE HORNED POPPY. *See* ROEMERIA.

PURPLE JACOBÆA. *See* SENECIO.

PURPLE SOUDANESE BEAN. *See* DOLICHOS.

PURPLE SWEET SULTAN. *See* CENTAUREA *moschata*.

PURSLANE SUN PLANT. *See* PORTULACA.

PYRAMID MULLEIN. *See* VERBASCUM *pyramidatum*.

PYRAMIDAL BELL-FLOWER. *See* CAMPANULA.

PYRE'THRUM—*Feverfew* (from Gr. *pyr*, fire, so called from the hot taste of the root). Nat. Ord. *Compositæ*.

The well-known golden-leaved Feverfew is

PYRETHRUM—*continued.*

usually treated as an annual, though really perennial. It is principally employed as an edging. There are several varieties. All grow about 1 ft. high, but are best kept pinched back and not allowed to flower.

P. Parthe'nium au'rea or *Golden Feather*. The flowers being of small account should be pinched off.

P. Parthe'nium cris'pum or *cristatum*, has curled foliage like parsley.

P. Parthe'nium lacinea'tum. Pretty fern - like foliage.

P. Parthe'nium selaginoi'des. Dwarf and compact with graceful serrated leaves.

Sow seeds in pans of light soil only just covered with soil, in temp. of 60°, in February and March. Transplant when three or four leaves form in boxes 1 in. each way. Plant out in June. Allow 3 or 4 ins. apart in the beds; or sow outdoors in April. If allowed to flower the plants seed themselves pretty freely.

QUEEN'S GILLIFLOWER. *See* HESPERIS.

QUEEN STOCK. *See* MATTHIOLA *incana*.

RAGGED LADY. *See* NIGELLA *damascena*.

RAGGED SAILOR. *See* POLYGONUM.

RAG-WEED. *See* SENECIO.

RAG-WORT. *See* SENECIO.



MIGNONETTE (*Reseda odorata*).

RED CAMOMILE. *See* ADONIS *autumnalis*.

RED MOROCCO. *See* ADONIS *autumnalis*.

RESE'DA—*Mignonette* (from L. *resedo*, to calm; because it was supposed to allay pain). Nat. Ord. *Resedaceæ*.

Mignonette is too well known to require much description. Its fragrance alone made it one of the most popular plants ever introduced. It is a native of the Mediterranean shores, both on the Italian and Spanish side, and also on the African.

The wild form, however, has been vastly improved since it became to be cultivated in 1752. In places it is perennial, but is invariably reared annually from seed, and the varieties come true to name. The principal distinction between these garden varieties consists as much in the habit of growth as in colour, that being usually red, yellow, or white, and not in any sense brilliant or showy. Some are more or less prostrate plants while others are erect growing, the most improved forms producing an abundance of immense pyramidal flower spikes. As a pot plant it is excellent, and for the London market large quantities are grown, chiefly the strain known as *Machet*.

R. odora'ta is the wild plant and the origin of all the improved garden varieties. 1752.

R. odora'ta Bismark is one of the latest productions. It is a robust plant with immense flowers, double the size of the market variety *Machet*, and deep red. Height 1 ft.

RESE'DA—continued.

- R. odora'ta Garaway's White* is much grown as a pot plant for winter and spring decoration. Height 1 ft.
- R. odora'ta Giant Crimson* or *Pyramida'lis*. A robust pyramidal plant with handsome spikes of reddish flowers. 1884.
- R. odora'ta Golden Gem*. A dwarf plant with yellow blooms. 6 ins. high.
- R. odora'ta Golden Machet*. A good variety in pots. Has strong spikes of yellow flowers and wrinkled leaves. Height 9 ins.
- R. odora'ta Golden Queen* is very distinct, the flowers being a decided yellow. Height 1 ft.
- R. odora'ta Goliath* produces immense flower spikes of a deep red, 7 ins. long. Height 1 ft.
- R. odora'ta Mile's Spiral* is an erect variety, excellent for pot-work.
- R. odora'ta Orange Queen*. Having a sturdy growth with rounded blooms, 2 ins. in diameter.
- R. odora'ta pyramidalis*. See *Giant Crimson*.
- R. odora'ta Victoria* has large heads of deep red. 9 ins. in height.

Sow the seeds $\frac{1}{4}$ in. deep in pans in March for summer flowering, pricking out singly into 3-in. pots and presently planting out 6 ins. apart; or in the open in March or April and thinning where necessary; or in August outdoors in mild localities for spring flowering. Should they survive the



THE PINK ROSETTE OR SWAN RIVER EVERLASTING (*Rhodanthe manglesii*).

RESE'DA—*continued*.

winter, they will make the finest plants. Apply liquid manure occasionally when in bloom.

RHODAN'THE (from Gr. *rhodon*, a rose, and *anthos*, a flower). Nat. Ord. *Compositæ*.

Pretty Australian annuals, but rather tender outdoors. A clump in the border is charming, while as pot plants they have few rivals among annuals. When cut and hung up to dry they are very useful for winter decoration, keeping their colour a long time, and may be included among the "everlastings." The flowers are silvery pink or white pendant on slender stems, and the foliage broad leaved, erect, and branching. About 12 or 14 ins. high. They flower in June and July.

R. atro-sanguin'ea has small deep crimson flowers.
W. Australia, 1861.

R. macula'ta has bright silvery pink flowers with a crimson inner circle and yellow centre, and is more branched than the above, and more hardy.

R. macula'ta alba is a white variety. N.-W. Australia.

R. Mangle'sii, *The Pink Rosette*, or *Swan River Everlasting*, has pretty rose-coloured flowers with yellow centres. W. Australia, 1833.
Syn., *Helip'terum Mangle'sii*.

R. Mangle'sii flor'e ple'no is a double form.

RHODAN'THE—*continued*.

Sow in pans $\frac{1}{8}$ in. deep in sandy soil in temp. 60° to 65° in March, harden off and put out in June in a warm sunny border, with a ball of earth attached to the roots, as they do not stand moving well.

RICINUS—*Palma Christi* and *Castor-Oil Plant* (from *L. ricinus*, a tick, in supposed resemblance of the seeds). Nat. Ord. *Euphorbiaceæ*.

This family is remarkable for its large and beautiful foliage, and is best used as a centre for a bed in conjunction with other large foliaged plants, thus forming a handsome group.

R. borbonien'sis has bronze-green foliage with reddish stems. Height 5 ft.

R. communis. Green foliage. Height 6 ft. E. Indies, 1548. Syns., *R. armatus* and *R. major*.

R. communis Gibson'i. Bronze-purple foliage and stems. Height 5 ft.

R. panormitanus. A recent hybrid. The foliage is covered with a bluish bloom, afterwards changing to dark red. Height 5 ft.

R. sanguineus. Leaves and stems at first reddish, changing to green, the ribs remaining red. Height 5 ft.

R. zanzibariensis. A very large plant with reddish-purple leaves and stems. Height 5 ft.

Ri'CINUS—*continued*.

Sow seeds $\frac{1}{2}$ in. deep in pots plunged in a brisk hotbed in February or March. The soil must be made firm. When large enough the seedlings must be potted up singly in 4-in. pots in sandy loam, leaf-mould, and a little rotted manure. They should then be kept in a warm moist temperature and given plenty of water. When the roots have filled the pots, remove them into 6-in. pots. Towards the end of May they can be placed in a cold frame and afterwards gradually inured to outdoor temperature. Plant out at the end of June in warm sheltered position in large holes specially dug and enriched. Mulch the surface in dry weather with manure, watering frequently.

