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FAMILIAR GARDEN FLOWERS

7

FIGURED BY

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SHIRLEY HIBBERD

“In every flower that blooms around,
Some pleasing emblem we may trace :
Young love is in the myrtle found,
And memory in the pansy's grace
Peace in the olive branch we see,
Hope in the half-shut iris glows,
In the bright laurel victory,
And lovely woman in the rose.”

Fourth Series

WITH COLOURED PLATES

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PREFACE.



ANOTHER bouquet! Yes, there are four seasons at least in the year, and from the proper flowery point of view as many seasons as days, nay, as hours; for Nature rests not, and every moment witnesses a new creation of life and beauty. We must have another bouquet, and again perhaps another. And if we stay our course in the Fifth Series it will be because our hands are weary, not because the garden is exhausted; for we have but made a beginning even now in collecting the emblems of blessedness with which we are engirt. The commonness of the subjects figured and discoursed upon in these pages will commend them more forcibly to discreet souls than would any possible rarity and remoteness. The blue sky and the green earth cannot be monopolised; they mix with our breath and blood and every-day thoughts, and the poorest take their share from the same exhaustless fountains as the wealthy. We will not, indeed, speak disdainfully of the curiosities Queen Flora keeps in her cabinet; but we claim for our "familiar" flowers that their true value is to be found in their plentifulness, accessibility, and close association with our customs, pastimes, and the whole of our daily life, in all which the rarities from far-off lands have no part, and, therefore, touch no homely feeling or tender sentiment.

"Sweet is all the land about and all the flowers that blow."

And the story of their sweetness is chiefly what concerns us here.

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SYNOPSIS.



BERBERIS, or **BARBERRY**, has its name from the Arabic *berberys*, which probably means a gooseberry. The English name is from the French. N.O., *Berberidaceæ*. LINNÆAN: 6, *Hexandria*; 1, *Monogynia*.

—The plants of this order are herbs or shrubs, with alternate, simple or divided leaves, flowers yellow or white, regular, and usually with sensitive stamens that spring to the centre and discharge their pollen on the stigma when the filaments are touched at the base with a pin. The berberries and their relatives are widely distributed, generally in the temperate regions; they are partial to cool moist climates, and are mountainous plants in regions where the plains and valleys are too warm for them.

p. 1.

LILIUM.—See synopsis.

p. 5.

ERYTHRONIUM, from *erythros*, red, in allusion to the colour of the flowers and leaves of the species first discovered. N.O., *Liliaceæ*. LINNÆAN: 6, *Hexandria*; 1, *Monogynia*.

p. 9.

PASSIFLORA, the Passion Flower, from *passio*, suffering, and *flor*, a flower. N.O., *Passifloraceæ*, or Passionworts. LINNÆAN: 16, *Monadelphia*; 2, *Pentandria*.—A noble order of herbaceous or half-shrubby plants, mostly tropical, climbing, with alternate leaves and hermaphrodite flowers of peculiar construction and often distinguished by resplendent colouring. The conspicuous outer portion of the flower of the passiflora, which, at a first glance, may be regarded as the corolla, is really the calyx, but being coloured, it may for a time deceive one. The narrow petals that form a ring of rays constitute the true corolla. In some species, as, for example, *Passiflora actinia*, the petals are furnished with a series of threads. The stamens and stigmas are conspicuous in the centre and declare themselves as such. The order includes not only the true passion flowers, but the tacsonias and some less distinctive genera. The best known of all these is Tacsonia Van Volxemi, a grand greenhouse climber producing crimson flowers. Amongst the passifloras the best known is *P. carulea*, a hardy plant in all the southern

parts of this country, and much grown in the suburbs of London. *P. quadrangularis*, or granadilla, produces a large fruit, full of an agreeable yellowish pulp that is eaten with wine and sugar in Jamaica. *P. edulis* also produces an edible fruit. The possessor of a spacious stove house may find much to interest him in the cultivation of passifloras, but for general purposes the common blue-flowered hardy species is sufficient. p. 13.

DEUTZIA, named after J. Deutz, a respectable citizen of Amsterdam, is a member of the N.O., *Philadelphaceæ*, or Syringas. LINNÆAN: 10, *Decandria*; 3, *Trigynia*.—The Deutzias and philadelphias are so nearly related that it is rather for convenience than for definite technical reasons that they are separated. They are deciduous shrubs, with white or pink flowers which come near to myrtle blooms in general character, but it may also be said that they are not far removed in some of their characters from the saxifragas and escallonias. The representative species are scattered over the south of Europe, North America, Japan and India. In the arts they have scarcely acquired a place, although the rough leaves of *Deutzia scabra* are used in Japan by polishers, probably on account of a deposit of silica. The flowers of our mock orange (*Philadelphus coronarius*) have been employed for adulterating oil of jasmine, although the odour of the mock orange is coarse compared with that of jasmine. p. 17

CLEMATIS, from *klema*, a vine or climber. From the same root we have in Dutch, *climbop*, the ivy, a very picturesque though strictly classic name. N.O., *Ranunculaceæ*. LINNÆAN: 13, *Polyandria*; 6, *Polygynia*.—The clematis section of crow-foots stands far apart in all its prominent characters from the buttercups and anemones that are classed in the same order. It agrees with them in the possession of an acrid juice which produces inflammation when applied to the skin, and if taken internally is irritant and may prove fatally poisonous. In the buttercup we see the leaves placed alternately, and their bases sheathe the stem; in the clematis the leaves are opposite, and do not sheathe the stem. In the insertion of the stamens on the receptacle all the members of this order agree. A large proportion of the species of clematis are climbing shrubs of temperate climes, a few are herbaceous, and all are ornamental, even our wilding of the hedgerows, the traveller's joy, or *Clematis vitalba*, being extremely elegant, if not so showy as the exotic species that are now so much cultivated. p. 21.

KERRIA, named after M. Kerr, formerly superintendent of the Botanical Gardens, Ceylon. N.O. *Rosaceæ*. LINNÆAN: 12, *Icosandria*; 3, *Trigynia*.—The nearest alliance of *Kerria* is with spiræa. See under "Rosa," synopsis. p. 25.

HELICHRYSUM, from *helios*, the sun, and *chrysos*, gold; the familiar name "everlasting" is explained by the dry chaffy texture of the

flowers, which renders them so well adapted for use, when dried, in winter bouquets. Once more we are carried into the heart of the great aster family, or N.O., *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 2, *Superflua*.—The alliance of helichrysum is with aphelexis. p. 29.

MUSK, from the Arabic *musch*, the name of an animal from which a perfumed substance is obtained, probably the Muntjak (*Cervus moschatus*). N.O., *Scrophulariaceæ*. LINNÆAN: 14, *Didynamia*; 2, *Angiosperma*.—For summary see “Mimulus.” p. 33.

NARCISSUS, named in honour of Narcissus, a youth beloved by Echo. The story will be found in the third book of Ovid’s “Metamorphoses.” It is by no means certain that the flower now known as the narcissus is that which Ovid had in view when he described the nymphs as looking in the water for the corpse of the hapless youth, but

“Only found
A rising stalk with yellow blossoms crown’d.”

It is, perhaps, a matter of very small importance, but it has been suggested that the narcissus is not an aquatic plant, and that the narthecium answers fairly to the conditions and the description, and may really be the narcissus of the fable. N.O., *Amaryllidaceæ*. LINNÆAN: 6, *Hexandria*; 1, *Monogynia*.—This is an interesting order, and should be carefully studied, more especially as to the points in which it agrees or differs with *Liliaceæ*, for grave mistakes are made by lovers of plants in determining the relations of members of these orders. All the Amaryllids are herbaceous perennials, and the majority have bulbous roots, but this is not a constant character. The leaves are sword-shaped; the flowers are hermaphrodite, with six divisions, the stamens six, the ovary three-celled, the fruit a three-celled capsule. In the narcissus will be seen a striking departure from the simple structure of the flower of a true amaryllis. The tube or corona in the centre of the flower has greatly perplexed the botanists, many of whom regard it as composed of confluent stamens. In the lovely eucharis, which may be called the Daffodil of the Amazons, we have a similar structure, and the same problem as to its origin. The amaryllids are scattered pretty freely about the world, both in temperate and tropical climates; they are mostly acrid in their properties, and not a few of them are decidedly poisonous. On the other hand, although the lilies are in some cases acrid and dangerous, very many of them are useful as food and medicinal plants, which is not often the case with amaryllids. In this order we have in addition to the narcissus, which is so acrid that cattle never eat it, the snowdrop, snowflake, nerine, crinum, paneratium, hippeastrum, agave, and vallota, all much-prized garden plants. p. 37.

WINTER HEATH. The *Erica* derives its name from *erico*, to break, in allusion to the brittle nature of the wood. N.O., *Ericaceæ*. LINNÆAN:

8, *Octandria*; 1, *Monogynia*.—This great order is very clearly defined in its leading characters; it furnishes but few “useful” plants, but comprises many of the most beautiful that are known to us. They are shrubs and undershrubs; none are strictly herbaceous; nearly all are evergreen, the exceptions to this rule being for that reason conspicuous. The flowers vary much in form, but are usually composed of a four or five cleft calyx and a four or five cleft corolla, which is tubular or campanulate, rarely fully expanded, even in the rhododendrons, but in the heaths is distinctly tubular or pouched. The order comprises the ericas, rhododendrons, azaleas, kalmias, gaultherias, arbutus, andromedas, clethras, and meuziesias—names suggestive of the liberal contributions to the garden of the Ericaceæ. The bilberries come near to the heaths, but differ in the situation of the ovary; and the epacrids also come near, but differ in the character of the anthers. The gaultheria produces an edible berry, and the fruit of the arbutus may be said to be edible, though few human palates can relish it as do the thrushes and blackbirds.

p. 41.

MAGNOLIA, named in honour of Professor Magnol, of Montpellier. N.O., *Magnoliaceæ*. LINNÆAN: 13, *Polyandria*; 6, *Polygynia*.—In this grand order are many fine trees and shrubs, with alternate coriaceous leaves and flowers, mostly three-divided, the fruit consisting of numerous carpels, often collected in a cone upon a lengthened axis. Amongst the allies of the magnolia occur the winter barks, the tulip trees, the famous aromadendron of Java, and the curious trochodendron, which has neither calyx nor corolla.

p. 45.

SIEBOLD'S PRIMROSE differs from the typical primrose in some important particulars, and comes nearest to *Primula cortusoides*.

p. 49.

ALPINE WALLFLOWER illustrates in a very pleasing manner the characteristics of the cruciferous or brassicaceous family of plants.

p. 53.

LAMIUM, from *lamos*, the throat, the form of the corolla suggesting the name, as the “lips” suggest the term *labiate*, as generally descriptive. N.O., *Lamiaceæ*. LINNÆAN: 14, *Dialymania*; 1, *Gymnospermiæ*.—The dead-nettles represent a fragrant family, for amongst the labiates occur the balm, sage, thyme, mint, lavender, marjoram, and other spicy herbs. The features are characteristic; they have square stems, opposite leaves, labiate or two-lipped flowers, a four-lobed ovary, and four stamens, two of which are longer than the others. Not a single poisonous plant is known in the order; many of them are valued for their refreshing and stimulating properties, and have considerable commercial importance in consequence.

p. 57.

CONVOLVULUS, from Lat. *convolvere*, to entwine. N.O., *Convolvulaceæ*. LINNÆAN: 5, *Pentandria*; 1, *Monogynia*.—Herbs, shrubs, and

trees, all of them monopetalous exogenous plants, with bell-shaped flowers. opening or contracting beneath the influence of light, a plaited æstivation of the corolla, five stamens, and a fruit with two or three cells, in which one or two ovules stand erect. The embryo is crumpled up in the midst of very firm albumen. The common bindweeds of the hedges, the *Ipomœa* and *Convolvuli* of the garden, offer illustrations of the ordinary state of this order, the species of which have purgative roots; and in the case of scammony, yielded by *Convolvulus Scammonia*, and of jalap, produced by various species of *Ipomœa*, are of great medicinal importance. Occasionally the purgative principle is so much diffused among the fœcula of the root as to be almost inappreciable, as is the case in the *Convolvulus Batatas*, or sweet potato of America, which was the forerunner of the common potato, and gave it its name, and which is still cultivated in the south of Spain and France. p. 61.

OLEANDER, or NERIUM. By the term *Oleander* we are to understand a flowering olive. *Nerium* is from *neros*, humid, in reference to the marshy and riverside habitats of the plants. N.O., *Apocynaceæ*. LINNÆAN: 5, *Pentandria*; 1, *Monogynia*.—This order comprehends a series of trees and shrubs which have leaves opposite or in threes, regular flowers with calyx and corolla five-cleft and five stamens; fruit sometimes a double berry. They are mostly found in tropical and warm temperate climates, but are in this country represented by the humble periwinkle (*Vinca*). Many of them possess an acrid, milky juice, which is virulently poisonous; the oleander is an especial example of this. In this order occur the beautiful allamanda, the caranda plum, the deadly ordeal tree of Madagascar, the celebrated cow-tree of Demerara, and the Indian hemp. p. 65.

SNOWY CROWFOOT is a ranunculus all over, and agrees, without any exception, with the essential features of the *Ranunculaceæ*, which have been made note of in a former synopsis. p. 69.

HYACINTH is named from the beautiful youth who was killed by Zephyrus, and by Apollo was changed into a flower, in which his curling hair is still traceable. N.O., *Liliacæ*. p. 73.

HELIOTROPIUM, from *helios*, the sun, and *tropè*, turning. N.O., *Ehretiaceæ*. LINNÆAN: 3, *Triandria*; 1, *Monogynia*.—This is a small order, comprising herbs, trees, and shrubs, with a harsh pubescence; the leaves simple, the flowers gyrate, the corolla in one piece. The nearest alliance is with the borageworts, and therefore the resemblance of the flowers of the heliotrope to those of the myosotis is not an accident, but has a scientific significance. Most of the chretials are tropical, and occur in both hemispheres. p. 77.

LYCHNIS, from *lychnos*, a lamp, in allusion to the colour of the flowers. N.O., *Caryophyllaceæ*. LINNÆAN: 10, *Decandria*; 4, *Pentagynia*.

—As a near relative of the pink, carnation, and silene, the *lychnis* sustains the honours of the family by producing brilliant flowers. All the members of this order are herbaceous plants, or sub-shrubby: none of them are trees in any proper sense of the word. We have had clove carnations ten years old with stems as hard as flint, and as thick as a large man's thumb; but it is not often any of the pink tribe attain to so mature a condition. One of their constant characters is the jointed and forked growth of the stems; another is the simple form of the leaves, which are opposite, and often unite and clasp the stem. The flowers are usually hermaphrodite, consisting of five sepals and five petals; the stamens equal in number to the petals, or double; styles thread-like, bearing the stigmas on their internal surface; fruit a one-celled capsule. In this order occur, in addition to the plants already named, the *cerastium*, *spargula*, *saponaria*, and *gypsophila*. They are for the most part useless, and also for the most part harmless. It is often stated that the clove of the spice-box is the produce of a caryophyllaceous plant; but that is a mistake arising out of the name *Caryophyllus aromaticus*. This is a member of the family of myrtles. It is the spicy odour of the carnation that obtains for it the specific name *Caryophyllus*; but the two "cloves" are in the natural system separated by as many as ninety-four orders.

p. 81.

POLEMONIUM, from *polemos*, war; and thereby hangs a tale for which reference must be made to Pliny. N.O., *Polemoniaceæ*. LINNÆAN: 5, *Pentandria*; 1, *Monogynia*.—For characters of the order see under "Phlox."

p. 85.

NARCISSUS.—See *ante*.

p. 89.

CYTISUS is a geographical name derived from *Cythus*, one of the Cyclades, where one of the species was found. N.O., *Fabaceæ*, or leguminous plants. LINNÆAN: 16, *Monadelphus*; 6, *Decandria*.

p. 93.

GRAPE HYACINTH differs from common hyacinth in trivial features only. The name *muscaris* is derived from *moschos*, musk, in allusion to the odour the flowers emit. The term "grape" is appropriate to the appearance of the flowers, for they might often be mistaken for berries, owing to the exceeding shallowness of the lobes of the perianth. The essential characters are the same as in other liliaceous plants.

p. 97.

DOUBLE BUTTERCUP illustrates the vagaries of the *Ranunculaceæ*, and suggests that certain of them have long been under the influence of man, who may be said in the present day to care but little about them. The study of the structure of a buttercup flower, whether single or double, but single more especially, is a proper first step to the acquisition of the structure of flowers in general.

p. 101.

PRIMULA.—See “*Polyanthus*.” p. 105.

SCILLA —See “*Lilium*.” p. 109.

DIANTHUS, from *dios*, divine, and *anthos*, flower, the divine flower, or flower of the gods. N.O., *Caryophyllaceæ*. LINNÆAN: 10, *Decandria*; 4, *Pentagynia*.—A sketch of the essentials of the order will be found under “*Lychnis*”; the genera number 53, and the species 1,055, in Lindley’s estimate. It is interesting to make note of the characters of those that lie far apart from the dianthus, as the silene, saponaria, spergula, and arenaria. A cerastium, for example, is a member of the order, and so also is a stellaria, or chickweed. But the relations are easily recognised in the opposite and entire leaves on stems with tumid nodes, and the general fashion of the flower. The nearest alliance of the caryophyllaceous plants is with the purslanes, which have unsymmetrical flowers. p. 113.

CALCEOLARIA, from *calceolus*, a slipper, the shape of the flower suggesting the name. N.O., *Scrophulariaceæ*, or Figworts. LINNÆAN: 2, *Diandria*; 1, *Monogynia*.—The plants of this order are herbs or shrubs, varying in leafage and in the disposition of the flowers. The calyx remains after the corolla has fallen; the latter is irregular, variable, and sometimes two-lipped. The fruit is a two-celled capsule, usually of a dry nature, but occasionally somewhat fleshy, opening variously. The order is of great extent, and one of the most difficult to study in detail. Many of the species have a stigma composed of two plates, one placed next the back and the other next the front of the flower. When the corolla first expands, these plates stand apart, but when touched they collapse suddenly and with some force. A good type flower of the order is the foxglove; the calceolaria is also strongly typical; but *salpiglossis*, which is included in the order, illustrates the borderland where it appears to merge into the nightshades. The English garden is rich in plants of the figwort family, for it includes not only the plants above mentioned, but also the *schizanthus*, *verbascum*, *antirrhinum*, *pentstemon*, *mimulus*, and many others. It is poor in plants of utility, and the few that are of service to man are mostly of an acrid or bitter quality, and employed rather as medicines than as food. A pasture herb called *Melampyrum pratense* is reputed to be serviceable, not only in promoting the richness of milk, but also as contributing to the butter a fine yellow colour. The calceolaria which we so prize for the adornment of the greenhouse with its splendid flowers is valued in Chili because of the colouring property of its roots, which are employed in dyeing woollen cloths crimson. p. 117.