ROCK CANDYTUFT. *See* *IBERIS coronaria*.

ROCK CRESS. *See* *ARABIS*.

ROCK LARKSPUR. *See* *DELPHINIUM AJACIS*.

ROCK PURSLANE. *See* *CALANDRINIA*.

ROCKET. *See* *HESPERIS*; *also* *DELPHINIUM*.

ROCKET CANDYTUFT. *See* *IBERIS coronaria*.

ROEME'RIA—*Purple Horned Poppy*, *Wind-Rose* (named after J. J. Roemer, a Swiss naturalist). Nat. Ord. *Papaveraceæ*.

R. hybrida. A pretty little dwarf plant of the Poppy family, native of the Mediterranean,

ROEME'RIA—*continued*.*R. hy'brida*—*continued*.

having dissected leaves and dainty violet-blue flowers on long stalks. Unfortunately they fall to pieces directly they are gathered. Height 1 ft. Syns., *R. refrac'ta* and *R. viola'cea*.

Sow outdoors $\frac{1}{8}$ in. deep in April in a sunny border, and thin out to 4 ins. apart.

ROSE OF HEAVEN. See *LYCHNIS cœli-rosa*.

ROSE OF PLYMOUTH. See *SABBATIA chloroides*.

ROUGH HONEYWORT. See *CERINTHE aspera*.

SABBA'TIA—*American Cent* (named after L. Sabbati, an Italian botanist). Nat. Ord. *Gentianaceæ*.

These are erect, unbranched biennials with five-petalled star-like flowers, disposed in loose cymes, all hailing from N. America. They are not commonly grown in this country, though fairly hardy. July is the month they flower.

S. angular'is. Known in America as Bitter Bloom; stems only 12 ins. high. The flowers are purplish-red and require a sheltered situation and partial shade. 1826.

S. campe'stris. Height 12 ins. Bears light rosy petals and yellow starred centre. It prefers an open dry place, and also makes an excellent pot plant. Texas, 1855.

S. chloroi'des, or *Rose of Plymouth*, is a bog-loving plant, and therefore must be planted in a very



SALPIGLOSSIS SINUATA.

SABBA'TIA—*continued*.

S. chloroides—*continued*.

moist soil. It is 12 ins. high and has large pink flowers, nearly 2 ins. across. A good pot plant, but must be stood in a saucer of water. 1817.

Sow in summer-time $\frac{1}{16}$ in. deep in good fibrous loam and sifted leaf-mould and a little sand where they are to grow, and thin out to 4 ins., or in pans with equal parts of sandy peat and leaf-mould. These should be placed in a pan or in saucers filled with water, placed in a cold frame. Transplant in pots singly in some compost, and keep in frame till March and plant out.

SAGE. See SALVIA.

SALPIGLOSSIS — *Tube-tongue* (from Gr. *salapinx*, a trumpet, and *glossa*, a tongue; having reference to the tongue-shaped style in the trumpet-shaped flower). Nat. Ord. *Solanaceæ*.

S. sinuata varia'bilis. One of the choicest and most dainty annuals grown, though somewhat tender. It makes quite a display when massed together in small beds, producing an abundance of graceful trumpet-shaped flowers, something like a *Petunia* but beautifully pencilled, on long, erect stalks. The colours are most delicate and variable, from the palest yellow to rose, carmine, deep scarlet, violet, and purple-brown, and veined with the richest velvety crimson, purple, or black. In nurserymen's

SALPIGLOSSIS—*continued.**S. sinuata varia'bilis*—*continued.*

catalogues it is distinguished by such names as *Emperor*, *Violet Queen*, *atropurpurea*, *grandiflora*, etc., but the best thing to do is to purchase a packet of mixed seed. These should be in flower in July, and grow about 2 ft. high. Chili, 1824.

S. integrifolia. See PETUNIA *violacea*.

Sow seeds in pans of light soil, only just sprinkling them over, in temp. of 65° to 75° in February or March. Transplant when leaves have formed $\frac{1}{2}$ in. apart in pots of loam and leaf-mould. In May begin to harden off in cold frame and plant out in June 6 ins. apart in a sunny situation.

SALVIA—*Sage* or *Clary* (from L. *salvo*, to save, from its supposed healing qualities). Nat. Ord. *Labiatae*.

Most of the Salvias are perennial, but a few are annual. Some of the former species are, however, very often and very easily grown from seed and treated as half-hardy annuals, and these are therefore included.

S. cardua'cea. A Californian annual species, very curious but little grown, though long known. From a rosette of Thistle-like leaves clothed with cottony down is produced a naked, erect stem about 1 ft. high. At the top of this grows a large green very prickly ball, which is gradually covered by pale mauve flowers with red anthers. When these have developed

SALVIA—continued.

S. cardua'cea—continued.

another spike is thrown up from the centre, and the same curious prickly ball and flowers repeated. It is a most interesting plant to watch grow potted-up for the conservatory.

S. coccin'ea, 18 ins. high, is a pretty plant when massed, having scarlet flowers in July. South America, 1772. There is a larger variety called *S. coccin'ea major*.

S. Gra'hami. Height $2\frac{1}{2}$ ft. Has brilliant carmine blooms. Mexico, 1829.

S. pa'tens is a well-known plant with exquisite true blue flowers, 2 to $2\frac{1}{2}$ ft. high, and should be grouped to look well. Mexico, 1838.

S. splen'dens is a magnificent plant and much used for bedding out, and during September is a blaze of scarlet. Height 3 ft. Mexico, 1822. There are some good garden forms of this. *Lord Fauntleroy* is a very brilliant flower. Height $1\frac{1}{2}$ ft. *Pride of Zurich* is the earliest and not quite so high as the last, and probably the best for bedding. They should be allowed 18 ins. apart.

S. Hom'inum Clary. A pretty annual though not a showy plant, about $1\frac{1}{2}$ ft. high, having deep purple terminal bracts which last a long time if placed in water. There is also a pink, a blue, and a white variety. South Europe,

SALVIA—*continued.*

S. Hom'inum Clary—*continued.*

1596. There is a good garden form of this called *Blue Beard*.

Sow the seeds of *S. carduacea* and *S. Hominum* $\frac{1}{8}$ in. deep outdoors where they are to grow in April, and thin to 8 ins. apart. Ordinary garden soil.

The others should be sown in January or February in heat, potted up singly and gradually hardened off, to be planted out in rich soil in June.

SAND VERBENA. See *ABRONIA umbellata*.

SANVITA'LIA (named after the Sanvitali family of Parma). Nat. Ord. *Compositæ*.

S. procumbens is a Mexican trailing annual, useful for rockeries and edgings, producing numerous small bright yellow flowers with a purply-brown centre.

There is also a double form known as *S. p. flor'e ple'no*, that is all yellow and far more showy than the single variety. It flowers from July till autumn.

Sow in autumn for spring flowering outdoors $\frac{1}{16}$ in. deep; or in spring in April, thinning the seedlings to 3 ins. apart.

SAPONA'RIA—*Soapwort* (from M.L. *sapo*, soap, in allusion to the juice which makes a lather when mixed with water). Nat. Ord. *Caryophyllaceæ*.



SCABIOSA.
Sweet Scabins.

SAPONA'RIA—*continued*.

These are humble little plants, but worthy of a place in the mixed border, flowering from July to September.

S. cala'bria is a dwarf trailing plant about 6 ins. high, having numerous small rosy flowers, exhibiting one unbroken mass of colour. From Calabria, 1830.

S. cala'bria alba is a white form of the above.

Scarlet Queen is a rich carmine garden variety.

Sow the seeds in lines or in masses $\frac{1}{8}$ in. deep in September for spring flowering, or in April for summer. Thin seedlings to 3 ins. apart. Water frequently in hot weather. Common soil.

SATIN FLOWER. See LUNARIA *biennis*.

SCABIO'SA—*Scabious, Sweet Scabious, Egyptian Rose, Mournful Widow, Pincushion Flower* (from L. *scabies*, a scab, itch. Said to cure the complaint). Nat. Ord. *Dipsacæ*.

The popular Sweet Scabious, with a few other species, is considered by some gardeners to be biennial, but it is just as well to raise it annually, as it flowers the same year as sown, though late in the summer. The name of Pincushion Flower is apt, as the shape of the flower has a distinct resemblance to that toilet article. The flowers are about $2\frac{1}{2}$ ins. across and borne on long naked stems, making them most suitable for vases and bouquets. There are double and single varieties,

SCABIO'SA—*continued.*

the former being perhaps a little clumsy looking, though many people admire them very much. It is advisable, if a bed of Sweet Scabious is desired, to purchase a mixed packet of seed. Natives of the Mediterranean district, 1629.

S. at'ro-purpur'ea. This is the type, the flowers of which are usually deep crimson. The garden forms may be summed up as follows:—

Black King. $2\frac{1}{2}$ ft. high. Very dark maroon.

Crimson King. $1\frac{1}{2}$ ft. high. Bright crimson.

Fairy. 2 ft. high. Lavender colour.

Snowball. 2 ft. high. Pure white, double flowers.

Yellow Prince or *Golden Yellow.* $2\frac{1}{2}$ ft. high. Bright yellow.

Tom Thumb and *Nana compacta* are dwarf forms of mixed colours, 12 ins. high, and very inferior to the taller kinds.

S. mari'tima, or *Sea Scabious*, 2 ft. high, is very much the same as the above species, having purple-crimson flowers.

S. stella'ta. 2 ft. high, with pink flowers. Spain, 1823.

Sow seeds $\frac{1}{16}$ in. deep outdoors in light soil in April, when they should flower towards the end of the summer; or in June or July to flower the following summer. Or again, if started in slight warmth in a shallow box in March, on a hotbed, they will begin to flower at the end of July.

SCARLET FLAX. *See* LINUM *grandiflorum rubrum*

SCARLET FLOWERED THISTLE. *See* CNICUS *conspicuus*.

SCARLET HORNED POPPY. *See* GLAUCIUM.

SCHIZAN'THUS—*Butterfly, Fringe or Cut-Flower* (from Gr. *schizo*, to cut, and *anthos*, a flower. Applied in reference to the deep-cut segment of its corolla). Nat. Ord. *Solanaceæ*.

Though somewhat tender annuals, they are nevertheless among the choicest that are grown, and as pot plants for the conservatory, have few equals as far as annuals are concerned. They are characterised by small brilliant coloured flowers with deeply cut petals curiously formed. The cultivated species have yielded a great number of various forms. One of the latest and best, *S. Wisetonen'sis*, well deserves the praise bestowed upon it. The rich coloured flowers are produced in massed abundance amongst fern-like foliage in successive crops till September, and is a beautiful pot plant for the conservatory. Chili, South America.

S. pinna'tus. $1\frac{1}{2}$ to $2\frac{1}{2}$ ft. high. The flowers are rosy purple and yellow, spotted. 1822.

Of this there are several varieties, namely :—

S. pinna'tus atropurpu'rea. $1\frac{1}{2}$ feet high. Colours, deep purple with dark eye.

S. pinna'tus papiliond'ceus pyramida'lis. $1\frac{1}{2}$ ft. high. Purple shading to crimson, spotted and laced.

SCHIZAN'THUS—*continued*.

- S. pinna'tus Priest'i* (or *Ni'veus*), 1½ ft. high, has white blooms.
- S. Tom Thumb* is a dwarfer variety, with purple and black flowers.
- S. por'rigens*, 2 ft. high, is very similar to *S. pinnatus*, but is somewhat spreading in growth and has larger blooms. 1822.
- S. retu'sus, The Notched Fringe Flower*. 2 ft. high. An erect-growing, but more tender species, and, except under very favourable conditions, more suited to the greenhouse. The colours are deep rose and orange with brownish-crimson tips, 1831.
- S. retu'sus al'bus* is a white and orange form. 1 ft. high.
- S. retu'sus Gra'hami*, 2 ft. high, is rose and orange. 1831.
- S. retu'sus Gra'hami carmin'eus* is crimson and white.
- S. retu'sus Gra'hami na'nus* is dwarf, with flowers of scarlet.
- S. retu'sus Gra'hami ni'veus*. A new variety which is entirely white.
- S. Hook'eri*. 2 ft. high. Pale rose and yellow. 1828.
- S. Wisetonen'sis*. 1½ ft. high. The flowers of this form are almost white with brilliant yellow and rose eye marked with bronzy-brown



THE NOTCHED FRINGE FLOWER (*Schizanthus retusus*).

SCHIZAN'THUS—*continued*.*S. Wisetonen'sis*—*continued*.

figuring. This is a fine annual for pots in the conservatory. It is only in light sandy soils it blooms freely in the open.

Sow seeds thinly, and cover lightly in pans of sandy soil, placed in temp. of 65° in February or March. Transplant young plants when 1 in. high, four in a 3-in. pot, harden off gradually by placing in a cold frame, and put out in bed in May; or sow in August and keep under glass in cold frame till May following. They may also be sown in the open in April. The soil outdoors should be light and rich and the position cool and sheltered, while it is particularly requisite that they be kept moist, or else the plants will be dried up by the sun. Plants for flowering in the conservatory in April and May are sown in August and September, and keep in a cold frame all winter, using 6 in.-pots. Give plenty of ventilation whenever possible.

SCHIZOPE'TALON (Gr. *schizo*, to cut, and *petalon*, a petal).
Nat. Ord. *Cruciferæ*.

S. Wal'keri is a half-hardy Chilian annual, about 1½ ft. high, with numerous sweet scented white incised or fringed flowers on slender stalks. From May to August. 1822.

Sow in pans, only just sprinkling the seeds over, on a slight hotbed in February and March, prick out and harden off in cold frame, transplanting in May with a ball of earth, as they dislike having

SCHIZOPE'TALON—*continued.*

their roots disturbed. Or the seeds can be sown outdoors in April or May in a warm, sunny border, when they will flower in July and August. Or if sown in autumn indoors and the plants grown on during winter they bloom early in summer.

SCYPHAN'THUS—*Cup Flower* (from Gr. *skuphos*, a cup, and *anthos*, a flower). Nat. Ord. *Loasaceæ*.

S. elegans. A hardy twining annual from Chili, useful for covering a trellis or pergola pole. It will reach 6 or 8 ft. in a season. The foliage is fern-like and graceful, though somewhat sticky to the touch, the leaves being deeply cut and of a glaucous hue. The bright yellow cup-shaped flowers, spotted with red inside and slightly spurred, are borne in the axils of the branches in great number from July to October. Introduced, 1824. Syn., *Grammatocar'pus volu'bilis*.

Sow in pans or pots, slightly cover with light soil, and plunge in hotbed. Prick off when quite young singly into pots of rich soil, harden off in cold frame gradually, and plant out in May. Give rich light soil in a sunny position.