AGERATUM, from a combination of *a*, the privative, and *geras*, old, meaning a plant ever young, in allusion to the fact that the flowers do not change colour with age. N.O., Composites, or *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 1, *Æqualis*.—See sketch under “*Aster*.” p. 121.

WISTARIA takes its name from Professor Wistar, the American botanist. *Glycine* is from *glykys*, sweet, and reminds one of glycerine, the sweet principle that is pressed out of various oils and fats in certain manufacturing processes. N.O. *Fabaceæ*, leguminous plants, or *Papilionaceæ*. LINNÆAN: 17, *Diadelphia*; 4, *Decandria*.—This beautiful tree is sometimes called the purple laburnum, but as we have a true laburnum with purple flowers, the name is scarcely allowable. p. 125.

ARUM, from the Egyptian *arou*, the ancient name of the plant. N.O., *Araceæ* or Arads. LINNÆAN: 21, *Monœcia*; 9, *Polyandria*.—The plants of this order are easily recognised both by their leaves and flowers. They are always herbaceous, many are of lowly stature, as the "lords and ladies" of the hedgerow; others are rampant climbers, as the philodendron of the tropics, which clambers over trees and displays huge leaves and aerial roots high in the air amongst the branches. The sheathing of the leaves is a leading character, but a more striking sign of the order is the inflorescence, which consists of a spathe enclosing a spadix on which the several flowers are situated. In the plate the spathe is the "lily" proper, a mere expansion of the flower-stem, and within it is seen the tip of the spadix which bears two sorts of flowers, those at the base being fruitful, those above supplying the fertilising pollen from their stamens. Calyx and corolla are unknown in this order, but the spathe or "floral leaf" is often very conspicuous and characteristic. Although a very acrid and often dangerous race of plants, they contribute in a material degree to the service of man. The cuckoo pint or arum of the hedgerow is the source of the starchy substance known as Portland sago, and the roots of several tropical species are cooked as yams. They are, however, dangerous, and to chew one leaf of the common cuckoo pint will be to insure excruciating pains and some degree of danger. The porcupines of the Cape eat the roots of the trumpet lily, but they are so acrid that man can make no use of them. p. 129.

TROPÆOLUM, from *tropaion*, a trophy, N.O., *Tropœolacæ*. LINNÆAN: 8, *Octandria*; 1, *Monogynia*.—The plants belonging to this order are smooth, tender, and herbaceous, with diffuse or twining stems, and alternate petiolate peltate leaves; the flowers are irregular, axillary, and solitary, the calyx has five sepals, the upper one with a long distinct spur; the petals are unequal and irregular, the two upper are sessile and remote, arising from the throat of the calyx, the three lower stalked, and smaller, sometimes abortive; the stamens, eight in number, perigynous, the filaments distinct; the anthers minute, erect, two-celled, dehiscing longitudinally; ovary consisting of three carpels; style one, stigma three, acute; ovules solitary pendulous; the fruit is indehiscent, separating into three pieces which surround a common axis; the seeds are large, having no albumen, and filled with the embryo, the cotyledons of which are thick and consolidated together into a single body; the radicle lies within the projections of

the cotyledons. The relationship of the tropaeolums to the geraniums is extremely close, and we may imagine the nectariferous tube of the pelargonium to be a modification of the spur of the Indian cress in a position confluent with the pedicel. p. 133.

GLOXINIA, named after P. B. Gloxin, a botanist, of Cobuar. N.O., *Gesneriaceæ*. LINNÆAN: 14, *Didymantia*; 2, *Angiosperma*.—See under "Achimenes." p. 137.

SAXIFRAGA, from Lat. *saxum*, a stone, and *frango*, to break, in allusion to certain supposed medical properties. But as these plants often grow amongst rocks, and their expanding and ramifying roots tend to rend them asunder, the name may quite as fitly represent their occasional occupation as stone-breakers. N.O., *Saxifragaceæ*. LINNÆAN: 10, *Decandria*; 2, *Digynia*.—This order comprises herbs, shrubs, and trees. Leaves alternate or opposite, sometimes in whorls; flowers hermaphrodite, regular; calyx usually with five lobes, which are sometimes united and adherent to the ovary; corolla of five petals; stamens five or ten, inserted with the petals on the tube of the calyx; fruit a capsule, many-seeded, often terminated with two small horns. A small order, comprising the exquisitely beautiful family of saxifrages, the hydrangea, chrysosplenium, and heuchera. The very common and much-admired *Astilbe Japonica*, commonly called "Spiræa Japonica," is a member of the saxifrage family, and is therefore not a spiræa, for all the true spiræas are allied to the family of roses. p. 141.

HAWKWEED, or **HIERACIUM**. The familiar name is explained in the description at page 57. The botanical name bears the same mysterious relation to the employment of the plant in aid of the eyesight.—See under "Aster." p. 145.

ADONIS, named in remembrance of Adonis, son of Cynaras. N.O., *Ranunculaceæ*. LINNÆAN: 13, *Polyandria*; 6, *Polygynia*.—See under "Aconitum," synopsis. p. 149.

DOUBLE STOCK.—See under "Wallflower." p. 153.

DAISY, from *dagges-eye*, the day's-eye, or eye of the day. This etymology is sometimes regarded as fanciful, but it is adopted by all authorities, and is justified by reference to Chaucer and the earlier Saxon vocabularies. Richardson and Skeat both favour it, the latter remarking, "from the sun-like appearance of the flower." The lines in Chaucer's Prologue to the "Legend of Good Women" exactly suit for dictionary purposes. He says:—

"Well by reason men it call may
The *deisie*, or els the *eye* of the *day*."

In the synopsis will be found under "Aster" the characters of the great

family of composite flowers to which the daisy belongs. Its place in the vast series is with the erigeron or stenactis, in which the ray florets are in several series. The seeds of the daisy are not furnished with a downy 'sail to carry them abroad, and the receptacle is conical. The botanical name, *Bellis perennis*, does not need to be explained, but its appropriateness is so pleasing as to have a poetical significance. It is truly a perennial beauty, and it is a matter for regret that it is but rarely seen in its proper beauty as a garden flower.

p. 157.





EVERGREEN BARBERRY.

FAMILIAR GARDEN FLOWERS.



EVERGREEN BARBERRY.

Berberis aquifolia.



B

BARBERRIES are properly arranged in two groups—those with simple leaves, which are called “Berberis” proper, and those with pinnate leaves, which are called Mahonias. The useful hardy shrub now before us may therefore be labelled *Mahonia aquifolia* with propriety, but it is the fashion to regard both sections as in the genus *Berberis*, which otherwise is well defined, and gives but little trouble. There is no better known evergreen shrub than this, and there are not many so useful. As a hedge tree it

is certainly surpassed by the holly; but an admirable way of displaying it is to plant a line in front of a holly hedge, in which position it appears to acquire beauties peculiar to the situation. The ample glossy green leafage becomes richly tinted with shades of scarlet, chocolate, and bronze in

winter, and these colours are strikingly brought out with the rich relieving background of deep green holly. But this berberis is equally useful for grouping in masses, and may be used in various combinations to enrich the garden in the winter months. There is in cultivation a beautiful dwarf variety, called *Undulata nova*, with wavy leaves of a lovely tone of green in summer, and very brightly variegated with shades of red in winter. This we have employed with advantage to form groups, having associated it with such shrubs as variegated hollies, *Coloneaster Simmondsii*, the green-leaved female aucuba, Darwin's berberis, and the berry-bearing *Skimmia Japonica*. On our cold clay soil these were quite happy, and made rich masses with abundant fresh colouring at all seasons of the year. A groundwork of the emerald-green ivy completed the arrangement, and gave harmonising colour to the whole.

Berberis is admirably adapted for growing in collections, and on this system has often been peculiarly useful in forming an attractive feature of a garden. We had once a set of beds on a spacious side lawn that was partially shaded with trees, these beds being devoted to shrubs of this genus only. For centres of beds we had *B. Beali* and its near relative *B. Japonica*, with *B. fascicularis hybrida*. In large groups around them were *B. stenophylla*, *B. Darwini*, and *B. dulcis*. In the outer parts of the groups were the smaller *B. Hookeri*, *B. glumacea*, *B. repens*, and *B. empetrifolia*. Such groups may be lighted up with a few gladioli, and *Tropaeolum speciosum* may be allowed to ramble but not to run riot amongst the shrubs.

The deciduous species are not adapted for such groups: their proper place is in the shrubbery borders. The most interesting of them are *B. Asiatica*, with brilliant green

leafage, and *B. vulgaris*, very showy when laden with scarlet fruit. Of the last-named there are varieties with white fruit, yellow fruit, and purple leaves.

A few fine species are a little tender, and require in gardens near London some amount of shelter, although in the western counties they can hold their own. The principal of these are *B. Nepalensis*, in the way of *B. Japonica*, and *B. trifoliata*, a most beautiful curiosity. It may be described as a horny shrub, with leaves that are very spiny and of various shades of purple and bronzy green. *B. Fortunei* is a peculiar-looking shrub of rigid habit, the colour a bluish tone of green.

A near relative of the berberis is the Chilian shrub, *Berberidopsis corallina*. It is a half-climbing plant, with large, simple, spiny-toothed leaves, and handsome drooping racemes of crimson flowers. This is scarcely hardy, yet a little comfortable shelter suffices for it in the neighbourhood of London.

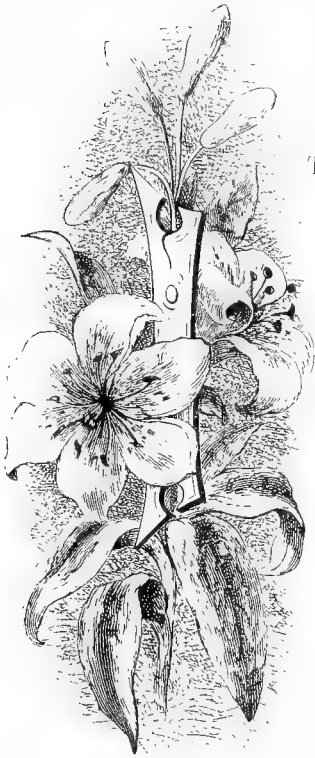
The queen of the group is Darwin's berberis (*B. Darwini*), and it constitutes a bright memorial of the great naturalist. It is a native of Southern Chili. It loves a moist climate and a peaty soil, but is so hardy and accommodating that it may be said to grow anywhere. It is of dense habit, forming many slender decumbent branches, with spiny leaves in bundles of four and five, of a beautiful green colour, and glossy. Early in the spring it shows a profusion of orange-yellow flowers, that glitter in the sunshine like a shower of gold. It will sometimes flower freely from April to June, and again in August and September, but the spring bloom we can always insure; and that is so cheerful and abundant that if there is no autumnal bloom we cannot with reason complain.

As remarked above, a peaty soil suits the berberis, but they are not particular. *B. aquifolia* will thrive on clay, but is happier on a rich, well-drained loam. Where peat is not at hand for a plantation any good loam will answer, and, if there is any choice, it should be a decidedly sandy loam. As the shrubs ripen berries in plenty there is no difficulty in raising plants from seed. But most of them may be easily propagated in the same way as hollies by taking cuttings of the young wood in autumn, and planting in a frame. In many instances suckers from the roots may be removed to make plants. The beautiful variety of *B. aquifolia* called *Undulata nova* we can only propagate by grafting on seedling stocks of the species.





ORANGE LILY



ORANGE LILY.

Lilium croceum.

It is a singular fact that the lilies have attained to the highest degree of popularity, and yet they are amongst the most capricious plants known to our gardens. The glorious golden-rayed lily (*L. auratum*) flowers and dies, and occasionally even dies without flowering. In a few places it thrives "as to the manner born," but, generally speaking, those who will have it in their gardens must from time to time renew their stock by purchasing roots imported from Japan. Even the common white lily (*L. candidum*), which is discoursed on in our first series, though only the commonest of

our hardy garden flowers, is eccentric, fickle, and often seriously disappointing; for strong clumps will in one

garden produce not a single flower in a run of ten or more years, while in another garden, with the self-same soil and climate, similar clumps will flower annually in the most delightful manner. One probable cause of the disappointments that occur in the lily garden is the exhaustion of the bulbs through excessive flowering. The disappearance of *L. auratum* is certainly traceable to this cause in some instances; but the ways of the lilies are as yet but imperfectly understood, and the commonest and cheapest are given to vagaries that no one can explain.

As we have before us a very hardy, free-flowering, and useful lily, a few general directions on lily culture may be useful. When lilies are planted out they should have the full sunshine, for the shade of trees is unfavourable both to bloom and longevity. The commoner kinds will bear a certain amount of shade without harm, but it should always be borne in mind that lilies love sunshine.

The lilies may be divided into two groups as regards the soil that suits them: one group needing a loamy, and the other a peaty soil. But they will all thrive—other circumstances being fairly favourable—in a mellow well-drained loam, or in a nourishing fibrous peat. A boggy, sour, poor, or chalky soil will not suit a single lily, whether it be the commonest or the rarest. In preparing for lilies, it is not advisable to use stable manure, except as a top-dressing when the planting is completed, but the cow-shed will supply a suitable fertiliser to dig in and mix with the staple. Far better, however, as an aid in making up a bed for lilies, is a heap of rotted turf, leaves, and other vegetable refuse, forming what is known to gardeners as “leaf-mould.” A good soil they must have, but stimulants are likely to do more harm than good, and their free

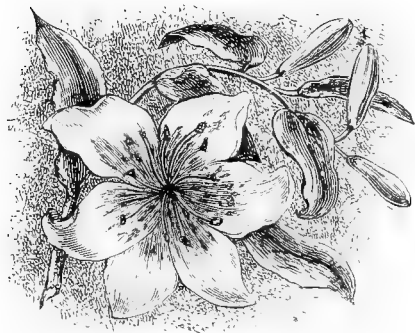
employment in promoting a grand bloom of *Auratum* will often account for the perishing of the bulbs when the bloom is past.

Lilies are often described as needing an abundance of water. As regards those planted out in a deep fertile soil, our opinion is that they do not want any. We have often felt perfectly satisfied that if we could screen our lily beds from rain, and compel the sun to shine upon them from May to August, we should have glorious bloom above and a great increase of bulbs below, and, beyond all doubt, hot dry summers bring the garden lilies to their highest perfection.

The inexperienced amateur is likely to make a fatal mistake in his first venture in lily culture by planting at the wrong season. All beginners have an idea that the spring is the proper season for every kind of garden work, including the planting of lilies. The "proper" time to plant them is as soon as possible after they have flowered. As a rule, therefore, lilies should be planted from July to October, and in every case it would be well to do the work directly the last of the flowers falls from the stem. The florists do their best to keep lily bulbs fresh and plump through the winter for the late-coming customers, but Nature does not alter her ways to accommodate our mistakes. She simply makes us pay for them; and if we will walk in the wrong way, the path before us is soon found to be strewn with stumbling-blocks, but the right way is always easy and pleasant.

The following are the most useful of the cheaper kinds of garden lilies:—*Lilium bulbiferum*, a stout hardy kind, producing brilliant orange-coloured flowers; it will grow almost anywhere, but the best soil for it is a sandy loam.

L. candidum, the common white lily, thrives best in a light deep soil; in a pasty soil its welfare is precarious. *L. chalcedonicum*, better known as the "scarlet martagon," a splendid scarlet lily, thrives in any good soil, but dies away on damp loam or clay. *L. croceum*, the one here figured, very showy and useful, thrives in any soil, but likes good living. *L. testaceum*, a fine species with buff-tinted flowers, thrives on a strong soil, and makes a good feature in a mixed border. *L. tigrinum*, the resplendent tiger lily, thrives anywhere, and increases rapidly.

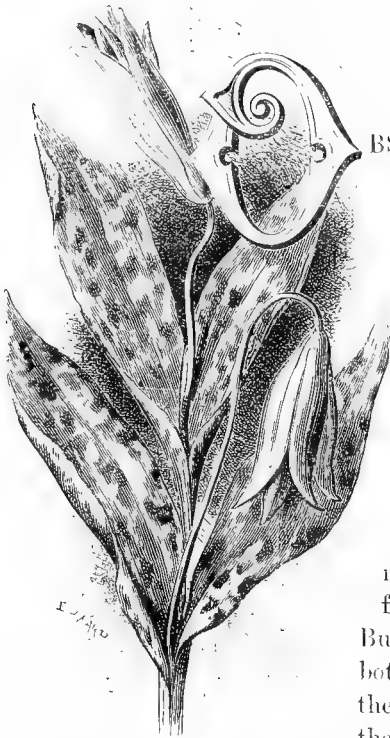




DOG'S-TOOTH VIOLET.

DOG'S-TOOTH VIOLET.

Erythronium dens-canis.



BSERVERS of plants who endeavour to understand their names have usually a tough task before them. Many names, indeed, carry their meanings in their faces, but many have no meaning at all; and, again, many are founded on such subtle distinctions or fanciful notions that it is not in the plant but in the mind of the nomenclator that we must seek for the coveted explanation. But whatever the vices of botanical terminology — and they are terribly numerous — there are many reasons why

names intended to be descriptive should be founded on obvious characters that are displayed above ground. Here is a dog's-tooth violet, and the inquiring amateur may be led to search leaves and flowers for some resemblance to the dog's-tooth moulding that so often occurs in architecture,

and may conclude at last that the spots on the leaves shadow forth the resemblance. But the dog's tooth is underground, and we must dig up the plant to make a proper study of its name—a proceeding akin to the cutting open of the bellows to discover the reservoir that contains the wind. The bulbs of the plant are white, and in form not much unlike dogs' teeth. They justify the *deus canis*, and the colour of the flowers—a warm rosy-purple or lilac—in like manner justifies the familiar name of “violet,” although in truth we have but rarely seen a violet of such a colour. But a rose by any other name would smell as sweet, and by any other name a dog's-tooth violet would look as pretty, more especially if judiciously placed upon the garden rockery, to display its tessellated leafage and cyclamen-like flowers.