SEA SCABIOUS. *See* SCABIOSA *maritima*.

SEA LAVENDER. *See* STATICE.

SEA-SIDE POPPY. *See* GLAUCIUM *luteum*.

SENECIL'LUS. A diminutive of SENECIO (which see).



CUP FLOWER (*Seyphanthus elegans*).



JACOBÆA (*Senecio elegans*). Double and single.



See p. 234.] SPHENOGYNE SPECIOSA.

SENE'CIO—*Groundsel*, *Jacobæa*, *Purple Jacobæa*, *Rag-weed* and *Ragwort* (from L. *senex*, an old man, so called in allusion to the receptacle which is naked and resembles a bald head). Nat. Ord. *Compositæ*.

S. e'legans, called by ancient botanists, *Flos sancti Jacobi*, or the *Flower of St James*, is an old-fashioned annual, though not a very hardy one, being a native of S. Africa, albeit it cannot be said to be delicate. It is easily raised by the help of a little artificial heat, and even outdoors if not sown too early. There are several varieties both double and single, varying from white to violet or crimson. The flowers are not large, about 1 in. across, but they are numerous and last from July to October. A bed of mixed sorts looks uncommonly pretty. They grow about 18 ins. or more high, but there is a dwarf strain known as *nana*, about half the height. Introduced about 1700.

S. e'legans al'bo has white single blooms.

S. e'legans ple'vius-al'bo. Double white.

S. e'legans ple'vius ru'ber is double crimson.

S. e'legans pompon'icus is a garden form having many shades and colours, from white, rose, copper colour, crimson, and purple.

Sow seeds $\frac{1}{8}$ in. deep in patches outdoors in April where they are to grow, thinning out to 5 or 6 ins. apart; or sow in pans in February or March in temp. of 60°, and plant out in May.

SHEEP'S-BIT SCABIOUS. *See* JASIONE *montana*.

SHIRLEY POPPY. *See* PAPAVER RHÆAS.

SIBERIAN PURSLANE. *See* CLAYTONIA *siberica*.

SIKKIM POPPY. *See* MECONOPSIS *simplicifolia*.

SILE'NE—*Catchfly* (from L. *Silenus*, a Gr. mythological deity). Nat. Ord. *Caryophyllaceæ*.

S. pen'dula ro'sea is a well-known dwarf annual species belonging to a large family, most of which are perennial. It is useful for spring bedding, borders, or rockwork, and planted close together makes a capital carpet plant, as it is literally one mass of pink bloom. 6 ins. high. Sicily, 1731. There are numerous improved garden varieties, namely:—

S. pen'dula fl. pl. has double rose flowers. 6 ins. high.

S. pen'dula al'ba has white flowers. 6 ins. high.

S. pen'dula compacta is a bushy plant with rose-coloured flowers. 6 ins. high.

S. pen'dula compacta al'ba has white flowers. 6 ins. high.

S. pen'dula ruber'rima, the flowers of which are purplish-red. 6 ins. high.

S. pen'dula ruber'rima fl. pl. is a double-flowered variety of the above.

Sow the seeds $\frac{1}{8}$ in. deep outdoors in August or September, thinning out or transplanting the seedlings to 3 ins. apart, and plant out to flowering

SILE'NE—*continued*.

quarters the following March, 6 ins. apart, to bloom in May and June. Or sow in April and transplant to flowering positions in May for later summer flowering.

SOAPWORT. *See* SAPONARIA.

SPECULA'RIA — *Venus's Looking Glass* (from the L. *Speculum Veneris*, or Venus's looking-glass, from the resemblance of the flowers to the ancient Greek round mirror with a straight handle). Nat. Ord. *Campanulaceæ*.

These annuals being similar to Campanulas are sometimes classed with them. They are all about 1 ft. in height with a spreading habit, having bell-shaped flowers and very suitable for rockeries and banks. They usually seed themselves when once established.

S. spec'ulum is quite hardy and a good old-fashioned plant. It has quantities of bell-shaped flowers of a violet-blue colour and very showy. S. Europe, 1596. Syn., *Campan'ula spec'ulum*.

S. spec'ulum grandiflor'um is the improved garden form, a larger flowered kind. 9 ins. high.

S. spec'ulum grandiflor'um al'bum is a white variety.

S. spec'ulum grandiflor'um fl. pl. is double flowered.

S. pentago'nia. The flowers are larger than the former, but it is not quite such a profuse bloomer. The colour is purple with a deep blue centre. From Levant, 1686. Syns.,

SPECULA'RIA—continued.

S. pentago'nia—continued.

Campan'ula pentago'nia and *Prismatocar'pus pentago'nus*.

S. perfo'liata is another blue-flowered variety. From N. America, 1680. Syn., *Prismatocar'pus perfolia'tas*.

Sow the seeds $\frac{1}{16}$ in. deep in patches in autumn where they are to grow, and they should flower early in May till July.

SPHE'NOGYNE—(from Gr. *sphen*, a wedge, and *gune*, female, in allusion to the shape of the pistil of the flower). Nat. Ord. *Compositæ*.

S. specio'sa is an extremely elegant long-stalked flower, about 1 ft. high, reminding one of *Coreopsis*. It is always yellow, but varies a little from pale canary colour to quite an apricot shade. The centre is a rich brown with a small touch of black at the base of each petal, forming a conspicuous ring round the centre. Native of S. Africa, 1836.

S. specio'sa au'rea is similar, except for a bright yellow centre instead of brown. 1836. Syn., *Ursi'nia pul'chra*.

S. anthemoi'des is little grown. It differs from *S. speciosa* in having purple on the reverse side of the petals instead of yellow. S. Africa, 1774. Syns., *Ursin'ia anthemoi'des* and *Arcto'tis anthemoi'des*.

SPHE'NOGYNE—*continued.*

Sow seed $\frac{1}{16}$ in. deep in pans of light soil during February or March in temp. 60°. Prick off when 1 in. high to 2 ins. apart, and keep in cold frame till May or June, when they can be planted outdoors in a sunny position. Or sow outdoors in April and thin to 4 ins. apart.

STAR GLORY. *See* IPOMÆA.

STA'TICE—*Sea Lavender* (from Gr. *statike*, an astringent herb). Nat. Ord. *Plumbaginæe*.

This genus is mostly made up of perennials, but there are a few annuals and biennials worth noticing.

The flowers are quite small, but borne in numbers on long stiff stalks, very dry and "papery" to the touch. They may be cut and kept a very long time, and may be considered as among the "Everlastings." The flower stems are tall, but the foliage is more or less prostrate. They are best planted in the mixed border with a little peat.

S. Bonduelli is a half-hardy biennial, requiring protection during winter, with bright yellow flowers in June. 1 ft. high. N. Africa, 1859.

S. sinua'ta has spikes of rosy flowers and varieties of several colours. 1 ft. high. August. Levant, 1629.

STA'TICE—*continued.*

S. sinua'ta hy'brida is a plant of various colours.
1 ft. high.

S. spica'ta has long spikes of rose and white flowers in July. Caucasus, 1819. Syn., *S. candala'brum*.

S. Suword'wi is the best of all the annual species. Above the foliage rise the much-branched flower spikes. 2 to 3 ft. high, with bright rose florets. Turkestan, 1883. Best sown in autumn and kept in a cool greenhouse or frame during winter. An excellent pot plant.

S. Thou'i'ni is 1 ft. high. With blue flowers in August. N. Africa, 1700.

Sow seeds in pans of light soil and only just cover them and place in a temp. of 60° in February or March. Transplant in other pans, harden off in a cold frame, and plant out in May.