The dog's-tooth violet is the only European species of its family; the others are natives of North America, and are quite hardy and very acceptable in the English garden. They are not adapted for what may be termed “purposes,” for in truth they are too choice to be appreciated by the “casual eye,” but they are gems of the first water for the eclectic amateur. They belong to the great family of lilies, with which they agree in their six-parted flowers and the arrangement of stamens and pistils, although in less important particulars they are far removed from the genus *Lilium*.

All the erythroniums will thrive in a deep sandy soil or in peat, and a moist soil suits them better than a dry one. They appear to flower equally well in sun or shade, but shelter from cold winds is desirable, and this the rockery should sufficiently afford them. Border plants they are not, although perfectly able to hold their own in the border so

long as they are unmolested. But where shall we find an ordinary garden border in which these plants would be safe? Moreover, they are not showy enough for the border, except it be in the garden where such delicate little things would be fully appreciated and never forgotten; in the few such there may be a home for erythroniums.

The plant before us has oval leaves, blotched with reddish-brown; the flowers are borne singly on stiff stems: they are usually light purple or lilac-coloured, but there are varieties with white, rose, and flesh-coloured flowers; and a variety called *majus* has longer leaves than the best known form of the plant. The propagation is best accomplished by dividing the clumps every three or four years, and re-planting rather deeply. The best time for this operation is when the leaves are dying down, as then the bulbs are most completely at rest.

The finest of the erythroniums is *E. grandiflorum*, a suitable plant for a moist peat bed. Nearly allied to it is *E. giganteum*, a native of Vancouver's Island—the flowers white, with a ring of bright red, the plant one of the hardiest in our gardens. These two fine species are worthy of the special attention of the lover of first-class hardy plants, and they are truly hardy: no frost hurts them, and given a bed of moist peat, with shelter from drying winds, all they further ask is to be let alone.

With the yellow adder's tongue (*Erythronium Americanum*) the case is different. It is a woodland plant, with beautiful mottled leaves, and flowers of a pale yellow colour that have an orchid-sort of expression as they appear to look over their own leaves, and subtly invite one to observe the floral spots that in some degree dissociate them from their family. This pretty plant requires to be

grown on the rockery, and to be there "pot-bound," if such an expression may be used. A peat bed in which it can grow freely is not the best place for it; but a rather starving "pocket," with a good depth of poor sandy soil, will satisfy its wants and persuade it to flower, whereas a position favourable to growth will result in a production of many leaves and few flowers.

The erythroniums are well adapted for planting out on grass slopes, in the same way that snowdrops, crocuses, hardy cyclamens, winter aconites, and colchicums are grown in gardens where a tender hand bears sway—a hand, namely, that recognises that every plant which produces leaves and flowers must be allowed to make a free leaf-growth to be enabled to produce its flowers. Erythroniums show their beauties advantageously where they dot the green herbage, and the effect is very different to the appearance of the flowers above dark mould.





PASSION-FLOWER

THE PASSION-FLOWER.

Passiflora cœrulea.

PASSION-FLOWERS abound on the great Western Continent and the isles thereof. Though not unknown as wildings in the far East, their proper home is South America, and their head-quarters are in the plant-producing valleys of Brazil. To the generous land which has so greatly enriched our gardens with orchids, palms, begonias, and amaryllids, we are indebted for the finest species of passifloras, which, with other glorious twining plants, riot in the humid



woods and festoon the lower acclivities of the mountains. From Brazil we derive the plant before us, and its near kindred—the white, the actinia-like, the hand-shaped, the racemed, and the flesh-coloured passion-flowers; while other regions of the great continent have given us the scarlet, crimson, yellow, purple, and lime-tree-leaved

species. The most noted of all, the square-stalked *Passiflora quadrangularis*, which is often grown for its edible fruit, is a native of the productive island of Jamaica.

The first passion-flower introduced to this country was *P. incarnata*, a native of Virginia, figured by John Parkinson in his immortal work, the "Paradisus Terrestrius," wherein he describes it as "the Virginian climber," or "Jesuites Maracoe." Parkinson's figure is a fanciful travesty of the fact, and comes near to the mystical figure in Hone's "Every-Day Book."

The blue passion-flower, the subject of the present figure, was introduced about the middle of the seventeenth century, but the first distinct record we have of it represents it as cultivated by the Duchess of Beaufort in 1699. It is the most useful species known, for the sufficient reason that, while it is extremely beautiful, it is quite hardy in this country, and ripens its fruit in abundance in the suburbs of London. The fruit is as ornamental as the flower, being of the colour and size and nearly the form of an apricot; so that, when in autumn it appears in plenty, the beautiful green herbage of the plant seems studded with ripe oranges or eggs of a brilliant apricot colour. The fruit is edible, but is not often eaten, as the addition of wine and sugar is needed to render it agreeable to the palate; and then the question of its wholesomeness remains to be decided.

The first passion-flower came to Linnæus as the "Flos Passionis," the flower of the passion, and this name he cleverly latinised into *Passiflora* as the name of the genus. But why is this the flower of the passion?—The conquerors of South America were cruel and rapacious, but they were, according to the notions of their time, profoundly pious in

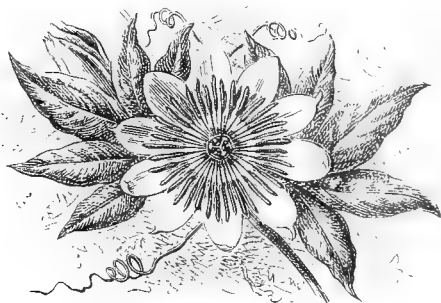
thought and deed. They readily saw in this flower the emblems of the story of the Redemption. The leaf of the plant represents the spear with which the Saviour was pierced; the threads that form the corona represent the scourge; the five stamens represent the crown of thorns; the column is the staff to which the scourge was attached; the three clavate stigmas that rise above the flower are the nails that were used in the crucifixion; the outer rays of the flower—sepals five, petals five—ten in number, represent the apostles—and ten will suffice, since nature affords no more, and the two that may be counted as missing are Peter who denied and Judas who betrayed the Master. By another rendering of the mystic symbol, the corona becomes the cloud of witnesses; the circles become rays of glory; the five stamens are the five sacraments of the Romish Church or the five points of Protestant doctrine; while the three stigmas that surmount and crown the flower are the three Persons of the Adorable Godhead.

To cultivate this fine plant is a very simple business, provided we can begin with a rich, mellow, well-drained soil and a warm wall of sufficient breadth for its full development. The rest is easy, for it consists merely in regularly training in the growth by means of nails and shreds, or by tying to a trellis, and occasionally pruning away any shoots that appear out of place, or that tend to crowd one another. The less pruning the better, generally speaking; therefore the cultivator need not often think of this matter. But in the event of any accident that disfigures a fine plant, it is good practice to cut the whole of it down to the ground line, and wait for a new growth to clothe the wall, for this will come quickly, whereas it may require years to fill up a gap caused by severe frost or mechanical injury.

It is a matter of some interest to students of plants to know that this blue passion-flower was selected by William Curtis for one of his earliest subjects in the *Botanical Magazine*, the figure being No. 28 in that vast series, numbering now some seven thousand figures. And Curtis's portrait of the plant, published in 1788, is as good as any extant; and to this day the colouring is as true and fresh as if it had been finished but yesterday.

The bards have taken but little notice of this interesting and, as one might suppose, attractive subject. But Bernard Barton, in his "Invitation to Flowers," was not unmindful of its claim to honours in verse, and thus he brings it before us:—

“Vain were the hope to rival bards, whose lyres,
 On such a theme, have left me nought to sing;
 And one more plant my humbler Muse inspires,
 Round which my parting thoughts would fondly cling;
 Which, consecrate to Salem's peaceful King,
 Though fair as any gracing Beauty's bower,
 Is link'd to Sorrow like a holy thing,
 And takes its name from Suff'ring's fiercest hour—
 Be this thy noblest fame, imperial Passion-flower!”





GRACEFUL DEUTZIA

GRACEFUL DEUTZIA.

Deutzia gracilis.



DEUTZIA GRACILIS ranks with *Spiræa japonica* as a familiar plant of the most useful character, and one which is grown in immense quantities for the supply of the flower markets. The cultivators who supply the markets in this country usually obtain supplies of both these plants from Holland, where they are grown for this particular purpose in the open ground, mostly in the alleys and trenches between the beds of hyacinths and tulips. They are thus in the nature of what gardeners call "stolen crops"—that is, they are run in between other things, and

occupy places where a severe routine would forbid the planting of anything whatever. But all the important business pertaining to the beds of bulbs is over by the time the deutzias and spiræas are planted; and by an accommo-

dating practice in respect of weeding, &c., room is found for these in the narrow alleys that are left for access to the plantations.

These plants are generally regarded as tender; but the outdoor culture in Holland will suggest to the reader that they are hardy. As a matter of fact they are so, but need a little coaxing to enable them to endure the vicissitudes of an English spring.

Deutzia gracilis is often purchased when in flower, and being then fresh from the forcing-house, it requires to be carefully comforted in the parlour or the greenhouse. When the flowering is past, deutzias are usually kept in the greenhouse, or are put on a window-sill, where the hot sun will roast them by day and the frosty wind blow the life out of them at night. Plants that have been forced require to be gradually hardened, so as to endure the free air without a shock. The forced deutzias should therefore be taken care of, and have more and more air as the season advances, with only moderate supplies of water (for this is not so thirsty a plant as the spiræa), and as the weather opens in the early part of May they should be put out of doors in a sheltered corner. There they may remain until the middle or end of the month, having a little water occasionally to prevent distress; and in the event of frost they should be taken indoors again, or have suitable shelter to prevent any injury.

We have now reached the later days of May, and the deutzias should be planted out in the open ground. You will, perhaps, in view of a fine crop of flowers the next spring, find a piece of rich soil for them. But that is the very thing you should not do. Put the plants in an open, sunny situation, on the poorest and most stony soil you

can find. First prune them a little, very little, to give them a neat shape; then turn them out of the pots carefully, loosen the ball tenderly to shake out some of the old soil, and plant them far enough apart to allow for free growth without crowding. Should cold weather follow, put large pots or baskets over them at night; water moderately until they begin to grow freely, and then give not another drop all through the season. You are to observe that a moderate growth is required; a very strong growth is of no use, for the flowers will not come out of the fat shoots, but out of the wiry ones that are short and branchy, and perfectly ripened. At the end of September lift them, prune back any ungainly rods, but use the knife as little as possible, for there is a charm in the form Nature gives a plant that no effort of art can equal. Pot them in any kind of soil that is fresh and gritty, and in as small pots as you can cram the roots into without cramping or needing to reduce them in any great degree.

The rest is a matter of simple greenhouse management. The plant is easily forced, but it will bloom early and finely with the aid of the ordinary shelter of a pit or greenhouse, and will even bear a slight touch of frost. But a warm greenhouse, properly managed, never admits the frost, and we are not to think of such a contingency in the flowering of this delicate beauty.

Pot culture throughout the year is a simple matter. When the flowering is over, the longest shoots should be slightly shortened, but severe pruning is not to be thought of. When the new shoots have grown about an inch in length, turn the plants out of the pots, remove the pots-herds and some of the old soil and any roots that are matted, taking care not to mutilate the roots roughly, and

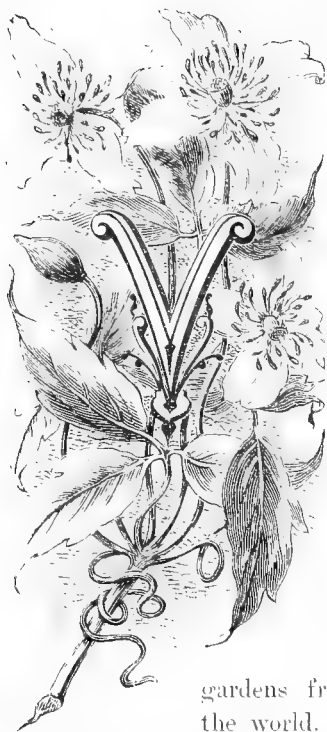
re-pot in pots of the same size as before, or in pots one size larger. A rich soil is not needed, but a sweet gritty loam should be used, with carefully-packed drainage, and the pots should never be larger than suffices for moderate summer growth. From the end of May to the end of August the plant should be out of doors, and have regular watering with pure water only, liquid manure being likely to cause a rank growth inimical to the production of flowers.

The more robust kinds of deutzia are fine adornments to the garden. *D. scabra* appears to attain to greater perfection in the east of England than elsewhere, although, indeed, it may be classed with the universal plants. Most beautiful is *D. crenata*, which may be spoken of as one of the finest of hardy flowering shrubs for gardens near London. As it does not flower until June, it does not suffer from frost; and its pink-tinted white flowers present a delightful appearance in the season when green leaves are abundant.





MOUNTAIN CLEMATIS.



THE MOUNTAIN CLEMATIS.

Clematis montana.

MIRGIN'S BOWER and traveller's joy are names of which any wild vine may be proud. Our clematis of the hedges and railway banks is the only British species, and it is so beautiful as it grows up above all the more robust vegetation of an old hedge-row in a chalk country, that it seems to prepare our minds to give welcome to the many hardy species of clematis that have been brought into our

gardens from the most distant parts of the world. Of these we have already discoursed, but the present figure takes us away from the *Jackmanni* group to one less attractive but not less interesting, and, we must say, not less beautiful, though its beauty is of a quieter order, and is supplemented by a fresh fragrance that gives general delight.

The mountain clematis is a native of the Himalayan Mountains, and is perfectly hardy in the English garden.

It is a free-growing, free-flowering, climbing shrub, running twenty to thirty feet, and well adapted for clothing a trellis, or rough garden hermitage, or for displaying a wild luxuriance on a spacious rockery, where, if well placed, it will be most effective and delightful. Its flowers are so like those of *Anemone sylvestris* that it has been catalogued as *Clematis anemoniflora*, and it is also known as *C. odorata*, in allusion to its agreeable odour. To grow it well it should be planted in a deep, rich, well-drained soil, and be allowed to run its full length, for to cut it in severely will be to prevent its blooming as freely as it otherwise would. The flowers are produced in prodigal profusion from the well-ripened shoots of the previous year, and pruning back simply removes the flowering wood, and, in respect of the flowers, occasions the loss of a season. The same thing happens in the case of many of the more rampant growing roses; their beauty is seen only when natural growth is allowed, and with them, as with this clematis, clever pruning consists in occasionally cutting clean out to the base any old rods that can be spared, but otherwise preserving the whole of the growth in all its original vigour.

Closely allied to this clematis is the winter clematis (*C. calycina*), a beautiful climber, running twelve to twenty feet, and producing during the winter flowers of a greenish-white colour dotted with purple spots. This is a native of Minorca, and is not quite so hardy as the mountain clematis, therefore it requires a somewhat sheltered situation, which it will pay for by its winter flowers.

Another near relative is the evergreen virgin's bower (*C. cirrhosa*), which makes less growth than the

species noticed above, rarely extending beyond ten to fifteen feet. It is a native of South Europe and North Africa, and scarcely hardy enough for the climate of London, but thrives in a cool conservatory and on open walls that are well sheltered. Miller, the renowned manager of the Chelsea Botanic Garden, said: "Those which have been growing in the open air at Chelsea more than fifty years have resisted the greatest cold without covering." But Mr. Moore, the present curator there, says, "It gets cut to the ground in severe winters, even in Devonshire." In the woody parts of the Atlas Mountains and about Algiers it is a vigorous climber and a strangler of trees; but here its vigour is subdued, and it makes no impression of a capability to give a character to forest scenery. Its flowers are white or cream-coloured, and somewhat campanulate in structure.

A new and brilliant clematis should here be mentioned, as it is a most valuable acquisition to the garden—the scarlet virgin's bower (*C. coccinea*). It is of light elegant habit, the leaves roundish, the flowers borne on long slender stems; they are bell-shaped, of wax-like consistence, and a brilliant scarlet colour. It is likely to become a general favourite, being perfectly hardy, and needing no special conditions for its growth.

For cultivators who take special interest in plants of this class we can also recommend *C. campaniflora*, with bell-shaped flowers of a light purple colour; *C. erecta*, with large white flowers; *C. tubulosa*, with flowers like those of a hyacinth, the colour blue; and *C. viticella*, with blue flowers. These are all adapted for rockeries, bowers, and other rustic scenes.

An effective mode of displaying a collection of clematis

is to train them to poles on the margin of a spacious lawn, or next a path somewhat remote from the dressed grounds. In adopting this plan care must be taken to prevent small birds alighting on the poles, for they not only defile but injure the plants, and may even kill them. The grey flycatcher is a common offender in this way; but if the poles are sharp-pointed, or have a stout spike driven in at the top, the birds will be careful not to alight on them.





DOUB



DOUBLE KERRIA.

Kerria Japonica (fl. pl.).

S this plant is often labelled *Corechorus Japonica*, we commence this notice by saying that it is not a corechorus, and should never be so called. The corechorus is allied to the lime-tree; the Kerria is allied to the spiræa, and is, therefore, a rosaceous plant. The leaves are quite spiræa-like; but the flower of the double variety may take us far away from spiræa, until we examine it carefully.

The Japan Kerria is named in honour of Mr.

William Kerr, a collector sent out from the Royal Gardens at Kew, and some time superintendent of the Botanic Garden in Ceylon. The hardiness and beauty of the double variety, which was first introduced, made the botanists desire to obtain the single form of the plant; and Don, in the second volume of his "Dichlamydeus Plants" (p. 517), intimates that it was still unknown in 1832, when that

work was published. But it was figured in the fourth volume of Sweet's "Flower Garden" (t. 337), which is dated 1838, and its introduction is there ascribed to Mr. Reeves, through whom many valuable plants were secured from China and Japan for the enrichment of our gardens. Sweet reports that the double *Kerria* was introduced in the year 1804; but in the current works of reference the year 1700 is attached to both the single and double kinds, as though they were introduced together. However, it is, after all, of but very little consequence whether this plant, as an inmate of our gardens, dates from 1700 or 1804.