STEEPLE BELL FLOWER. *See* CAMPANULA *pyramidalis*.

STOCK. *See* MATTHIOLA.

STOCK GILLIFLOWER. *See* MATTHIOLA *annua*.

SUN-FLOWER. *See* HELIANTHUS *annuus*.

SUN-PLANT. *See* PORTULACA.

SWAN RIVER-DAISY. *See* BRACHYCOME.

SWAN RIVER EVERLASTING. *See* RHODANTHE *Manglesi*.

SWEET JOHNS. *See* DIANTHUS *barbatus*.

SWEET PEA. *See* LATHYRUS *odoratus*.



1. AFRICAN MARIGOLD (*Tagetes erecta*).

2. FRENCH MARIGOLDS (*Tagetes patula*).

3. *TAGETES SIGNATA*.

SWEET ROCKET. *See* HESPERIS.

SWEET SCABIOUS. *See* SCABIOSA.

SWEET SULTAN. *See* CENTAUREA.

SWEET WILLIAM. *See* DIANTHUS *barbatus*.

TAGE'TES (from L. *Tages*, an Etruscan deity, generally represented as a handsome youth). Nat. Ord. *Compositæ*.

This genus includes the so-called African and French Marigolds. As cut flowers they are not popular on account of their disagreeable odour, but in the flower border, the African Marigolds in particular, strike a note of gaudy colouring, especially if grown in a mass, unsurpassed by any other flower. For this reason care should be taken not to overplant it, otherwise the effect is likely to look vulgar. These plants stand drought well, a great thing in their favour. The African Marigold grows a considerable height, a fact to be considered when planting out. *T. signata*, being dwarf, is usually used as an edging.

The reason for the terms African and French Marigolds is difficult to determine, but it appears probable that the seeds were first imported to France, though all are natives of Mexico.

T. erecta. *The African Marigold* is a vigorous, erect-growing plant, about 3 ft. high, producing both double and single blooms of large size from deep orange to pale sulphur yellow. Introduced 1596.

TAGETUS—*continued.*

T. patula, *The French Marigold*, of which there are many varieties, some being mottled and others striped yellow and chestnut brown. There are single and double forms too, the plants spreading as they grow and producing an immense quantity of flowers, about 12 to 18 ins. high. 1573. Recent improvements have made them more compact and bushy, and the variety, well known as *Legion of Honour*, is about the best to select, striped yellow and brown single flowers. The forms, called in catalogues *nana*, differ only in being very dwarf and compact.

T. signata is a distinct dwarf species, 9 ins. high, exceedingly bright and pretty. It is allied to *T. patula*, but the flowers are much smaller and very numerous, almost screening the foliage. The colour is lemon-yellow with a scarlet blotch at the base of each petal.

T. signata pumila is a pigmy form of the type. As a border edging it is most useful.

Sow seeds $\frac{1}{16}$ in. deep in pans or shallow boxes of light soil in temp. 60° in March. Transplant the seedlings, when two or three leaves show, in other boxes, harden off gradually in cold frame, and plant out in June. Or sow outdoors at the end of April and thin out, the African Marigolds in groups about 18 ins. apart, and the French Marigolds about 1 ft. apart. Dwarf varieties may be planted or thinned out to 6 ins. apart.

TANGIER PEA. *See* LATHYRUS *tingitanus*.

TASSEL FLOWER. *See* CACALIA.

THELESPER'MA *filifo'lium*. *See* COREOPSIS *filifolia*.

TEN-WEEK STOCK. *See* MATTHIOLA.

THISTLE, formerly also *Thissle*. *See* CARDUUS, CHAMOEPEUCE, and CNICUS.

THORN APPLE. *See* DATURA *fastuosa*.

THUNBER'GIA (called after Carl Thunberg, the Swedish botanist). Nat. Ord. *Acanthaceæ*.

T. ala'ta, sometimes called Black-eyed Susan, is a pretty South African climber, best treated as a half-hardy annual. It is suitable for low trellises, verandah posts, or such like places, and requires a sheltered, sunny position. It will grow 4 or 5 ft. in a season, the flowers being a buff colour with a dark purple centre, from July to August. 1823. There are a few varieties as follows :—

T. ala'ta al'ba, having white flowers with blackish eye. Madagascar.

T. ala'ta auranti'aca has buff-orange blooms with dark maroon centre.

T. ala'ta Dodd'si. With orange flowers and deep purple eye, the foliage variegated. 1848.

T. ala'ta Fry'eri. Orange with white eye.

Sow the seeds $\frac{1}{16}$ in. deep in light soil in a pan in temp. 65° to 70° in February or March. When

THUNBER'GIA—*continued.*

the seedlings are large enough to handle put each one in a pot singly, gradually harden off, and pot out at the end of May or beginning of June in the sunniest and most sheltered spot in the garden. It may be used in window boxes to hang down in front. Water frequently, occasionally with weak liquid manure.

TICKSEED. *See* COREOPSIS.

TIDY-TIPS. *See* LAYIA ELEGANS.

TOAD FLAX. *See* LINARIA.

TOBACCO PLANT. *See* NICOTIANA.

TOLMEYERS. *See* DIANTHUS *barbatus*.

TOUCH-ME-NOT. *See* IMPATIENS.

TRACHYMENE *cœrulea*. *See* DIDISCUS *cœrulea*.

TREE MALLOW. *See* LAVATERA *arborea*.

TREE PRIMROSE. *See* CENOTHERA *biennis*.

TROPÆ'OLUM—*Nasturtium* (from Gr. *tropaion*, signifying a trophy, from the leaf which is supposed to resemble a shield, and the flower a helmet), Nat. Ord. *Geraneaceæ*.

The popularity of the *Nasturtiums* as garden plants is universal, as they seldom disappoint, and seem to be as much at home in a poor soil as in a rich, and in sunshine or shade, and quickly return interest on the outlay. There are tall-growing climbing varieties and dwarf bushy ones. These



CANARY CREEPER (*Tropaeolum aduncum*).

TROPÆOLUM—*continued*.

latter are effective as edgings to beds, being neat and compact and profuse bloomers, coming quickly into flower, and keep up a display the whole summer. The climbing kinds can be put to all sorts of purposes, such as covering trellis work, or verandah posts, or any ugly object that it is desired to conceal. A temporary hedge, for instance, can easily be made by giving them the support of a row of pea-sticks to ramble over. All are natives of S. America.

T. aduncum is the well-known *Fringed Canary Flower*, *Canary Creeper*, or *Canary-bird Flower*. As a rapid annual climber in sun or shade it stands probably unrivalled, and can always be depended upon to produce a constant display of elegant pale yellow flowers throughout the summer. Its exact habitat appears uncertain, as it is found from Chili to Mexico. 1810. Syns., *T. peregrinum* and *T. canarien'se*.

T. canarien'se. See *T. aduncum*.

T. lobbia'num. This is another tall-growing Nasturtium, having much larger flowers than the former. It is easily distinguished by the hairiness of the foliage which *T. majus*, though very similar in other respects, is without. The flowers are very varied, but are usually yellow or orange, crimson or scarlet, or a mixture of these. 1843. *Golden Queen* is a good strain

TROPÆOLUM—*continued.**T. lobbia'num*—*continued.*

with bright golden flowers. *Lilliput* has distinctly smaller flowers, and vary, some being spotted. *E'legans*, or *Crystal Palace Scarlet*, is orange-scarlet. *Ful'gens* has scarlet flowers and very dark leaves. *Napoleon III.* is yellow with brown spots. *Spitfire* has vermilion flowers and purplish-green leaves.