Kerria Japonica is perfectly hardy, and very accommodating. It will grow in any good border, and is usually planted next a wall; and while being trained in the ordinary way, it soon lends its supporter the adornment of its bright green leaves and golden flowers. It is not given to any great degree of variation; but a handsome large-flowered variety was, some time ago, presented to the notice of the Royal Horticultural Society by James McIntosh, Esq., of Weybridge, and was named, to distinguish it, "*Kerria Japonica major*."

The single form, as figured by Sweet, is simple and elegant, the flowers having five rounded oblong petals of a rich yellow colour, and somewhat resembling those of a potentilla. It is, we think, a matter for regret that this single flower is not to be met with in gardens generally; indeed, we doubt if it could be easily found in the botanic gardens, so little attention has it hitherto obtained.

To propagate the *Kerria* is an easy matter. The old wood is of no use for the purpose. Young shoots, when

just becoming firm, may be cut off at a joint, and planted firmly in a pot filled with sandy loam, and covered with a bell-glass. These will need an occasional sprinkling of water to keep them fresh; but the soil should not be more than moderately moist, or the cuttings will rot. In the course of about three weeks roots will be formed, and then the glass may be removed. Plants of this kind should be grown in pots for a year, and then be planted out where they are to remain.

There are many fine subjects available for the clothing of a warm wall that cannot be advantageously grown any other way. Those who can command a sheltered situation and a good deep, well-drained border, may festoon their walls with some splendid examples of exotic vegetation. One of the finest plants for the purpose is the *Bignonia radicans*, the "trumpet-flowered ash," a North American plant; and there is a near relative, *Tecoma grandiflora*, a native of Northern Asia. These have trumpet-shaped flowers, richly coloured scarlet and yellow. The *Wistaria sinensis*, though well known, is not so often to be seen as one would wish, considering how many grimy walls there are in the world, and how easy it is to make them beautiful. *Bomarea salsilla* may be called the climbing lily, although it is not a lily, but an amaryllid. It will run from five to seven feet, and produce pretty clusters of purple flowers. *Clianthus puniceus*, the glory pea of New Zealand, is a grand wall plant for the western counties. The flowers are curious and splendid, and may be likened to lobster claws in form and colour. *Magnolia grandiflora* is, perhaps, the finest of all the wall plants that are hardy enough to bear twenty degrees of frost. This it will bear, but no more, and therefore it is only in the southern and western coun-

ties that the evergreen magnolia acquires age enough to flower freely.

But while these and many more fine subjects are at our command, it must never be forgotten that we have clematis, roses, pyracanthas, jasmines, cotoneasters, creepers, ivies, and many more glorious wall plants that twenty degrees of frost will not touch ; and the prudent planter will take care to secure some of the handsomest and hardiest subjects before incurring risk with those that are in some degree tender.





EVERLASTING FLOWER.

THE EVERLASTING FLOWER.

Helichrysum monstrosum.



EVERLASTINGS are of many kinds, but they are mostly members of the great family of composites, and their "everlasting" character is the consequence of the dry, chaffy texture of the flowers. These are Cape plants, natives of the sunny, sandy plains, easily cultivated, and peculiarly useful for winter bouquets and for household decorations; but, to do justice to them, a few points of management must have attention.

A dry, sunny summer is requisite to the production of a good head of flowers, and this the cultivator must obtain by manage-

ment. You say that is impossible. Well, it must be granted that if the summer is sunless and rainy your

helichrysums will fare badly, whatever you may do. Nevertheless you can secure for them the sunshine they require by having the plants forward in time to enjoy the summer sun for making their flowers; for if they are but growing in summer and making flower-buds in autumn, the frosts may put a stop to the business before you have secured so much as one bunch of the coveted flowers.

To do justice to these plants the seed should be sown early in spring, and the plants forwarded under glass, so as to be strong for planting out in May; then they will produce their flowers before the summer is gone, and they will have the brightness of colour that only sunshine can give. Better still is the practice of sowing in August or September, and wintering the plants in a frame or pit, where they will be safe against frost. Then, being somewhat matured when planted out in April or May, a fine crop of flowers may be expected. It happens, however, that these lovers of sunshine do not suffer from an occasional light touch of frost, and therefore in the West of England they would often come through the winter safely in the open ground, and make a grand bloom in the following summer.

It should be understood that a rich, moist soil, and a sheltered, shady situation, are promotive of death rather than life to these plants. A dry sandy or stony soil, and the most complete exposure, will suit them very well, provided the winds are not so strong as to blow them out of the ground. We often see them making a miserable bloom, the flowers few and colourless, when closely mixed up with other plants; and it is in the nature of a surprise to see a great batch in an open spot on a seed farm, where

they have been raised under glass and planted out early, and the poorest and most sunny spot in the open quarters has been selected for them.

The favourite species for gardens are *Helichrysum brachyrhynchum*, a dwarf plant, with yellow flowers; *H. bracteatum*, taller, giving flowers yellow and white; and *H. monstrosum*, of which there are about a dozen varieties, giving considerable range of colour. When a small plantation for domestic purposes is wanted, a packet of mixed seed will give abundant variety, and serve every necessary purpose.

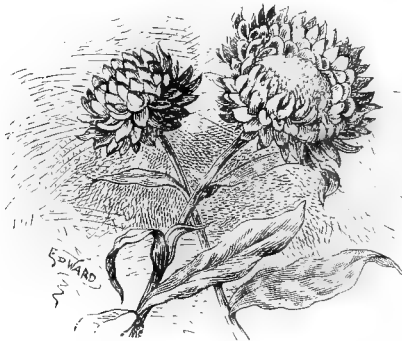
As regards the drying of these flowers, it is necessary, in the first instance, to cut them properly. They should be cut with a pair of scissors, with a convenient length of stem, *before the flowers are fully expanded.* Being cut, they must be tied in small bunches, and at once hung up (heads downwards) in a dry closet, where they can be shut up safely against dust or accidental handling. They should not be touched until wanted; and any dry place will serve to keep them, provided only that it is free from dust.

Now we come to the employment of the flowers for decorative purposes. Generally speaking, their own natural stalks will answer for their attachment where needed in any decorative work. But the best way consists in mounting them on wires, a fine binding wire being passed round the base of each flower, to attach it to the stouter stem wire. Bouquets formed of these flowers, with dried grasses, are (or should be) beautiful, and to construct them is easy enough, but requires some amount of practice and an eye for effect.

The everlasting which is in general demand on the Continent, and on All Souls' Day is an important article

of commerce, is *Helichrysum orientale*, an evergreen greenhouse shrub, requiring a warm position and a sunny summer to flower freely. About fifty species of this genus are known to cultivators, or at all events are registered in the books; but they really are not of great consequence in connection with the ordinary wants of the amateur gardener.

A few of the more elegant grasses are of great value to associate with these flowers. Those most likely to suit amateur cultivators are the following, all of which may be easily raised from seed, obtainable in the usual way of the seed merchants:—*Agrostis nebulosa*, *Stipa pennata*, *Briza maxima*, *Chrysurus aureus*, *Eleusine pennisata*, *Eragrostis elegans*, *Lamarkia aurea*, *Panicum capillare*, *Piptatherum Momasi*. There are many more, but these nine make a beautiful collection.

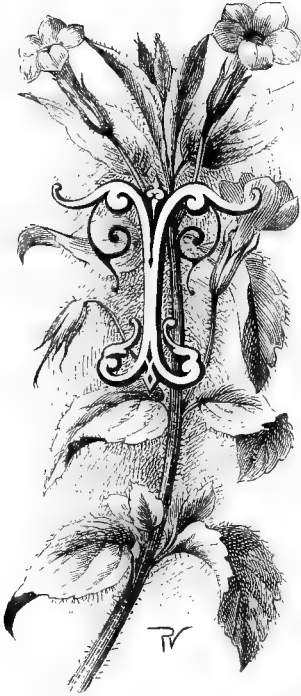




MUSK

THE MUSK.

Mimulus moschatus.



THE homely name of this very homely plant needs no explanation, but there appears to be a paltry question to be asked and answered in respect of the peculiar and, to a majority of noses, delicious odour it emits. This musky, or "Muscovy," essence is variously produced among plants by this mimulus, by the musk stork's-bill (*Erodium moschatus*), by the musk orchis (*Hermidium monorchis*), and by the musk thistle (*Carduus nutans*). And, again, it is produced amongst animals by a rat, a deer, an ox, and perhaps by some other creatures. The question will occur, Is it in

each case the same substance? Can the chemist detect any difference in the constitution of the musk from the plant and the musk from the animal? Or is our identification a delusion, and does the nose lead us astray in making things that are different appear to be the same? Whether the fragrant essence has ever been obtained from the plant in a separated form we do not know; but we

cannot suppose there would be any difficulty in separating it were it needed, for fatty matters readily take up the most delicate and evanescent odours of flowers.

Although the common musk is to be found in every garden, its proper home seems to be the cottage window; and assuredly the cottagers appear to know best how to grow it, if we may judge by the huge buxom plants that we meet with in exhibitions of window flowers. The two important points in the growing of musk are to put the plants into fresh rich soil as soon as they begin to grow in spring, and to give them abundance of water. Having had occasion to grow a few large plants of musk at times, we have proceeded as follows:—A certain number of pots containing last year's plants are shaken out as soon as they begin to sprout in spring, and are potted in large pots only *half filled* with a mixture of equal parts of rotten hot-bed manure and fresh turfy loam. As the plants grow, fresh soil is added, until the pots are filled to within an inch of the rim, and then the pots are stood in pans containing always about one inch depth of water. A greenhouse or frame is the best place for them while making their early growth, and they must have abundance of light and air; but when the glowing summer has set in they may be anywhere out of doors, but should be in a sheltered nook, because a strong wind or the wagging of a dog's tail may seriously injure the frail growth, and spoil the plants for the season. A certain amount of support, in the way of neat stakes, must be provided, and the plants should be carefully trained; but they should never be trained out in a flat form, unless there is a special reason for it—a round bush-form being more natural and pleasing.

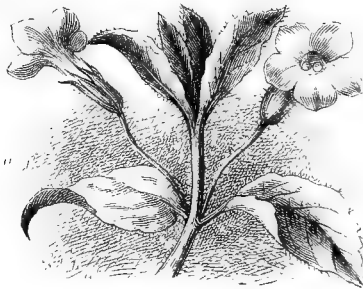
A very pleasing surprise was afforded to the horticultural

public a few years since by Messrs. Harrison, of Leicester. Not many of the ambitious florists thought the common musk worthy or capable of improvement; but one fine morning the *habitués* of the floral gatherings at South Kensington were confronted with a batch of several dozen plants of a new and fine variety of this humble plant, and this, which was called "Harrison's Musk," soon acquired immense popularity, and in one respect attained to a position which we will venture to speak of as unique. Mr. Cannell, the florist, of Swanley, in Kent, advertised that all plants ordered of him would be sent to the customers packed in Harrison's musk! Imagine a jeweller advertising that diamonds and rubies ordered of him would be sent home packed in gold dust! And yet, in its way, this was somewhat of a parallel case.

Harrison's musk is a replica of the common musk, but on a very large scale. It is the evident result of a cross between the common musk and a larger growing *minulus*, such as *M. luteus*. It is as hardy as the older plant, more robust in every way, and very much more showy, while, fortunately, it is richly scented.

These two varieties of musk are not only useful as pot plants and to fill odd places in borders, but they may be advantageously employed as bedding plants under some circumstances. When it is desired to place a bed of musk in a conspicuous position, it may be enriched by planting some more attractive flowers with it to which the musk will form a groundwork. Such plants as gladioli, liliuns, and the scarlet linum may, with advantage, be planted in beds of musk, which will form a rich surface like golden moss beneath their gay flowers, and make amends for their comparative poverty of leafage. We often see a

disproportionate surface space of bare earth amongst gay flowers, but this might always be easily clothed with musk or mignonette, or some other fragrant plant of somewhat humble character. When musk is planted out it may be left for several years, as, although it dies down in autumn, the roots live in the ground and produce a new growth in spring; but after three or four years' occupation of one spot, it is advisable to root out the musk and plant it in fresh rich soil, for it does not maintain a sufficient vigour to be useful when living in the same soil for several years.

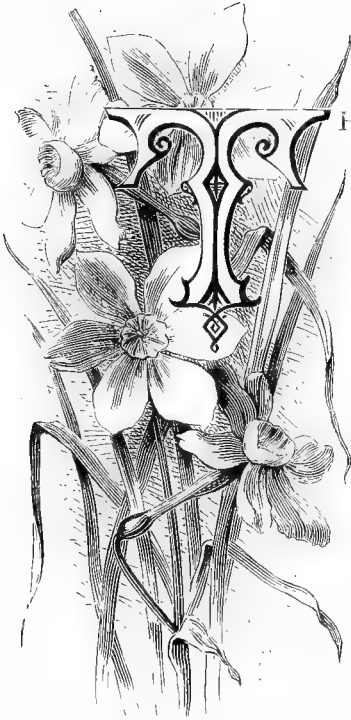




TINY C

TINY OR RUSH DAFFODIL.

Narcissus juncifolius.



THE family of Rush daffodils is a large one, but the plant before us is *the* rush daffodil, and very different from the basket-flowered daffodil, the gay corbularia which sometimes bears the name. There are not many cultivators of the rush or tiny daffodil, for its smallness is an offence against the popular expectation. Its beauty proclaims itself to those who have eyes to see, for it is one of the loveliest of the family. For a quick lesson in the characters of narcissi, it may be com-

pared with corbularia, all the forms of which are classed by Parkinson as *Pseudo-narcissus juncifolius*, because of their narrow, rush-like leaves. The comparison will show striking differences in the leaves, and much more striking differences in the flowers, and enable any one not learned

in the subject to apprehend the primary principle of the scientific classification. In *corbularia* (also known as *bulbocodium*) we note that the corona, or trumpet, is the principal feature of the flower, and the outer or perianth segments of quite secondary importance. The resemblance of the corona, cup, or trumpet to a deep basket justifies the name *corbularia*, and at once connects it with the corbel in architecture, which is in the nature of a basket supporting a window or ornament. In the flower before us the central corona, or trumpet, is very much contracted—indeed it cannot be called a trumpet, but may be likened to a shallow cup. On the other hand, the perianth segments, or, say, the petals of the flower, are conspicuous elements, being broad and spread out, forming a leafy saucer to sustain the cup.

The proportions of the cup to the divisions of the flower (which we have above spoken of as petals) form the basis of the modern classification. The narcissi are arranged, in accordance with the length of the cup, in three groups. The first group is *magnicoronatæ*, in which the middle of the flower is as long as the divisions. It comprises the pretty *corbularia* and the whole of the great trumpet series. The second group is *mediocoronatæ*, in which the crown is half as long, or perhaps three-quarters as long, as the divisions. In this group we find the noble chalice narciss, the grass-leaved odorus, and the little beauty with rush-like leaves that makes occasion for this discourse. The third group is *parvicoronatæ*, in which the crown is less than half as long as the divisions. Here we find the true daffodil of the poets, *N. poeticus*, the two-flowered *N. biflorus*, and the stately, many-flowered *N. tazetta*, valued above all the rest for growing in pots.

Narcissus juncifolius is a native of Spain and the south of France. It bears a general resemblance to the jonquil, from which, however, it differs in the crown being half as long as the divisions.

To cultivate this pretty thing is easy enough, and perhaps the chief point is to take care that its smallness does not lead to its destruction. Wherever it is, a label should mark it; then when the leaves die down there will be less risk of the disturbance of its roots. As a rockery plant it is perfect, and a sheltered nook, with a soil of a dry sandy nature, will suit it well. But it is best treated as a pot-plant, and when the flowers are past and the leaves are dying down, the pots should be put upon a dry shelf in the greenhouse, and there remain until the bulbs are once more inclined to grow, then they should be carefully picked over and re-potted in fresh soil. It is in some cases advisable to keep such little things for two seasons in the same pots undisturbed, giving them water in their proper growing season, and keeping them dry in their resting season.

The basket daffodil (*Corbularia*) in its common form is a lovely flower, of a rich lemon-yellow colour. This species offers several varieties, the most interesting of which is the one called *monophylla*, which usually has but one leaf accompanying each of its white flowers. The finest of the yellow forms is that known as *conspicua*.

The trumpet daffodil (*Narcissus pseudo-narcissus*) is the best known of all of the bright family, and of great importance as a garden flower. The varieties have bold yellow crowns, or trumpets, but in *moschatus* we have a flower of a pale sulphur, which changes to a pure white, and in the *bicolor* section there is a white perianth and a yellow crown. The following varieties of the trumpet

section are particularly fine—viz., *Horsfieldi*, *Emperor*, *Empress*, *Obralluris*, *Maximus*, *Shirley Hibberd*, *Tottenham Yellow*, and *Dean Herbert*. The best of the double varieties are *Grandiplenus* and *Telamonius plenus*.

The chalice daffodil, or *incomparabilis*, is beautiful in all its forms, but the most conspicuous varieties are *Orange Phoenix*, *Hume's Giant*, *Butter and Eggs*, *Sir Watkin*, and *Mary Anderson*.

The true daffodil (*Narcissus poeticus*) flowers later than any of the foregoing, and is renowned for the beauty of its white perianth and short purple cup. The most useful of this section are *Biflorens*, *Angustifolius*, *Ornatus*, and the *Double White*, or *Gardenioides*.

The many-flowered daffodil (*tazetta*) is greatly valued for pot culture and for forcing, though well adapted for the border, where the climate is kind and the position sheltered. The most distinct of these are *Bathurst*, *Double Roman*, *Florence Nightingale*, *Grand Monarque*, *Newton*, *Paper White*, *Soleil d'Or*, and *Sulphurine*.

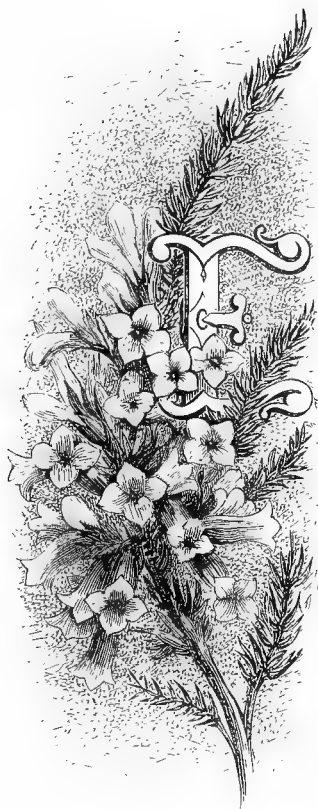




WIN

WINTER HEATH.

Erica hyemalis superba.



ERICAS are less in fashion than they were forty or fifty years ago, for then they were to be seen in every garden that could boast of a glasshouse and a careful gardener. Plants that make more show and give less trouble have superseded them to a very great extent. This may be matter for regret, but it is easier to make mistakes in such matters than to hit upon a true view of philosophical vexation. The one before us, however, does not count as an erica in the highest sense of the florist; it is a "market flower," a "table flower," a

flower for everybody, and therefore it is never seen in an exhibition, and nobody raves about it.

There are three lovely heaths that find favour with the clever cultivators who supply the markets with winter flowers. They are *Erica hyemalis*, the best variety of which, named *superba*, has been selected for the illustration;

E. Wilmoreana, which is much like it, but of a more herbaceous character, and produces larger flowers; and *E. gracilis*, the tiny flowers of which are produced in light clusters, the colour clear carmine-tinted rose, or rose-tinted purple. These three are the most familiar, because the most useful, of the winter-flowering heaths; they are to be seen everywhere, but nobody has a word to say for them, because they are "common."

Amateurs with a fancy for first-class plant growing may be advised to take these in hand for preliminary lessons in the management of heaths in general. That it requires some skill to manage even these cheap things is made evident by the fate which befalls about ninety-nine of every hundred plants sold in the market. It is not needful to pronounce the word. Let us deal with the hundredth plant that escapes the common doom, and having kept it alive, let us learn to flower it again and again, and to promote its growth to fine proportions.

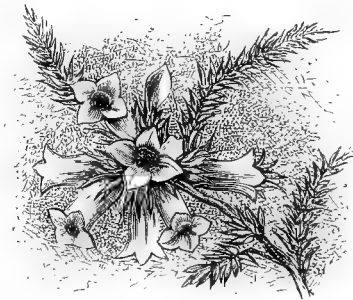
Inexperienced persons who purchase these plants are apt to imagine that periodical watering should suffice to keep them alive for ever. But it does not suffice, as the facts eventually prove. One of the most important points in the management of all such plants is to re-pot them annually, so that every year they have the advantage of fresh soil to grow in. The treatment of one will be the same as for a hundred, and we will take one and briefly describe the routine of cultivation. It has flowered and is in perfect health, and will not flower again for a whole year. We must have ready a little turfy peat, of a brownish colour, and this must be chopped or torn up and mixed with about one-fourth of its bulk of silver sand or any sharp pit sand that is handy. Turn the plant out of the

pot and hold it head downwards, and remove the crocks and some of the old soil, but do not strip the roots or attempt to shake the ball to pieces. When you have had some experience you may shake all the soil off; but in a first effort it will be best not to attempt such radical practice. Now take a clean pot of the same size as that from which the plant was removed, or the selfsame pot may be used if it is washed first. In the bottom of this lay a few pieces of broken pot, hollow side downwards. On these crocks sprinkle a few bits of turfy peat; then put the plant in the pot and fill in round it with the fresh soil, pressing it in with the thumb of each hand somewhat firmly, and put a light sprinkle of the fine stuff over all to make a finish.

Keep the plant in the greenhouse and give it very little water until it begins to grow freely. This will bring us, say, to the end of May. Then take a clean pot one size larger, turn out the plant again, remove the crocks, but do not remove any soil, and pack it nicely into the larger pot with a further supply of the fresh peaty mixture. In about three weeks after this put it out in the open air in a frame, and let it be fully exposed to sun and weather until the end of September, and then put it in the greenhouse, and the work of the season will be completed. The date of flowering will depend very much upon the temperature of the house and the nature of the season. But it will be well to remember that although the greenhouse heaths will not endure frost, they may very soon be killed by excess of artificial heat.

Having thus acquired a lesson in the cultivation of heaths, we may proceed to enlarge our practice by taking in hand a nice little collection. It is of importance to

secure a nice nut-coloured fibrous heath soil. For the free growers about one-sixth of silver sand should be mixed with the peat, and for the slow growers about one-fourth. The plants must be re-potted annually until they acquire considerable size, when it may be advised to keep some of them in their pots two years, but refreshed by renewal of the top soil. Any excess of moisture is injurious to heaths; on the other hand, if kept too dry they will become rusty and cast their leaves. The proper place for a collection is an airy span roof house, where they should always be freely ventilated, and have only as much artificial heat as will keep them safe against frost. During July and August it is advisable to keep them out of doors, so placed that worms cannot enter the pots and the mid-day sun cannot scorch them. Indeed, all extremes of heat and cold and drought and humidity must be carefully avoided. The best free-growing kinds for a beginner are *Bowieana*, *Cruenta*, *Exurgens*, *Flammea*, *Refulgens*, *Wilmoreana*, *Intermedia*, *Bergiana*, *Gracilis*, *Grandissima*, *Hymnalis*, *Linneana*, *Pyramidalis*, and *Sulphurea*.

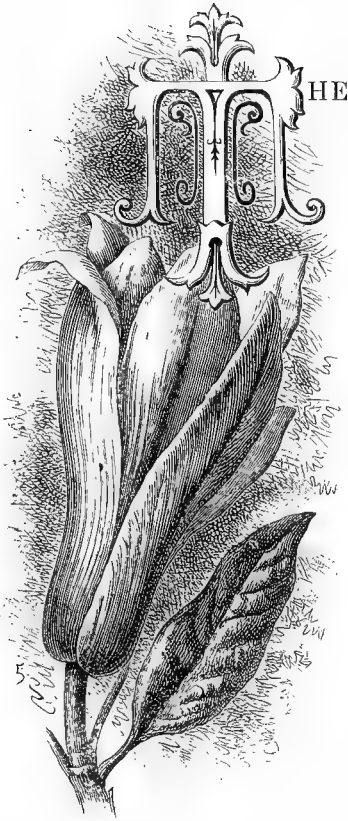




MAG

MAGNOLIA.

Magnolia Soulangeana.



THE book name of this splendid subject is *Magnolia conspicua*, var. *Soulangeana*, which gives a proper clue to its place in classification. It is a variety of one of the best known and most valued of hardy flowering trees, its chief distinction from the species being the beautiful tinge of purple on the outside of the petals. *Magnolia conspicua* is well named, for in the dawn of summer, ere the trees are fully in leaf, and when this particular tree is but showing that it intends to have leaves, the great cup-shaped flowers appear, usually of an ivory-white colour, but subject to be tinged with pink or purple, as local circumstances may affect the growth. Seedling plants develop in various degrees the tendency to this pink or

purple colouring, and some twenty or more that have been selected, named, and established as garden varieties, attest the power of the colouring principle to give special characters to flowers which, so far as we know, are normally colourless. The mere occurrence of varieties, as the result of raising seedlings, belongs to the region of the merest commonplace. Any one who will observe critically the horse-chestnuts at Bushey in the season of their flowering will have no difficulty in determining fifty or more distinct varieties, differing very considerably both in leaf and flower. The reason we do not select, name, and establish these is because, as varieties, we do not value them. Were magnolias as plentiful and as easily multiplied as horse-chestnuts, probably we should not have recognised as "a very fine variety" the beautiful subject here figured. It is a delicate problem how far our knowledge and our opinions of the methods of Nature are influenced by our superficial notions of the beautiful, for often we are arrested, and it may be rebuked, by the exceeding beauty of things we commonly and unconcernedly tread beneath our feet.

This deciduous magnolia was introduced from China in the year 1789, and soon after a few of its varieties were obtained from the same productive country. When growing freely it is a lumpy-headed, large-leaved tree, that may be properly associated with the catalpa and the paulownia, although it is not directly related to either. But they agree in their round-headed, leafy character, their exceeding attractiveness when in flower, and their need of shelter from the northern and eastern blasts that so often damage the exotic vegetation of our parks and gardens.

The best known of this group of trees is the magnifi-

cent *Magnolia grandiflora*, a bold evergreen, that in the later days of summer produces magnificent white flowers. Although this, the noblest of our evergreen garden trees, will not bear more than fifteen to twenty degrees of frost, yet by its power of renewal from below it is often seen in fine condition in places which are really too cold for it. One reason of its frequent survival is that a well-drained border next a comforting wall is usually provided for it; and thus, when times of trial come, it often escapes injury, because its circumstances are the best possible for the district. But thriving standard trees of this glorious magnolia are not uncommon even near London, more especially in the Valley of the Thames. A particularly fine example may be seen in a private garden in the narrow passage that connects Kew Green with the river; and in the Royal Gardens there is a standard, but not a good one, for it was once a wall tree, and has not acquired the free form proper to its present isolated position. In Devon, Cornwall, and Dorset, standard magnolias are often to be seen, bearing immense crops of huge lily-like flowers.

The grandest of the species is probably the Indian *Magnolia Campbelli*, which, unfortunately, is not hardy enough for this country. In many places it has been planted, and has passed through severe winters with but little harm; but it manifests its unhappiness by refusing to flower.

A note on a few hardy trees that are endowed with fine qualities may be useful here, and we will begin with the rose acacia (*Robinia hispida*), which makes a delightful display of rosy-purple flowers in the month of May. A near relation is the Judas tree (*Cercis siliquastrum*), which becomes a tree of fair size when aged, but grows slowly,

and may be kept within the limits of a bush. The paniced bird-flower (*Koelreuteria paniculata*) has pinnated leaves and large panicles of flowers, which are brightly coloured yellow and red. For leaf effects chiefly, the flowers being of less consequence, may be named the richly-coloured Japan maple (*Acer polymorphum*), of which there are many varieties; the weeping Japan bean (*Sophora Japonica pendula*); the tree of heaven (*Ailanthus glandulosus*); the maidenhair tree (*Salisburia adiantifolia*); and the weeping walnut (*Juglans regia pendula*), a glorious tree for a spacious lawn.

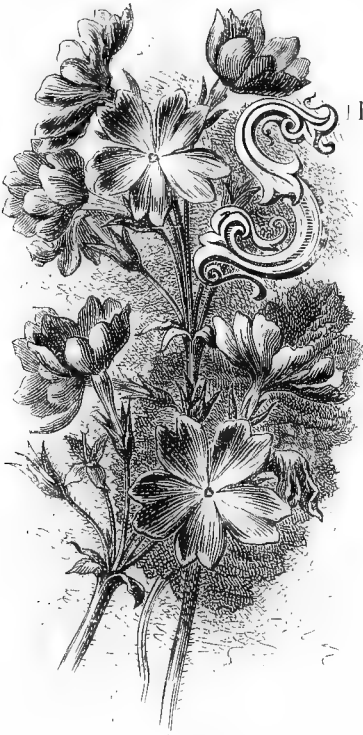




SIEBOLD

SIEBOLD'S PRIMROSE.

Primula Sieboldi.



SIEBOLD'S PRIMROSE is nearly related to the cortusa-like primrose, the best form of which is that named *amœna*. The plant before us differs from that in many particulars, the creeping root being one of some importance, while the differences in leaf and flower, and the characters of the seed-vessel and the seeds, go far to justify the separation of *P. Sieboldi* as a species. It is a plant of great value for its showy character, its hardiness, early flowering, and pliant constitution, for it needs no special care in cultivation,

but in common with primulas generally requires a deep, moist, rich soil, a little shelter, and some amount of shade from the full power of the summer sun.

The recommendation of a moist soil for these primulas

is occasionally misunderstood by amateurs, who have not fully learned the import of the term "winter damp." While growing freely they certainly must have moisture, or they will die. The same remark applies to the common English primrose, and thousands perish every year in gardens through dryness at the root in the summer season. But, on the other hand, a damp sour soil is equally fatal to them in winter, and, to take a further view of the matter, the defective drainage of rockeries and borders is the principal cause of all the losses that occur in gardens where choice plants are denied their right of choice treatment. To grow *Primula Sieboldi* and its near relation *P. cortusoides* well, a border or bank should be prepared of good loam, leaf-mould, and old hotbed manure, with a liberal proportion of sand; and in this they will prosper, provided they are not injuriously damp in winter. In a place badly drained, a raised bank or slope will often answer perfectly for plants that are a little particular, but the slope should be broad and easy, not narrow and abrupt. An easy slope will collect its share of summer rain, but a sharp slope will collect none, and in avoiding winter damp we must not rush to the other extreme of summer dryness.

The named varieties of this primula are of great value for frame culture and for the unheated Alpine house. The best of them give us beautiful shades of lavender and blue, colours but rarely represented in the primula family.

We continue here our list of select rockery plants, many of which are admirably adapted for the border:—

Phlox reptans and *subulata*, with their several varieties, will thrive in any good soil; they bear partial shade, and make a wondrous show of floral beauty.

Phytoloma humile, *Sieberi*, and *orbiculare* are of the

useful class of rockery plants, their blue flower-heads being at once curious and beautiful.

Polygonum Brunoni and *vacciniifolium* make a nice pair to form spreading masses in sheltered bays, common soil being sufficient for them.

Ranunculus amplexicaulis, *montanus*, *glacialis*, *rutæfolius*, *alpestris*, *parnassifolius*, and *Lyalli* form a lovely group for the moist parts of a good rockery. To plant them and forget them will not do; moisture in summer they must have, and care must be taken to keep the ground free from weeds.

Saponaria cæspitosa and *ocymoides* are capable of taking care of themselves almost anywhere, and they are of the thoroughly useful class of rock plants.

Saxifraga Andrewsii, *longifolia*, *pyramidalis*, *oppositifolia*, *ceratophylla*, *hypnoides*, *muscoides*, *cristata*, *cordifolia*, *crassifolia*, *geum*, *juniperina*, *umbrosa*, and a dozen more can be brought into service where the rockery is extensive and well managed. These are not particular about soil, but the soft leafy kinds require much moisture, and the hard crusty kinds require to be in dry positions, amidst stones or on the faces of rocks, but with a good depth of earth for their roots to ramble in. The saxifrages should have the best attention of every lover of choice hardy plants.

Scabiosa Webbiana, *graminifolia*, and *atropurpurea nana* will grow in common soil and almost any situation.

Sedum rupestre, *Sieboldi*, *spectabile*, *pulchellum*, *glan-cum*, *spurium*, *maximum*, *aizoon*, and *telephium* are all lovers of sunshine and a dry calcareous soil, with a grand habit of taking care of themselves. *S. lydium* is a gem for a moist half-shady nook on the rockery.

Sempervivum calcareum, hirtum, globiferum, montanum, soboliferum, tectorum, and *arachnoideum* require light and lime, but they must have something to live on, and therefore it is possible to kill them by starvation—a thing often accomplished by beginners in plant-growing.

Silene alpestris, Schafta, and *Virginica* are three beauties, needing a deep sandy or stony soil, and to be safe from winter damp.

Spiræa bullata, filipendula, palmata, and *lobata* form a fine group; they need a deep moist loam.

Thalictrum anemonoides and *minus* are two quiet plants that will become favourites when well known; any soil will suit them.

Thymus serpyllum, citriodorus aureus, and *lanuginosus* are lovely things for a wall or ruin, and will flourish in the very heart of London if properly provided for.

Tunica saxifraga is a little rosy beauty for a wall or a stony sunny corner.

Veronica prostrata, rupestris, and *spicata* are lovely enough for any honest eye, and do well on a town rockery, with no special care.

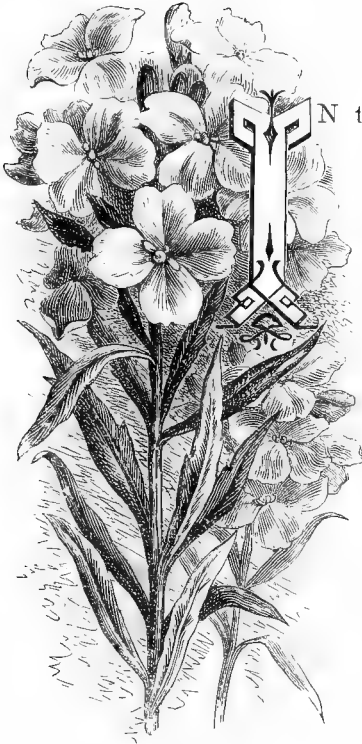




ALPINE WALLFLOWER.

ALPINE WALLFLOWER.

Cheiranthus Alpinus.



IN the First Series the common wallflower is described under its generally accepted name of *Cheiranthus cheiri*. The plant before us bears a name which indicates its close relationship to the wallflower proper, and it is also known as *Erysimum ochroleucum*, which connects it with the common treacle mustard and other four-parted yellow flowering plants of like character. The true wallflower is of universal use in gardens, its sturdy growth, brilliant colours, and fresh spicy fragrance insuring for it general acceptance as one

of the most delightful products of spring. The so-called Alpine wallflowers are not of universal use; but, on the other hand, they have some special claims on our regard as valuable adornments of the rockery and the choice border.