There is a new form called *hederæfolium* or *Ivy-leaved*, the foliage of which resembles the Ivy in shape, the scarlet or orange flowers being rather small, but graceful. Introduced 1843.

T. ma'jus, the typical *Nasturtium* or *Indian Cress*, is the smooth foliaged variety. In other respects it is like *T. Lobbianum*, and of equally vigorous growth, attaining 6 to 8 ins. in the season. The colours vary in the same way from deep crimson, scarlet, orange, and yellow to almost white, some with markings on them, others whole coloured. Peru, 1686.

T. mi'nus or *na'num* and *Tom Thumb* forms are dwarf little bushes, which come into flower very soon after planting, and are consequently very popular. The colours vary greatly, as in the tall-growing kinds, and are given separate names in seedsmen's catalogues; one of the best known is *Coccin'eum fo'lius au'reus*, which has scarlet flowers and golden-green foliage; while

TROPÆ'OLUM—*continued.*

T. mi'nus or *na'num*—*continued.*

Ruby King, a pretty "bedder," has scarlet flowers and dark foliage. A novelty is *Queen of Tom Thumbs*, crimson flowers and silver variegated foliage.

T. peregr'i'num. See *T. aduncum.*

Sow 2 ins. deep in April where required to grow. If the soil be made too rich they will produce an excess of foliage to the detriment of the flowers. Frequently where the seed has been shed in autumn the plants will come up the following year without further trouble.

TUBE-TONGUE. See SALPIGLOSSIS.

TULIP POPPY. See PAPAVER *glaucum.*

TURTLE-HEAD. See CHELONE.

URSÍ'NIA *anthemoi'des.* See SPHENOGYNE *anthemoides.*

UNICORN PLANT. See MARTYNIA *lutea.*

VENICE MALLOW. See HIBISCUS *trionum.*

VENÍ'DIUM (derivation unknown). Nat. Ord. *Compositæ.*

These are all brilliant flowers, and most effective for a small bed.

V. calendula'ceum is always treated as a half-hardy annual in this country, though in its native country of South Africa it is perennial. It has very showy bright orange-yellow flowers with dark brown centre, about 1 ft. high,

VENI'DIUM—*continued.**V. calendula'ceum*—*continued.*

reminding one of a marigold, and quite as large. The foliage is a light greyish-green colour covered with woolly hairs, 18 ins. high, and spreading. A small bed of this in a sunny situation is most effective, remaining in flower from June till autumn, though it never expands in wet weather. It is sometimes described in catalogues as a species of *Arctotis*. 1752. Syn., *Arcto'tis calendula'ceum*.

V. ful'gax is very similar, but a trifle taller, a brighter orange and blacker disc. S. Africa, 1887.

V. hirsu'tum is a very woolly plant, otherwise it differs very little from the others in the flower. South Africa, 1887. Syn., *V. specio'sum*.

Sow seeds $\frac{1}{16}$ in. deep in boxes of light soil in temp. of 60° in March or April. Plant out 1 ft. apart at the end of May or in June, in soil that has not been heavily manured, otherwise it runs to leave at the expense of the flowers.

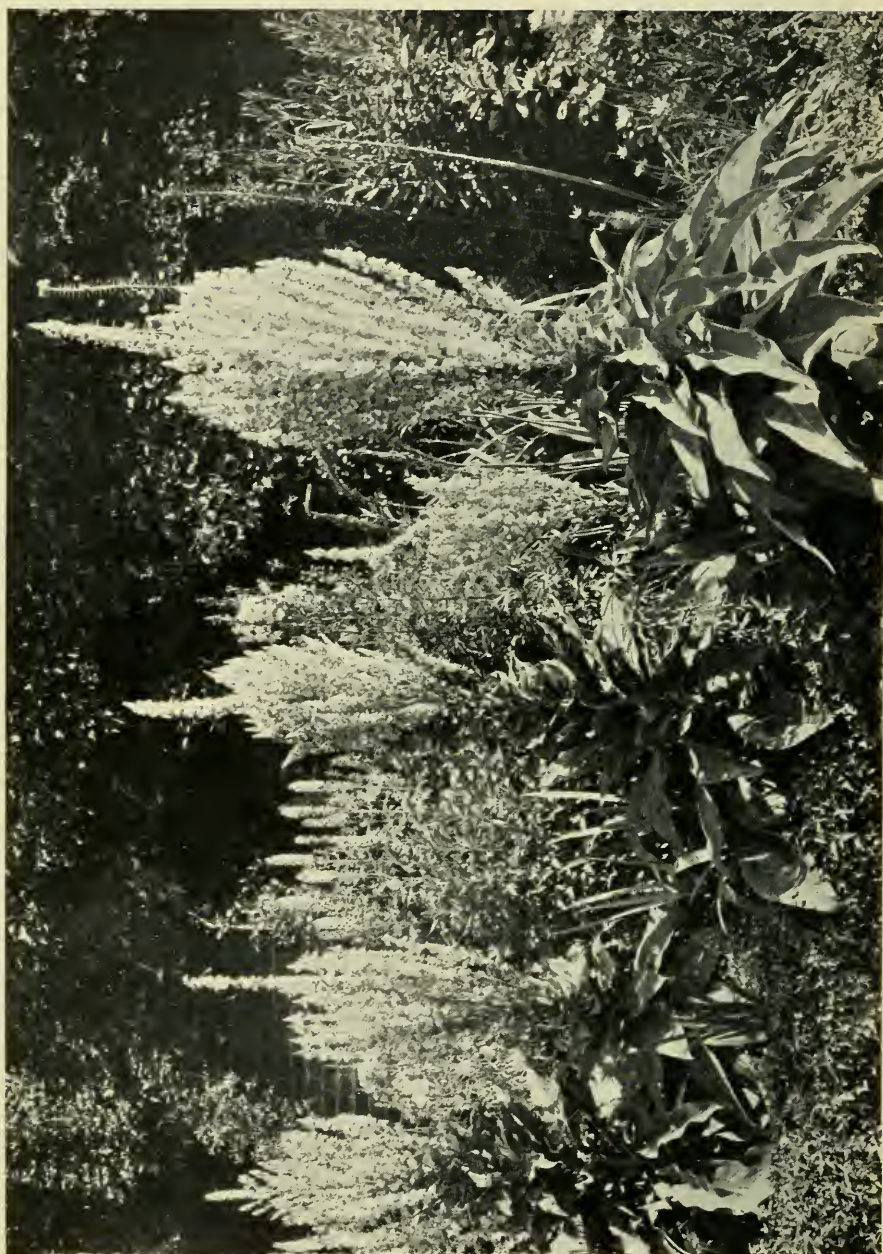
VENUS'S LOOKING GLASS. *See* SPECULARIA.

VENUS'S NAVELWORT. *See* OMPHALODES *linifolia*.

VERBAS'CUM—*Mullein* or *Mullen* (from L. *verbascum*, mullein, or, as some say, the word was *barbascum*, from L. *barba*, a beard, but was altered to the present name). Nat. Ord. *Scrophulariaceæ*.



VENIDIUM CALENDULACEUM.



[Kindly lent by Miss Wilmott and the Editor of "The Garden,"

VERBASCUM OLYMPICUM.

[To face p. 245.

VERBAS'CUM—*continued*.