The Alpine wallflower (*E. ochroleucum*) forms a neat leafy bush, nine to twelve inches high, adorned in spring with a fine head of sulphur or pale lemon-coloured flowers. Like the garden wallflower, it is well adapted for planting on walls and ruins, but unlike the more fragrant plant, it is not adapted for the common border, by reason of its susceptibility to winter damp. It is as hardy as any plant of its class, and therefore frost will but rarely harm it, provided it is on a dry soil, and has not become over-luxuriant through good living. It is a point of great importance for the amateur grower of Alpines to bear in mind that the promotion of a free succulent growth is altogether undesirable in the case of all such plants; many of them require an abundance of moisture in their growing season, but a rich soil and a position removed from the free atmosphere and the full play of the daylight are, generally speaking, directly injurious, both as rendering the plants less hardy than is their nature, and also less disposed to flower freely. We often have to recommend a deep nourishing loam or peat for Alpine plants, but it may be observed that we never recommend the use of stimulating manures or soils that are naturally damp and heavy. The mountain flora comprises plants that vary immensely in affinities and requirements; some are at home on the dry, starving rocky bluff, where there is scarcely a particle of such stuff as we call "mould;" others haunt the crowded bog, where the plants form a dense wet mat, and subsist on the black earth that results from the ever-accumulating decay of those that have lived their season or have been stilled by the strong usurpers. But a large proportion of the most beautiful Alpine plants have their roots in deep beds of decayed stone, containing

always some amount of moisture, but often in the summer being saturated with water, owing to the melting of ice and snow on the peaks above them. Those beauties that are so much prized in our gardens will generally thrive on the rockery where the soil consists of sandy loam, with some proportion of calcareous matter, and the drainage is sufficiently perfect to insure that there shall be no lodgment of water in the winter season. As for the *Erysimums*, a poor soil and full exposure are the chief requisites.

The Lilliputian wallflower (*E. pumilum*) is a pretty little Alpine with greyish leaves, the whole plant rarely exceeding one inch in height, but bearing yellow flowers of the same general character as the plant before us. This requires the best of care in its cultivation, and should be seated amidst stones, both to insure continuous moisture for its roots and to protect it from harm.

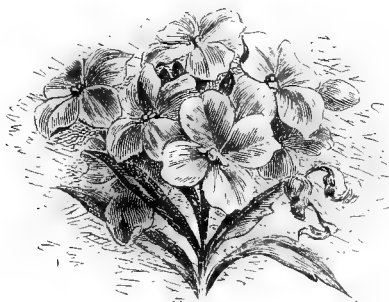
The Rhœtian wallflower (*E. rhoticum*) is a beautiful little thing, worth a place on the choicest rockery. The rock wallflower (*E. rupestre*) and the fine-leaved wallflower (*Cheiranthus tenuifolius*) may be added to the budget as a couple of very choice subjects. The last named has long narrow leaves and a short flower-stem, bearing rather large pale yellow flowers.

The lance-leaved treacle mustard (*E. lanceolatum*) claims notice as a somewhat important plant, the names it bears in the books being at least twelve in number. It comes near to our Alpine wallflower, but differs in growth and leafage. Whatever its exact place, it may be made note of as a good rockery plant; it has two forms, the *major* and the *minor*, the last named being the best. The flowers are of a lemon-yellow colour, very agreeably scented.

Returning to the garden border, where the more robust and fragrant wallflowers show their cheerful green all the winter, and their golden, fiery, and sanguinary flowers in spring, mention should be made of two species of *Erysimum* that are renowned for the splendour of their flowers.

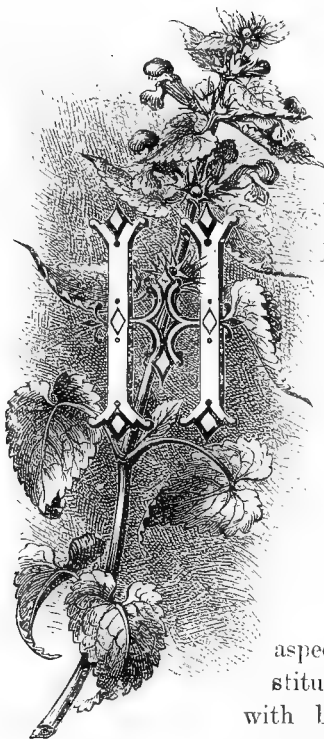
One of these is the Persian treacle mustard (*E. Perofskianum*), a splendid annual, received at the Edinburgh Botanic Garden in 1838 from Dr. Fisher as a native of Cabul, but in *B. M.*, 3,757, it is described, on the authority of Lady Mary Cathcart, as a native of Persia, where it is as great a favourite as the wallflower is with us. This beauty is usually grown from seeds sown in autumn, but the seeds may be sown in March and April.

The other plant is Marshall's wallflower (*Erysimum Marshallianum*), also known as *Cheiranthus Marshalli*. This is always grown from cuttings, as it never or but rarely produces seed. It forms a neat little bush, which in early summer produces a profusion of showy flowers of a buff-tinted apricot. In the early days of the bedding system it was much employed in geometrical colouring.





SPOTTED



THE SPOTTED DEAD- NETTLE.

Lamium maculatum.

ERE is an old friend of the cottage garden. What is it—a species or a variety? And if a variety, what name does the species bear? In the opinion of the writer *Lamium purpureum* (the purple dead-nettle), *L. album* (the white dead-nettle), and the plant before us are but forms of one and the same species. But as they differ in habits and aspects, so also they differ in constitution. The first is an annual with broadish heart-shaped leaves and rosy-purple flowers; the second is a perennial with heart-shaped leaves, more pointed than the other, and white flowers; the third, which is here figured, has leaves of the same form as the last, but spotted with white, and the flowers are purple and somewhat showy. Seen in a large patch in a rustic garden it makes a goodly show, and the grand gardener occasionally takes it in hand to give colour to the rockery or to form an edging.

A handsome near relative of this dead-nettle is a plant with bright yellow flowers and quite stately habit of growth. It is the yellow lamium (*Galeobdolon luteum*), also known as yellow weasel-snout and archangel. For the mixed border and rockery it is a very proper plant, and, though a true native, is, as such, a rarity, and therefore readily obtainable only by purchase. There are other good garden plants of the class—as, for example, *Lamium gargaricum*, the Gargano dead-nettle, a pretty plant, producing bold whorls of purplish flowers; and *L. orvala*, a distinct red dead-nettle, native of the south of Europe.

The evolutionists give such clear accounts of the fashioning of forms by the cumulative influence of circumstances that one may venture to ask questions of them, and hope for categorical answers. Now, here is a question pertinent to the business in hand. Why are the labiate plants so prolific of variegated-leaved varieties? It seems that variegation in plants is not to be regarded as a phenomenon of general occurrence that may happen anywhere at any time, but rather as a family failing, to be looked for in certain quarters only. Many of the best known plants that have been cultivated in many ways, and much observed as wildings also, have not been known to produce variegated-leaved varieties. Thus, we have no variegated-leaved camellias, no variegated-leaved roses, and only one variegated-leaved rhododendron. But amongst the labiate plants these curiosities abound, and may be seen in plenty in old-fashioned gardens. When the bedding system was in high fashion, the golden balm, the silver mint, the white-leaved nettle, the delicate variegated thyme were in great demand, and would be again were the fashion revived of colouring gardens in

geometric patterns after the fashion of carpets and wall-papers. The student of nature—no matter of what sect or school—may be invited to make a survey of these plants, and to meet, if he can, the question we have propounded to the evolutionist. And the amateur gardener who makes no pretensions to scientific observation may find some entertainment in collecting the plants and comparing their characters. We will here make a brief catalogue of them that may prove useful in many ways. They must be given as they appear in the books, or identification may be difficult.

Ajuga reptans fol. var. is the variegated bugle; *Galeobdolon luteum fol. var.* is the variegated yellow dead-nettle, a fine plant for the border; *Glechoma hederacea fol. var.* is the variegated ground ivy, one of the humbler beauties of the rustic garden; *Hyssopus officinalis variegatus* is the variegated-leaved hyssop; *Majorana vulgaris aurea* is the golden-leaved marjoram that has become a favourite edging plant for the flower beds in the London parks; it is a brilliant thing of its kind. *Melissa officinalis fol. var.* is the celebrated golden balm, once a leading plant for “ribbon borders,” the leaves being heavily edged and blotched with full orange-yellow. Of the mint family we can name three plants—*Mentha rotundifolia fol. var.*, *M. sylvestris fol. var.*, and *M. viridis fol. var.*; but as they are not particularly beautiful, we will not praise them. The very pretty variegated rosemary, *Rosmarinus officinalis fol. var.*, is one of the best of shrubs for a ruin, or a dry starving-place on a rockery. The sage family offers us *Salvia fulgens fol. var.*, *S. officinalis fol. var.*, and two others, one with golden, the other with purple leaves. The

variegated thyme, *Thymus officinalis fol. var.*, is a bright plant on a dry chalky soil, but a poor thing in a London garden. We here close the list, and repeat the question—Why are the labiates so prolific of variegated leaves?

“There never yet was flower fair in vain,
 Let classic poets rhyme it as they will;
 The seasons toil that it may blow again,
 And summer’s heart doth feel its every ill;
 Nor is a true soul ever born for naught;
 Wherever any such hath lived and died,
 There hath been something for true freedom wrought,
 Some bulwark levelled on the evil side:
 Toil on, then, Greatness! thou art in the right,
 However narrow souls may call thee wrong;
 Be as thou would be in thine own clear sight,
 And so thou wilt in all the world’s ere long;
 For worldlings cannot, struggle as they may,
 From man’s great soul one great thought hide away.”





MINOR CONVULVULUS.



MINOR CONVOLVULUS.

Convolvulus minor.

CONVOLVULUS MINOR—the preferable name of this plant—is also known as *C. tricolor*, an appropriate but indefinite name. The prominent colours of the flower are blue upon the limb, yellow in the centre, with an intermediate ring of white. The average height of the plant is a foot to a foot and a half; the leaves are spatulate, fringed with hairs; the whole plant is downy, and of a full green colour.

This extremely beautiful plant is a hardy annual, which may be sown in autumn or spring. It requires a rich, mellow soil and an open situation to develop its characteristics fully; and, when liberally cultivated, it flowers for three months continuously, and a large mass of it presents a most refreshing and exquisite appearance in the early hours of the day. It may, in one sense, be regarded as a *sunflower*, and there is some utility

in so regarding it, for if a bed on the south side of a house be planted with *convolvulus minor*, very few of the lovely flowers will ever be seen from the windows. But, on the other hand, a similar bed on the north side will display its flowers to the windows freely, for nine-tenths or more of the whole number produced will be found to face the south and the south-east.

The major convolvulus belongs to another section of the great family of convolvulaceæ, of which there are four conspicuous genera in cultivation. The genus *Culystegia* includes our great white hedge bind-weed (*Culystegia sepium*) and the pink-flowered *C. pubescens*, of which there is a double variety in cultivation, the flowers of which, though poor, may be likened to roses. The genus *Ipomœa* comprises *Ipomœa purpurea*, the major convolvulus, and a number of resplendent species, some of which are hardy, but others require strong heat to start the seeds and green-house culture to produce the flowers. One of the most beautiful of this section is *I. rubro-cærulea*, with large flowers of a brilliant sky-blue colour. It is a green-house perennial, native of Mexico. The genus *Convolvulus* includes the subject of our plate; also *C. scammonia*, which produces the scammony of commerce, and the little wayside convolvulus, that makes a fairyland of many a mile of dusty English roadside and railway bank—this pretty pink-flowering species being known as *C. arvensis*. The genus *Pharbitis* consists for the most part of American annuals, some of which are usually classed under *Ipomœa*.

One of the most important members of this order is the Sweet Potato (*Convolvulus batatas*). This is largely cultivated in the tropics and the south of Europe for its edible roots, which are sometimes of a club shape, or that of

an oblong and extremely ugly potato, of a reddish colour. When cooked they are excessively sweet, and scarcely attractive in appearance, and certainly need for their appreciation a palate trained to their liquorice flavour. When the potato of the present day was as yet unknown in this country, the sweet potato was regularly imported, and no doubt was very much enjoyed by the English people as a wholesome article of diet. Being usually of greater size and weight than the potatoes we are now accustomed to, there is a special reserve of fun in the exclamation of Falstaff, "Let the sky rain potatoes and hail kissing-comfits," "Merry Wives" (act v., sc. 5). The coarse red, fleshy root of the sweet potato is employed by Shakespeare in another place, to help out the description of "the devil luxury," "Troilus and Cressida" (act v., sc. 2).

These are not the only examples of useful species of convolvulus. The Mexican plant *Ipomœa purga* produces the jalap of commerce, and *Convolvulus dissectus* abounds in prussic acid, the liqueur known as Noyau being prepared from it, with the aid of alcohol. Finally, and omitting much that might be said if the subject were formally set before us, it may interest the reader to know that the oil of rhodium, which is said to be so attractive to rats as to cause them to swarm to it without fear, even if held in the hand of a ratcatcher, is the produce of a convolvulus known as *Rhodorhiza*.

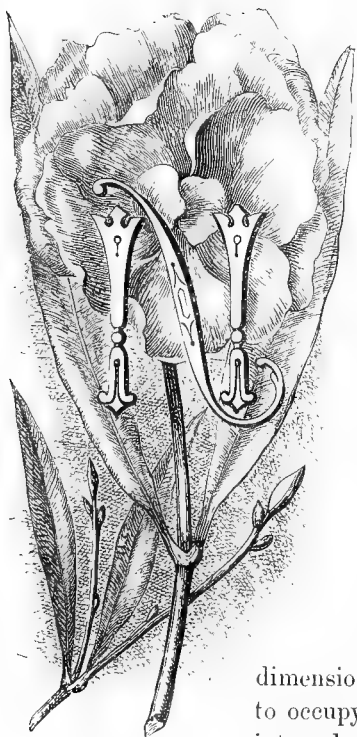
It appears to be a long journey through the vegetable kingdom from our pretty and harmless *Convolvulus minor* to the extremely beautiful but pernicious British weed Dodder, *Cuscuta epithimum*. But to the botanist the transition is easy and natural, for the dodder, which by its parasitic growth of crimson stems strangles the plant it

feeds on and so renders the ground barren, is a quite characteristic member of the great order Convolvulaceæ, producing minute flowers of great beauty of a true convolvulus shape. A prominent characteristic of the order is the production of an imbricated calyx, two of the sepals being quite exterior to the other three. But a still more remarkable convolvulus is the East Indian plant called *Neuropeltis racemosa*, the flowers of which are produced in the centre of bracteal leaves, as though a flower should grow out of the palm of one's hand, or as tiny clusters of leaves occasionally appear in the very centre of large cabbage-leaves. In this the imbricated arrangement of the calyx is found to afford a trustworthy family likeness.





OLEANDEF



THE OLEANDER.

Nerium oleander.

OF many of our "fine old-fashioned plants" can equal the oleander in beauty and usefulness, and whatever goes to make up the quality called "intrinsic value." Not only is it always worth keeping as a true household plant—a sort of patrician laurel—but it improves with age, and can scarcely be too large for the enjoyment of its buxom beauty, provided it does not grow, as the Vicar's family picture did, to

dimensions in excess of the place it is to occupy. Occasionally, but at rare intervals, we meet with family oleanders

that are creditable to their owners, and one such we remember in an especial manner, having met with it several years in succession at the Peterborough summer flower show, where we have manifested our approval of it by the award of a special prize, and perhaps a commendation in addition. This fine plant—if we may trust our memory—may be

described as about six feet in height and four feet through, leafy from top to bottom, and, when at its best, well sprinkled with glowing flowers that might be likened to roses in form and colour, averaging in size about double that of our coloured figure. A considerable number of family oleanders are kept in dark conservatories or lumber-rooms all the winter, and in some obscure corner out of doors all the summer; and, although they grow a little, they are always bare, and rarely flower. All that ails them is starvation, and the remedy, therefore, is to be found in a little generous cultivation.

The oleander is a river-side plant, inhabiting parts of Western Asia and Southern Europe. All river-side plants like good living, being born to mud, water, and warmth. But a cool conservatory, safe from frost, suffices for the preservation of the plant during winter, when it should have a little water occasionally, and a temperature never lower than 35° , and for the most part not below 40° . When starting into growth in the spring, the plant needs a warm place, and therefore should be put into a sunny greenhouse, and have liberal supplies of weak manure-water. This treatment will promote a free growth, and as the shoots made this season will, if well ripened, bloom the next, it is advisable not to prune the plant at all, although, in common with all such things, it must be pruned at times to keep it within bounds, and to regulate the general contour. It is, however, of importance for the owner of an oleander to bear in mind that when the young shoots are cut back, the next year's flowers are removed with them.

When the flowering is over, the plant should be carefully taken out of the pot, and a considerable portion of

the old soil should be removed from the roots, and then it should be re-potted in the same pot, or in one only a size larger, with a rich loamy soil, and be placed again in the greenhouse. A quick, vigorous growth in the spring is above all things to be desired; but this can only be secured by means of warmth, sufficient moisture and air, and annual renewal, wholly or partly, of the soil. It is a good rule with all old family plants to turn them out once a year, and remove a portion of the old soil; then to put them into the same pots, and fill in firmly with a mixture of turfy loam and rotten hot-bed manure. Occasionally they must have larger pots, but they may be kept in the same pots for several years in succession if aided as advised, and they will grow sufficiently, and flower freely—more freely, perhaps, than if encouraged to make a strong growth by shifting into larger pots. A certain amount of vigour we must have, and the inexperienced amateur should guard himself against being led away by the common superficial talk about “starving a plant into flower.” The process is often carried so far that the plant fails to flower through sheer debility, and a frequent victim of the fallacy is the noble oleander.

This handsome shrub is one of the most poisonous of its class, and therefore should be handled with care, for if the hand is cut when pruning it, a dangerous wound may be the result. In Dr. Hogg’s “Vegetable Kingdom” occurs the following respecting it:—“It is one of our most beautiful window-plants when covered with its large, rose-like blossoms; but in these blossoms the weapon of death resides. During the Peninsular war a number of French soldiers who went out foraging near Madrid returned laden with the fruits of their search. One of the number, with

the view of securing some wood to make skewers for the meat, cut a quantity of oleander boughs, and, having stripped them of the bark, used the wood in the meat. The result was that, out of twelve who ate of the roast, seven died, and the rest were dangerously ill. The poisonous principle is so subtle that its exhalations alone are sufficient to cause serious accidents, and even death, to those who recline or sleep for any time under their influence.”

The oleander, or rose-bay, is very respectably connected. It is a member of the natural order of Dogbanes (*Apocynaceæ*), all of which have a milky juice, and more or less poisonous properties. They are of considerable importance to the gardener, as in this order occur the yellow-flowered Allamanda, the white-flowered jasmin-like *Tabernæmontana*, the fragrant *Rhynchospermum*, and the glorious crimson *Dipladenia*.





SNOWY CROWFOOT.

SNOWY CROWFOOT.

Ranunculus amplexicaulis.



IN the description of the double buttercup this plant is mentioned as one of the gems of the crowfoot family. It has the peculiar merit of “taking by storm”—but very quiet storm—the admiration of the critic who may have dared to entertain doubts of the merits of Alpine plants. This beauty is a true mountaineer, and has all the characteristics of the genuine Alpines—neat growth, dwarf habit, elegant leafage, large and lovely flowers. The typical ranunculus has lobed or divided leaves, but this plant has entire leaves that clasp the stem, and have none of the

full green colour of a typical ranunculus, but are of a pale sea-green colour. Those that spring from the root form a suitable setting for the lovely white flowers that rise

above them, of which there are sometimes as many as five on a stem; but they occur in twos and threes more commonly. In form and colour the plants are as satisfying as any known Alpine; they are perfect in smoothness, and as pure as the snow itself that oftentimes forms the cradle of the plant on the higher levels of the Pyrenees and Carpathians.

The delicate beauty of this plant will suggest that it needs much care and skill in its cultivation; but the truth is it needs none, being of a most accommodating habit, and apparently quite "at home" on a fairly good rockery in any London garden.

There are many first-class Alpine plants of similar adaptability to the varying conditions of life in gardens. It is, indeed, no difficult matter for the experienced cultivator to select, say, two to three hundred species, comprising plants of the highest order of beauty in their several classes, all of them calculated to thrive under the most ordinary conditions of cultivation. It may be of some service to the reader if we sketch out the lines on which such a selection should be formed, and we will arrange the subjects in alphabetical order.

Alyssum montanum and *saxatile*, with, perhaps, *alpestre*. The first is well known as a brilliant heap of gold in spring. These require a sandy soil and an open position to be quite safe against winter damp.

Anemone apennina, *blanda*, *fulgens*, *hepatica*, *angulosa*, *nemorosa*, *ranunculoides*, *sylvestris*, a lovely group; to which may be added for the borders *A. japonica*, and the section of the florists under *A. coronaria*. The strong growers require rich, deep, moist loam; the more delicate kinds a light loam with a large proportion of grit.

Anthyllis montana and *vulneraria*, suitable for dry soils.

Aquilegia alpina, *cærulea*, *Canadensis*, and *Skinneri*. These require to be regularly renewed from seed, as they are biennials, though classed as perennials. For the most part they sow their seeds in plenty, and provide for a succession. Any good soil will suit them.

Aubrietia purpurea, *grandiflora*, and *Mooreana* are invaluable for beds, borders, and rocks.

Aster alpinus, *versicolor*, and *altaicus* are suitable for any dry spot in a sunny situation.

Calandrinia umbellata, a tiny beauty, to be raised from seeds every year.

Campanula fragilis, *garganica*, *cæspitosa*, *rotundifolia*, *turbinata*, *carpatica*, and *pulla*, a fine lot, needing only sunshine and sandy soil.

Corydalis lutea and *nobilis*, very gay for rocks and walls.

Didanthus deltoides, *neglectus*, *cæsius*, and *petræus*. These require careful cultivation; and having that, the air of the city of London would be good enough for them.

Dielytra eximia and *formosa* will thrive in any soil, and are brilliant town garden plants.

Dryas octopetala is the sweet little mountain avens. This and *D. Drummondii* require a moist peat soil.

Erinus alpinus, a mossy miniature that requires the comfort of old stone or brick rather than of earth for its roots. Try it on the top of an old wall, as well as in a very sandy dry border.

Erysimum ochroleucum and *pumilum* will thrive on borders, but are more at home on rocky shelves and dry nooks in ruins.

Gentiana acutis, *Andrewsi*, and *asclepiudea*. These are the best gentians for a town rockery. A sandy loam with plenty of stones in it will suit them perfectly.

Iberis sempervirens, *corifolia*, and *Gibraltarica* are the most useful of this genus, and all they require is a good loamy soil and the fullest daylight.

Iberidella rotundifolia is a beautiful tap-rooted plant that must be raised from seeds on a good, deep, sandy soil.

Helianthemum annuum, *rosmarinifolium*, and *tuberaria* are good town plants that love the sun, but do not object to a little shade, and any soil will suit them.

Lithospermum prostratum and *petraeum* are two gems for the sunny part of the rockery where they can spread over stones and make carpets of blue flowers.

Myosotis azorica and *dissitiflora* are the best of the forget-me-nots for very choice purposes.

The remainder are noted under "Siebold's Primrose."

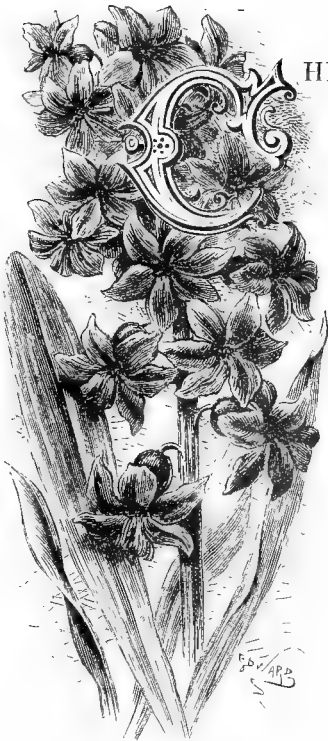




HYACINTH

HYACINTH.

Hyacinthus orientalis.



GHIEF amongst a thousand is the princely hyacinth, one of the best of domestic flowers, one of the most surprising exhibition flowers, and a very important item in the industry and commerce of our near relations and neighbours, the people of the Netherlands. To many a purchaser of hyacinth bulbs the question will occur, Why cannot they be produced at home? And, again, a still more serious question, Why is it necessary to purchase every year in order to obtain flowers of the finest quality? Those who have seen the steps and stages of the cultivation on a proper hyacinth farm at Haarlem are

fully satisfied as regards those important questions. The soil is of a somewhat peaty character, and may be described as a dark-coloured sand containing much humus. It rests

practically on a bed of water—in other words, there is water everywhere within from nine to thirty inches of the surface, and hence the custom of building upon piles, because dry foundations are not obtainable. Experience has taught the Dutch growers that the hyacinth requires liberal nourishing without stimulating agencies of any kind, and that water is as needful to it as earth; it is, in fact, semi-aquatic. Now see how the requirements of the plant are satisfied by the cultivator. A tract of the sandy soil is first heavily manured with material derived from the cow-byres, and is then planted with potatoes. The crop of potatoes being removed, the rankness of the manure is gone, and the land is ready for hyacinths, which accordingly are planted. The smallest offsets require five years' cultivation to become handsome, marketable bulbs, and the course of cultivation now concerns us.

The bulbs being planted in the autumn are left to the mercies of the weather, for no frost ever injures them in the ground. But in spring, when the green leaves appear, large, light hurdles, made of reeds, are employed to protect them in the event of severe frost, which will sometimes even penetrate the protectors, and cause the leafage to assume a golden-yellow colour, giving a singular appearance to large tracts of land. But the time of severe frost passes, and the flowers appear. It is often stated in books that the Dutch growers do not allow the bulbs to flower; but that is, happily, a mistake, and one of the most surprising displays of colour may be seen every year, in the later days of April and the early days of May, in the bulb-grounds in the pleasant suburbs of Haarlem. But while flowering does no harm, it is otherwise with seed-bearing, which is strictly prohibited, and consequently

the instant that seed-pods begin to form, the flower-stems are pulled out, and the flowers are variously disposed of.

We turn next to the cultivation requisite for the enjoyment of the flowers. It consists, in the first place, in the purchase of good bulbs; they should be hard and heavy. If neat in form, all the better; but that is not of vital importance, because some sorts are naturally ugly. A hard, heavy bulb, with only one centre of growth, is to be preferred to one with two or more centres of growth; in other words, it is enough to secure one fine spike of flowers; but tastes differ, and we have seen as many as fourteen from one bulb, presenting a most beautiful appearance. Any light, rich, sandy soil will serve for pot culture, and when beds are prepared for hyacinths, leaf-mould and sand may be incorporated in quantity with advantage, unless the soil is naturally of a sandy nature. To plant early is of great importance, and to give water in plenty after free growth has commenced is of not less importance. As a rule, hyacinths do not obtain sufficient water when grown in English gardens, and that is one reason why the bulbs flower so poorly in succeeding years. To obtain fine flowers, fresh bulbs must be purchased annually.

Having raised good stocks of home-grown bulbs, we can aver that their production in this country is at once possible and easy; but we believe, as a rule, it is cheaper and more satisfactory to purchase when fine flowers are required. To raise a stock it is necessary to follow the Dutch system in its leading points, taking care not to allow the formation of seed, and being careful also to promote a free leaf-growth after the flowering by regular and liberal watering. Those that have flowered in pots should be placed in frames to protect the delicate leaves from

the weather, and to mitigate the check consequent on removal from the greenhouse. But, after all, the best way to deal with bulbs that have flowered is to plant them out in odd places, more especially near sheltering hedgerows, and there every year they will produce small spikes of flowers that will prove most acceptable for the table.

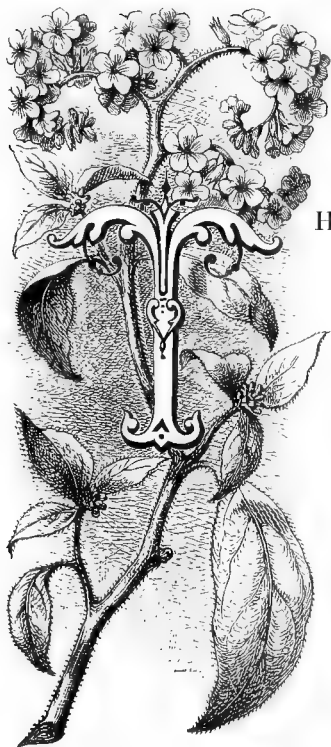
When hyacinths are grown in glasses, the bulbs should be so placed as not to touch the water. The glasses should then be wrapped in flannel, and put into a dark, cool closet. This mode of procedure will promote the formation of roots before the leaves rise; and when the roots have begun to grow freely, the glasses may be brought out and placed in the window. The single varieties are the best for glasses. For beds and pots it is a good plan to have a larger proportion of single than double kinds. Beautiful beds may be formed of cheap mixed bulbs; but for pot culture named varieties should be preferred.

The hyacinth figured is the popular variety known as Baron Von Tuyll.





HELIOTI



THE HELIOTROPE.

Heliotropium corymbosum.

THE heliotrope is in some form or other one of the most ancient of flowers; but the one before us, being a native of Peru, is of necessity modern, its introduction dating from the year 1800. In other papers on marigolds and sunflowers we have remarked that *all* flowers are sunflowers more or less, because they look towards the sun; and hence it is that many, such as the minor convolvulus and the tigridia (to name only two out of thousands), can only be seen to advantage when they are on the north side of the spec-

tator—a matter of some importance in the arrangement of gardens. But, not to go into that larger matter, we have before us now a heliotrope the name of which no one can account for. It is the turnsole of the garden—the flower that turns to King Sol; but it has no special claim to be so distinguished. There is, indeed, another Peruvian plant that has a claim, and it is the helianthus, the yellow

sunflower that has become a symbol of solar glory in Peruvian art; in modern æstheticism it stands for art and taste generally, while on the village signboard it signifies that the sun is always shining for people who are thirsty and have money in their pockets.

Probably neither the botanist nor the archæologist nor the student of Ovid can tell us what was the flower to which Clytie was changed when she died of love for glorious Apollo. But of course it was a sunflower, and one that

“Turns to her god when he sets
The same look which she turned when he rose.”

The reader will easily find the story in the fourth book of the “*Metamorphoses*.” But the translation by Sandys may not be at hand; and as it has a certain quaintness, an extract may be seasonable here:—

“She with distracted passion dies away,
Detesteth company; all night, all day,
Disrobed, with her ruffled hair unbound,
And wet with humour, sits upon the ground:
For nine long days all sustenance forbears:
Her hunger cloy’d with dew, her thirst with tears:
Nor rose; but rivets on the god her eyes,
And ever turns her face to him that flies.
At length, to earth her stupid body cleaves:
Her wan complexion turns to bloodless leaves,
Yet streak’d with red; her perish’d limbs beget
A flower, resembling the pale violet;
Which, with the sun, though rooted fast, doth move;
And being changed, changeth not her love.”

We seem here to have the story of Venus and Adonis modified, and with a tamer climax; but it brings us to the flower before us, which may be said to “resemble the violet” in its colour, its odour, and its domestic tone of

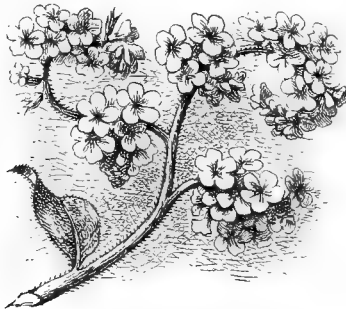
unobtrusive beauty. It was the favourite flower of Margaret Fuller, as the carbuncle was her favourite stone ; for that strong-minded woman believed in omens and symbols, and possibly in amulets, to avert the evil eye. And it is fit to serve as a symbol or an emblem, as to many who are less romantic than the Marchesa d'Ossoli it is a reminder of cherry-pie, apple-pie, and essence of bitter almonds. There is a point where poetry and prose must meet, and we suppose it to be somewhere in the region of facts ; and in that region the heliotrope is an interesting beauty, and one of the most desirable plants wherewith to perfume a conservatory or a garden, or to fill a button-hole.

The place in which the heliotrope displays its qualities best is on the wall of a warm conservatory, where it will reach a height of four, six, or even ten feet, and produce its fragrant flowers all the winter long. It is best known as a bedding plant in the flower-garden, where it sweetens the evening breeze most delicately. For whatever purpose it may be grown, it should be treated as a tender greenhouse plant. It is less hardy than the pelargonium, the calceolaria, and the petunia ; it should therefore be planted last and taken up first, for the slightest touch of frost may be fatal to it. But, having sufficient warmth, it is a very accommodating plant, growing freely in any good soil, and best in a rich light loam. The varieties are mostly of compact habit and dwarf growth, and do not, therefore, need any pinching and training when planted out, but may be left to spread and flower in their own way.

To raise a stock of heliotropes for bedding, it is necessary to put a few old plants into a moderate heat soon after the turn of the year ; and when these bristle with new shoots, cuttings may be taken and struck in a

temperature of 70° . The light, sandy mixture commonly used in the propagation of plants in spring may be employed; and as soon as the cuttings have begun to grow freely, they should be potted separately in small pots, or be pricked out into large shallow boxes. To plant them out before June will be to expose them to the risk of damage. At all events, the 25th of May should be seen safely past ere they are committed to the ground, for that is the latest date on which a spring frost has been experienced. When growing freely, heliotropes require more moisture than pelargoniums or petunias; therefore it will be well, during hot dry weather, to supply them with water liberally.

Amongst the garden varieties, the best are *Duchess of Edinburgh*, *Bouquet des Violettes*, *Jersey Beauty*, *Morceau*, *Bouquet Perfume*, and *White Lady*.

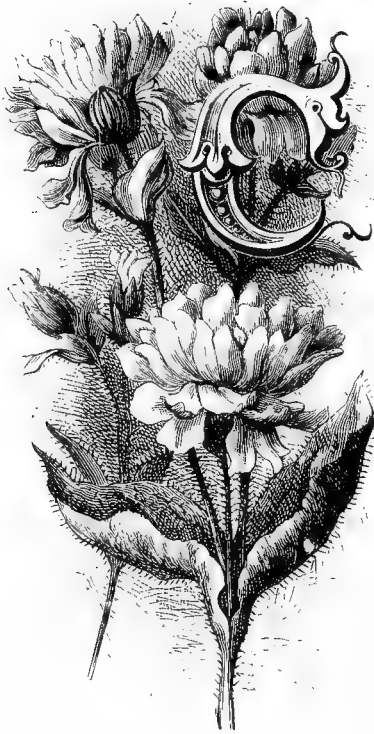




DOUBLE RED CAMPION.

DOUBLE RED CAMPION.

Lychnis dioica, fl. pl.



CAMPIONS are common flowers, but their names are reminders of their once noble uses. The campion is the champion's flower; it was ready to hand on the skirts of the wood and the hedgerow when the field games were in progress, and furnished flowers for the garland of the victor in colours white and red. Any one who will indulge in a dream of bygone customs in such a romantic spot as the great amphitheatre of Mayborough, or even the adjoining Arthur's Round Table near Lowther Castle,

will soon perceive how the handiest flowers were necessarily promoted to honour, and it will be found, on searching the coppice and hedgerows near by, that **campions**, or champion-garland flowers, abound there.

The young botanist has to pass through a trial in the study of the genus *Lychnis*, for in collecting hedgerow specimens he will be troubled with the distinctions between *L. vespertina*, *L. diurna*, and *L. dioica*. He will be more perplexed, perhaps, by the diversity of forms and colours in flowers that appear to be specifically the same, some having narrow, others broad petals—some being white, others rich carmine or purplish-red. There are three species in the best books, and any number in the worst. The wild flower hunter will easily obtain twenty kinds, fairly distinct, and will be puzzled about all except the pure white, and they will be classed as *L. vespertina*, and then what will be done with the rest? Remembrance of our own troubles takes us back to happy days when such troubles were delights; and it takes us back, too, to the discovery which we accomplished by innumerable comparisons and reflections.

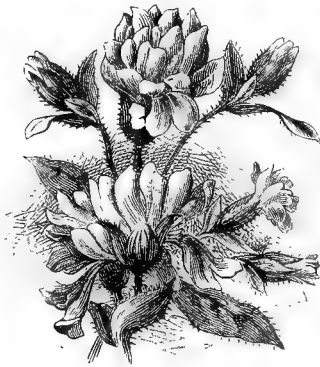
These three so-called species are but the more distinctive forms of *one and the same species*. The ruling characters of the plant are the same all through; the variations are such as we are accustomed to in the observation of vegetable life, and really ought not to have perplexed us at all. The wary Bentham makes two species of them; but Dr. Deakin ("Florigraphia Britannica") puts them under one head, as varieties of *L. dioica*, the white campion. The interest attaching to this plant will be best understood from Deakin's note, as follows:—

"This is a remarkable species of *Lychnis*, from the circumstance of its flowers being dioecious and of different colours. In the illustrations of these states we have represented the white-flowered variety with pistils only, producing capsules and seed, and in the red a specimen with stamens only, and consequently barren; sometimes,

however, flowers are found with both stamens and pistils. The white and red flowered plants have been by some authors made distinct species, the red-flowering plants having the petals with deeper, narrower, and more spreading lobes, and the capsules rounder, with the valves recurved, while the white-flowered one has broader, less spreading lobes to the petals, ovate connate capsules, and the valves of erect teeth. We do not, however, find this character sufficiently constant: the petals both of the red and white variety vary considerably in width, the shape of the capsule is not constantly the same, and the teeth of the white variety are as frequently reflexed as erect. Both these varieties are occasionally cultivated in gardens, and frequently become double and very ornamental, but are liable, unless care is taken of them, to return to the single state."