The Mulleins are exceedingly handsome plants, and most of the species are, when well grown, as stately and tall as the Hollyhock. The boldness of a group of these plants should be seen to be appreciated, and in a wild garden with a dark background look most striking. They are also most effective at the back of the border with such things as Hollyhocks, Foxgloves, and Delphiniums. Another way to utilise them is on a loose stone retaining wall or the summit of a rockery, for, like the Foxglove and Snapdragon, it is quite at home in such quarters. The branched spikes of bloom are heavily laden with hundreds of flowers. The larger kinds require plenty of room, and 3 ft. apart is not too much. With the exception of *V. Boerhaa'vi*, which is annual, all those mentioned here are of biennial duration.

V. Boerhaa'vi, 2 ft. high, is a yellow flowered species from S. Europe, 1731.

V. Caledonia is a distinct hybrid plant with buff flowers suffused with crimson. June to August.

V. longifo'lium, 3 ft. high, with yellow flowers, is a Neapolitan species. 1824.

V. lyra'tum. See *CELSIA cretica*.

V. olym'picum. This is one of the grandest of the family, a truly noble plant, attaining 6 to 10 ft., with enormous spikes of sulphur flowers, the silvery woolly foliage forming a large

VERBAS'CUM—*continued*.*V. olym'picum*—*continued*.

rosette near the ground. July to August.
Levant, 1883.

V. panno'sum is another species, 7 ft. high, with large downy silvery-green foliage and bright yellow flowers, but not as good as the next mentioned one. July to August. S. Bulgaria.

V. phlomo'i'des is one of the great Mulleins, attaining to 10 ft. in good soil. The flowers are yellow, coming out one after the other in quick succession throughout the summer. July to August. S. Europe.

V. pyramida'tum, the *Pyramid Mullein* is a handsome plant with tall bright yellow flower spikes, much branched, 3 ft. high, and distinctive crimped foliage. Caucasus, 1804.

Sow the seeds $\frac{1}{8}$ in. deep in an open sunny spot outdoors in the reserve garden in August, and transplant the seedlings to their flowering quarters about October. Or sow where required and thin out. *V. Boerhaavi* being an annual may be sown outdoors in March, and will flower the same year. Verbascums are not fastidious as to soil, but prefer it well dug and manured.

VERBE'NA—*Vervain* (L. *verbena*, a green-bough). Nat. Ord. *Verbenaceæ*.

The charming garden Verbenas, so much prized for bedding-out, are a hybrid cross between several



VERVAIN (*Verbena*).

VERBE'NA—*continued.*

perennial species of this family. They are usually treated as half-hardy annuals and raised each year from seed, unless particular colours are required to be increased, when cuttings are taken and kept under glass through the winter. But they come fairly true when sown, and seedlings are less liable to disease and mildew (to which they are very subject) than those taken from cuttings. At the time of planting out the little branches should be pegged down close to the ground. Few plants stand heavy storms of rain better than Verbenas, and this is a consideration, as the beds are rarely spoilt from this cause. The colours of the clustered flowers range from pure white to pale pink, rose, carmine, and purple, with often different shades in the centres, though yellow is a colour which is not represented by this group. The profusion of blooms is astonishing and continues all the autumn. Nurserymen's catalogues give fancy names to the different varieties, but it is best to mention the colours wanted on ordering seed, or to get a mixed assortment.

The seeds should be sown $\frac{1}{16}$ in. deep at the end of January or in February in pans of light soil, loam, leaf-mould, and sand, placed in a temp. of 60° . The seedlings should be transplanted when two or three leaves have formed into $2\frac{1}{2}$ -in. pots, and soon after placed close to the glass in a slightly lower temperature. When fairly established they should be potted up singly into large pots. In May or

VERBE'NA—*continued.*

beginning of June they will be ready for planting out in beds in the open, 12 ins. apart, where they will not be long in producing flowers. These beds should be in a sunny position, previously enriched with plenty of manure. In hot weather they may be watered freely.

VERVAIN. *See* VERBENA.

VI'OLA—*Pansy, Hearts-ease* (from *L. viola*, violet).
Nat. Ord. *Violaceae*.

V. tri'color, the pansy, although perennial, is often raised annually from seed for bedding out. For this purpose it is a great favourite, not only for the beautiful rich colours and markings it possesses, but also because of the long period through which it blooms. In fact there is scarcely a month when a Pansy may not be seen in flower, for even at the beginning of the year some "odd little faces" will appear to herald in the spring.

The garden Pansy is extremely variable, being the outcome of continued development and hybridisation of several wild species, and to increase any particular colour or markings resort must be had to cuttings placed under hand-lights or frames. Plants raised from seed, although they may not all come true to colour, are however more hardy, while those from cuttings will often wither off suddenly for no apparent rhyme or reason.

VI'OLA—*continued.*

There are several well-recognised classes of Pansy, viz. :—The *Fancy Pansy*, or *Belgian* as it is sometimes called. The *Show* or *English Pansy*, and the *Viola*, *Scotch* or *Tufted Pansy*. The *Fancy Pansy* has almost superseded the old-fashioned *Show* variety. The blooms are much larger and the petals broader, while the colours and markings differ very much, including yellows, purples, blues, claret or mulberry, and brown, with sometimes wavy, frilled, or crimped edges.

The *Show Pansy*, on the other hand, is small and round and stiffer in appearance, the colours, although blotched with black or dark velvety purple, consist of not more than two shades. The habit of both is to spread over the ground, especially in old plants, in rather an untidy manner, but this is contrary to the manner of the *Tufted Pansies*. These make superb beds, are very free-flowering, compact, and hardy, while the colours give an infinite variety from lavender to rich purple and yellow, mostly “selfs” and rayless, or nearly so. There is a French strain chiefly remarkable for its size and coarseness, called *Trimardeau*, with three large blotches on the petals.

A very fine Pansy and somewhat new is known as *Masterpiece*, the dark violet petals, edged with yellow, being very much frilled and curled.

VIOLA—*continued*.

Sow the seeds $\frac{1}{8}$ in. deep and 12 ins. apart in pans of light soil, leaf-mould, and sand, and place in a cool shaded frame, in July or August. When the leaves show, pot each one singly (if they cannot be planted out at once) and keep in the open air through the winter. In very wet weather another pot may be inverted over each one to keep a little of it off. The following spring they should be planted out, disturbing the roots as little as possible, into well-manured beds.

VIOLET CRESS. *See* IONOPSIDIUM.

VIRGINIAN STOCK. *See* MALCOLMIA *maritima*.

VISCA'RIA. *See* LYCHNIS.

WAIT'ZIA—(named after M. Waitz). Nat. Ord. *Compositæ*.

Tender annuals from Australia having that peculiar keeping quality when plucked and dried that distinguishes the "Everlastings," making it useful for winter decoration. They may be planted out in groups in the mixed border, when they will flower in August to October. All are about 18 ins. in height.

W. acuminata has purple flowers. There is also a yellow variety.

W. aurea is known by its bright golden yellow flowers. 1836.

W. aurea grandiflora is a larger flower form of *W. aurea* and the best one to grow.

WAIT'ZIA—*continued*.

W. corymbo'sa has white and purple blooms. From the Swan River, W. Australia, 1864.

W. ni'vea is white. 1836. Syn., *Mor'na ni'vea*.

Sow the seeds $\frac{1}{8}$ in. deep in pans in sandy soil in temp. 60° in March or April. Keep in cold frame to harden off when a few leaves show, when they will be ready to plant out in June. Position should be as sunny as possible.

WALL CRESS. See ARABIS.

WALL FLOWER. See CHEIRANTHUS.

WALL GILLIFLOWER. See CHEIRANTHUS.

WALLICH'S BLUE-POPPY. See MECONOPSIS *Wallichii*.

WELSH POPPY. See MECONOPSIS *cambrica*.

WESTERN WALL-FLOWER. See ERYSIMUM *arkansanum*.

WHITLAVIA *grandiflora*. See PHACELIA *grandiflora*.

WIND ROSE. See ROEMERIA.

WINGED EVERLASTING. See AMMOBIUM.

WINTER PURSLANE. See CLAYTONIA *perfoliata*.

WOODRUFF. See ASPERULA.

XANTHIS'MA *texa'num*. See CENTAURIDIUM.

XERAN'THEMUM—*Everlasting, Immortelle* (from Gr. *xeros*, dry, and *anthemon*, flower, so called from its dry, papery flowers). Nat. Ord. *Compositæ*.

XERAN'THEMUM—*continued.*

X. an'nuum is a good plant for the mixed border, where it is best sown in clumps. There are a few varieties all about $1\frac{1}{2}$ to 2 ft. high, erect and branched. The rosette-like flowers, when plucked and dried retaining their colour a very long while. Native of S. Europe, 1570.

X. an'nuum al'bum has white flowers. There is also a double white form.

X. an'nuum imperia'le. Dark violet.

X. an'nuum plen'is'simum. Double dark purple.

X. an'nuum superbis'simum. Double purple.

X. an'nuum Tom Thumb is a compact dwarf variety.

Sow seeds $\frac{1}{16}$ in. deep in pans or pots of sandy soil in March in temp. 60° , and plant out in June in a sunny border ; or sow outdoors in April.

YELLOW HORNED POPPY. *See GLAUCEUM luteum.*

YELLOW SWEET SULTAN. *See CENTAUREA suaveolens.*

YELLOW THISTLE. *See ARGEMONE mexicana.*

YOUTH-AND-OLD-AGE. *See ZINNIA.*

ZALUZIAN'SKYA. *See NYCTERINIA.*

ZE'A—*Indian Corn, Maize* or *Mealies* (from Gr. *zea*, a sort of fodder for horses). Nat. Ord. *Graminaceæ*.

Z. Ma'ys is used in this country only as an ornamental grass, but in America and other countries grows to immense size, when the fruits are used for commercial purposes, as

ZE'A—continued.

Z. Ma'ys—continued.

Maize, Indian Corn, or Mealies. The garden variegated forms are very handsome when suitably employed in bedding out. It has a tall, unbranched, robust growth about 3 or 4 ft. high in this country, but attains far greater dimensions in sub-tropical countries. Its native home is very doubtful, but it is supposed to be America, though never found in a wild state nowadays. Introduced 1562.

Z. Cara'gua is a giant Maize with bright green leaves. 10 ft. high. Chili, 1824.

Z. gracil'lima is a good variety for bedding out; only about 3 to 4 ft. high.

Z. gracil'lima variega'ta has a variegated foliage.

Z. gigan'tea variega'ta is a monster grass, 6 to 10 ft. high, the leaves striped with white.

Z. pu'mila zebri'na. A beautifully variegated grass, about 3 ft. high.

Z. japon'ica gigan'tea grand'i'color. A majestic variegated plant with striped leaves of deep green striped with pale yellow, cream, and rose. 5 ft. high. Japan, 1867.

Z. japon'ica variega'ta is a graceful foliaged plant, 4 ft. high, having leaves striped green and white.

Sow the seeds $\frac{1}{2}$ in. deep in pots of light rich soil in March or April, placed in a temp. of about

ZE'A—*continued*.

65°. When 2 ins. high transfer singly into 2-in. pots and place in a cool frame to gradually harden off, finally exposing them to the open air. By June the seedlings will be ready to plant out. Give a rich soil and water freely. The variegation is not shown in the first batch of leaves, but appears later.

ZIN'NIA—*Youth-and-Old-Age* (named after Dr J. G. Zinn, a German botanist). Nat. Ord *Compositæ*.

What Zinnias lack in grace and elegance they certainly make up for in brilliancy and diversity of colour, and though only half-hardy there are few annuals more popular for bedding out purposes. The taller kinds, having long stalks and lasting well in water when cut, are in great request for flower-vase arrangements. Coming from Mexico and Texas they of course revel in sunshine and cannot endure a degree of frost, so that they must not be hurried out into the open until all chance of that is over. They look best massed together in a bed or in groups in the mixed border, and being erect and strong stemmed are not easily damaged by sudden storms.

Double Zinnias are deserving of particular notice, not only for the variety and splendour of their colours, but also for their size. It has earned its quaint name of *Youth-and-Old-Age* from its rigid and lasting rays and continued production of disk-flowers, but it is not a name much used now.

Z. elegans, 1½ to 2 ft. high, is an erect and branched plant having single flowers about 2



ZINNIA ELEGANS.

ZIN'NIA—*continued*.*Z. elegans*—*continued*.

ins. across of various gay colours, identified in some catalogues by separate names, viz. : *al'ba*, with white flowers ; *au'rea*, golden ; *coccinea*, red or crimson ; *purpur'ea* or *viola'cea*, violet or mauve ; and *sulphu'rea*, pale yellow. 1796.

Z. elegans fl. pl. A double form of the first mentioned plant with as many others. Another variety has double striped flowers of numerous colours, 1 ft. high.

Z. elegans fl. pl. cris'pa has the petals of the flowers, which are double, twisted, curled, and crested in a fantastic way. All colours.

Z. elegans pu'mila fl. pl. is a dwarf strain with double flowers, 12 to 15 ins. in height.

Z. elegans grandiflor'a. $2\frac{1}{2}$ to 3 ft. high, with very large double blooms, 2 to 3 ins. across.

Z. elegans Haagea'na imbrica'ta, 1 ft. high, has single flowers of brilliant yellow striped with orange, not so large as *Z. elegans* and its varieties. Central America (?) 1862. There is also a double-flowered variety of *Z. Haageana*. Syn., *Z. Mexica'na*.

Z. elegans Darwi'ni is a beautiful hybrid with double flowers of various hues.

Z. lined'ris has single deep yellow flowers, about $1\frac{1}{2}$ ft. high.

Z. Lorenz's Miniature, or *Pompon*, the smallest of all the cultivated strains, very sturdy, and embracing a great number of colours.

ZIN'NIA—*continued.*

Z. Mexica'na. Same as *Z. Haageana fl. pl.*

Z. tenuiflor'a is an old-fashioned Zinnia, 2 ft. high, with characteristic narrow petals of brilliant red, but less bold in appearance than the more recent garden hybrids. Mexico, 1799.

Sow the seeds $\frac{1}{16}$ in. deep in April in pans or pots of light soil placed in a temp. of about 60°. When three leaves have formed, transplant the seedlings 3 ins. apart in pots of light soil placed close to the glass till well established. Beware of letting them get pot-bound, and if necessary move into a larger sized pot. Harden off gradually in cold frame till the end of May or middle of June, according to the state of the weather, by which time they may be planted out in the open.

The ground should have been previously well dug and manured, otherwise the result will be disappointing, and the flowers poor. The taller varieties require about 10 ins. apart each way, the dwarf rather less.

Select a sunny situation and water well in dry weather, occasionally supplying the plants with a little liquid manure, when the flowers first make their appearance.

Seeds may also be sown outdoors in May with success. Put three or four seeds in at intervals of 10 ins., and thin out all but one in each group, as soon as three leaves appear.

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