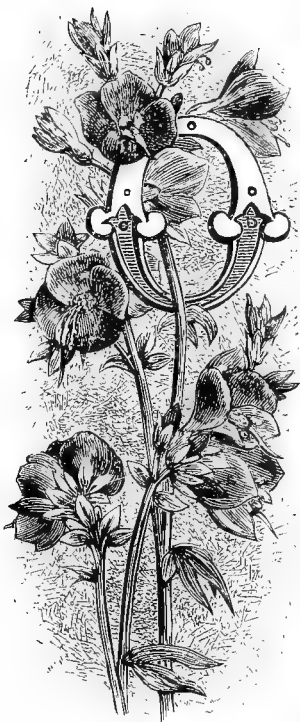
The double variety which forms the subject of the plate is one of the most splendid garden flowers of its class—humble indeed, but in its day of glory unique in its display of colour, which differs from all the single varieties, perhaps owing to the accumulation of power resulting from multiplicity of petals. We have occasionally endeavoured to match it for colour in a great garden where myriads of lovely plants were blooming. We have compared it with calandrinias, with many dianthus, and more particularly with that wonderful bit of colour, *Dianthus hispanicus*; but it remained unmatched at the end of the story. An advantage of the double variety is its dwarf growth: very different indeed to the single in all its states, when happy on a moist bank, a little shaded by trees. The ragged robin (*L. flos-cuculi*) gives us a double variety which is quite worth having, but is not equal in splendour to the plant before us.

These double varieties require a little care, or for some reason or other they pass away and leave no sign. The single plant will grow almost anywhere. We have seen whole meadows of it in stony ground near Broadwater, in Sussex, and have had the most glorious banks of it in rich moist loam in our own wild garden. The ragged robin we have seen making a rosy-coloured hay grass on the skirts of Axe Edge, where it had nothing but stones to live upon, with a plentiful rainfall, and took the place of grass, because in those particular hay-fields very few grasses would grow. But these doubtful varieties must be treated as Alpine plants; they should have a deep sandy loam for their root-holding, and in dry weather should be treated with water, for every lychnis loves moisture, and may soon be killed by drought.





JACOB'S LADDER.



JACOB'S LADDER.

Polemonium caeruleum.

NE of the most interesting of the architectural adornments of the abbey church at Bath is least observed or looked for by visitors, for the good reason that it is hidden away on the west side, which is in a kind of close, and hemmed in by houses. But this west side is pierced by a magnificent window of seven lights, supported by turrets, on which are sculptured the details of Jacob's dream: there are the ladders, and the angels ascending and descending. It is a hard, realistic, and very stony rendering of a story that is generally and properly regarded as subjective

and spiritual and prophetic. The architect might have adorned those turrets with the ladder-like leaves of the polemonium, and he might have presented the angels in a less cumbrous manner, and, by means of a little architectural ingenuity, have avoided the ludicrous expedient of placing some of them on the ladders head downwards,

to indicate the direction of their movement. But he elected to be objective, and despite the grotesqueness of the design, the effect is at once picturesque and noble, and the story is told with unmistakable perspicuity. In the year 1499, when Bishop King had a dream of angels on a ladder, which this grand window was to commemorate, there was not much attention given to conventional reproductions of plant form, but they *could* build, and when a floral wreath or capital was needed, they found the means to produce it in a way to command the admiration, and perhaps the surprise, of posterity. This Jacob's ladder, or *Polemonium cœruleum*, appears peculiarly adapted for the purposes of conventional art, and the variegated variety may in respect of its very delicate beauty, combined with its peculiar mechanism of form, be described as essentially an "artistic" plant. As a matter of fact, there is no such thing as an artistic plant, nor can there be; but the term is convenient, and serves in some degree to expound one of our commonest inborn notions.

The polemoniums are related to the phloxes, cobæas, and gillias. There are many species known in gardens. The one before us is not only known as Jacob's ladder, but also as Greek valerian. It is a British plant perhaps, and is certainly to be met with as a wilding in the northern parts of the kingdom, but it is probably only as an escape from the cottage gardens. A large-flowered form of it is known as *Polemonium grandiflorum*. This is quite worth a place in the garden, as it is a true perennial, although described in the books as a biennial. The dwarf kinds (*P. humile*, *P. reptans*, and *P. Richardsoni*) are probably varieties of one species. They are very hardy plants, thriving best in a poor soil and a cold position. Another very dwarf kind is

P. pulcherrimum, which has very bright blue flowers, and is equally worth possessing. Of the rest we can say but little. They are worth possessing, but, in common with many interesting plants, the question arises, How shall we obtain them? In Mr. Ware's catalogue seven kinds are entered, comprising all those above named, and in addition the white-flowered variety of the plant now before us. Perhaps for the most hungry lover of polemoniums seven sorts will be enough, and we will not risk recommending any more.

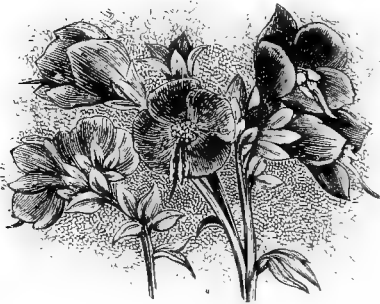
The variegated Jacob's ladder has been remarked upon above as particularly beautiful; and being hardy, it is considered valuable as a bedding plant, making a good grey band different in tone from the cold grey of *Centaurea ragusina* or *Stachys lanata*, which are much prized for their contrast to high colours: the polemonium being of a warm cream colour, tending almost to primrose yellow, is a delicious accompaniment to a mass of blue lobelia, and useful sometimes to make a mixed mass with rose or crimson flowers. This plant is propagated by divisions and cuttings, and a little patience will suffice to insure a good stock of it in one or two seasons. As a rule, it should not be allowed to flower, but when grown as a border plant the flowers are acceptable.

Our plant appears not to have secured a place in the garland of the poets. But in some verses on a flower which grew on Mount Tabor a passage occurs which very nearly fits its homely name and associations:—

“Fair flower! thy wondrous tale I love,
 For angels listen from above—
 And did'st thou deck the very sod
 Where my incarnate Saviour trod?”

Oh, tell me more, thou amaranth flower—
 More of His wisdom, love, and power ;
 Oh, tell me is that land most fair—
 Are all the flowers unfading there ?
 And if a mortal tread that hill,
 Will not each thought soar heav'n-ward still ?
 Will he not feel celestial birth,
 All wing'd for heaven, and loos'd from earth ?

“ Christian ! the glory's all past by
 That beam'd on Tabor wondrously—
 The sounds miraculous are still,
 And earthly winds breathe round the hill ;
 Prophets, apostles, all are gone—
 Nought tells thee where the glory shone.
 Oh, dream not holier thoughts would rise
 'Neath *Eastern* than 'neath *Western* skies,
 But triumph in thy blessed lot—
 Thou canst not be where God is not,”

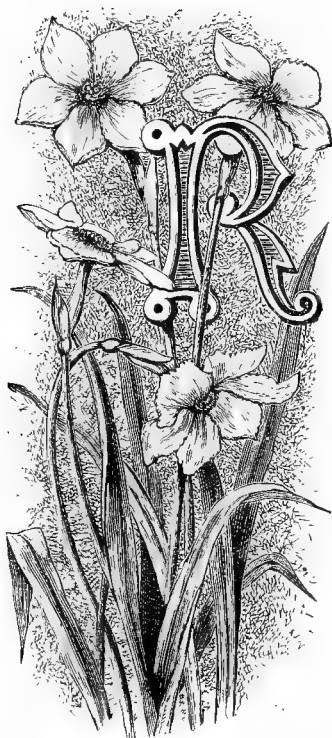




POET

THE POET'S DAFFODIL

Narcissus poeticus.



READERS of old books may be sometimes perplexed by references to daffodils and bastard daffodils, and may even ask why the English narcissus of the meadows is called a pseudo-narcissus. There are two explanations at hand. According to the legend the flower sprang from the dead form of the beautiful boy, who, turning from the favouring smiles of Echo, by whom he was beloved, to admire his own image in the water, fell in and was drowned, the victim of self-love. As the flower was named "Narcissus" to keep him in remembrance, the question will

arise, which amongst many kinds is the fabled narcissus? The flower now figured was and is the veritable remembrancer; it is the true narcissus of the poets, and of its mythical origin let those doubt who dare. It follows that other narcissi are pseudo-narcissi, and as such we

find them entered in the old books, the designation serving to remind us that we must not look for the likeness of the youth in any flower but this lovely *Narcissus poeticus*.

It is the last to flower of all the charming family to which it belongs, and when its snowy blooms are seen nodding to the wind and the sunshine we know that summer is near at hand, for this is not one of the "daffodils that take the winds of March with beauty," for it rarely flowers until the month of April, and in late seasons is not seen until towards the middle of May.

The poet's narciss is a plant of Southern Europe, very freely scattered on the coast-lines of the Mediterranean and Adriatic. It is nevertheless quite hardy in the English garden, and a thriving plant, bearing patiently a certain amount of shade, yet flowering but poorly if much over-shaded. It agrees with other daffodils in requiring a deep, rich, moist soil; and therefore, when planted in a garden where the soil is thin and poor, stations must be prepared for it with some good loam and well-rotted manure.

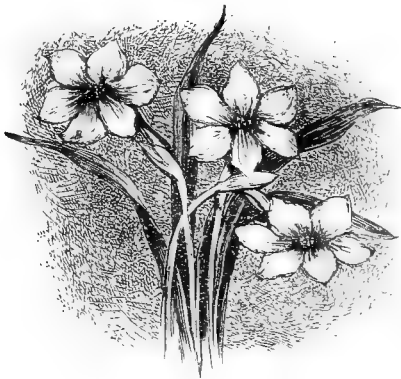
Since the narcissi have obtained scientific attention many fine varieties have been introduced or recovered from oblivion, to the great advantage of our gardens. Amongst the varieties of *Narcissus poeticus* will be found considerable diversity of character, both in the size and disposition of the white perianth segments, and in the colours of the corona or annulus which lights up the centre of the flower. The largest and noblest is called *Grandiflorus*. This is pure white with crimson annulus. *Ornatus* has large flowers with rosy annulus. In *Tripodalis* we have a suggestion of the tripod,

the six segments dividing into two sets of three each, and one set reflecting considerably from the plane of the annulus. *Poetarum* has a crimson crown; *Stellaris* has separated segments like the rays of a star, and *Verbanensis* is a little mite about the size of a sixpence, but with all the characters of *N. poeticus* fully displayed. The double variety called *N. poeticus flore pleno*, also known by the later name of *Gardenæoides* (because it resembles a gardenia), is beyond question one of the finest hardy plants in cultivation. It is waxy-white, with delicate stains of yellow, and may be likened to a rose, but in respect of resemblances comes nearest to the gardenia, both in its looks and its delicious fragrance. To grow this well, a warm position should be chosen on a rich, deep border, for if exposed to cold winds or in a poor soil it will come to no good at all.

Some remarkable hybrids of this narciss are in cultivation, bearing the collective designation of *Narcissus Burbidgei*, in honour of Mr. F. W. Burbidge, author of a valuable treatise on "The Narcissus." These hybrids have larger crowns than the true species, and some of them are highly coloured, ranging from scarlet to pure yellow, the perianth segments being white as in the species.

As we cannot often reach the beginnings of things we must take the legends as they come to us, with their surroundings of poetical fancy. But when we note the close family likeness of a group of myths, as here the story of Narcissus, and elsewhere the story of Adonis, and again that of Iris, the thought is forced upon us that some simple key may be found to explain them all. However, in these pages it will not be expected of us to enter fully into such matters. But we will, in a casual way, make an observation to illustrate the apothegm

“history repeats itself.” Linnæus named the plant known as *Andromeda*, because he found it blooming in the midst of a watery waste, like Andromeda, the daughter of Cassiope, chained to the rock and assailed by sea-monsters, but sure of deliverance when Perseus (the spring) should come. In this there is fancy enough, but no myth. The flower commemorates the lady who competed with the nymphs for the prize of beauty, and it needs only one touch to transfer it from the region of fact, as regards the work of Linnæus. Let us then accomplish the transference. Linnæus did not name the flower, for its name is coeval with its existence. Andromeda was not saved by Perseus; she perished in her chains, and the flower sprang from her grave. Reverse the process, and the classic names of plants become commemorative, and all the mythical features are annihilated.

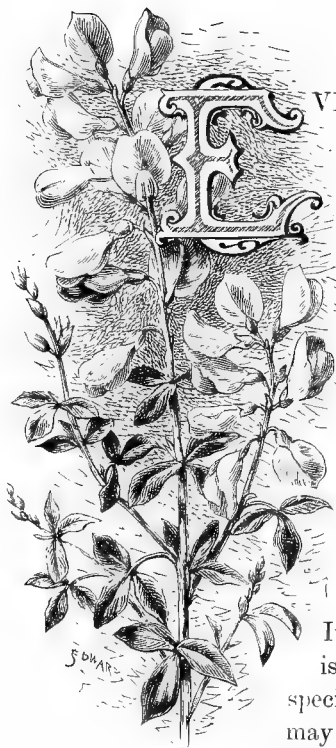




ARTICHO

CYTISUS, OR LEAFY BROOM.

Cytisus racemosus.



VERY one knows this old greenhouse favourite. We have described it as the "leafy broom," because some of the brooms are without leaves. True *Genistas* should have spines; true *Spartiums*, rush-like, leafless stems; and true *Cytisus* should have leaves and no spines. There is no more useful plant in cultivation than this for decorative purposes. It is so nearly hardy, that on a dry sandy soil it can bear an average winter even near London.

Its near relative, *Cytisus alata*, is so hardy at Kew, that many specimens, eight to ten feet high, may be found by the pagoda in the Royal Gardens.

As a pot-plant for the amateur's greenhouse it is one of the easiest to manage; any light loamy soil suffices for it, with as much heat as will insure safety against frost.

During the summer the plant should be out of doors, and care should be taken to keep it sufficiently supplied with water. It has been our practice to pot the plants in larger pots from year to year, until they become too large to be useful, when they are destroyed. As a matter of course, a stock of young plants is always coming forward, these being raised in the usual way from cuttings. Old plants in large pots need not be re-potted for two or three years, but a little of the top soil should be removed in spring, and its place supplied by rich loam or very much decayed manure.

A matter of some importance is that *Cytisus racemosus* is one of the best plants for an amateur to cultivate with a view to acquire experience in practical horticulture. Nice young plants may be purchased to begin with, and it will afford agreeable pastime thereafter to propagate and make specimens to any extent commensurate with conveniences and requirements.

The simplest mode of propagating is by seeds, which the plant produces in plenty. When ripe, they should be sown in pans filled with sandy loam, and kept in a shady spot until the plants appear, a very little moisture being sufficient to persuade them to germinate. When the little plants are tall enough to be handled, they should be potted singly in the smallest pots, called "thumbs," in a light sandy compost, and have careful attention, to save them from being scorched by the sun or debilitated by damp. Air and light they should have in plenty, and be kept as nearly hardy as possible. When the pots are quite full of roots (and not before) they should be shifted into the next size, called "sixties," which are three inches in diameter.

As remarked above, the usual mode of propagating this plant is by cuttings. It is waste of time to make cuttings of the old wood. The young shoots, when two inches long, should be taken, if possible, with a heel: that is, the thickened part of the shoot where it springs from the old wood. Two or three of the lower leaves should be removed from each cutting, and then they should be planted rather close together in a pan or pot filled with a mixture of loam one part to sand two parts, and with an inch or so of sand only on the top. Give them a gentle watering from a fine-rose watering-pot, and place the pan in a frame, and shut it up close. If you must keep it in the greenhouse, a bell-glass should be put over the cuttings.

In managing seeds and cuttings, it is a golden rule to keep them always sufficiently moist, without at any time being injuriously damp. A large proportion of the losses of plants by amateurs are the result of injudicious watering. The plants are distressed by long neglect, and then too much water is given to make amends. Where this carelessness prevails they are as often deprived of air as of water—a scarcely less injurious neglect. Injudicious watering would often prove comparatively harmless were the pots and pans well drained; for when the pots are packed with potsherds at the bottom in a neat manner before the soil is put in, they can endure both dryness and excess of moisture with less harm than when the drainage is deficient. These are matters of great importance in the enjoyment of a garden, and the plant before us is one of the most suitable for a beginner to practise with, because it can endure much without serious detriment to its cheerful beauty.

In the description of the laburnum, at page 57 of the

Second Series, a few hardy trees that are suitable to associate with it are mentioned. We shall now name a few plants that may be grown as companions to *Cytisus racemosus*. One of these is the silky broom (*Cytisus proliferus*), a free-growing shrub, producing in spring beautiful white flowers. The black-podded broom (*Cytisus nigricans*) is allied to the plant here figured, but the leaves and pods are larger and the flowers somewhat smaller. It is as hardy as *Cytisus alata*, and in favourable localities may be planted in the shrubbery. To these may be added with advantage, where there is room for them, *C. laniger*, *C. elegans*, and *C. filipes*. The hardier members of the group comprise *C. capitatus*, *C. argenteus*, and *C. sessilifolius*, three useful border shrubs that flower freely at or about the same time as their gay relatives; *Cercis siliquastrum*, the Judas tree; and *Robinia hispida*, the glorious rose acacia. Nor should we leave unnoticed the common broom (*Spartium junceum*), for while it is of wondrous beauty as a wilding, it has contributed to the English garden varieties with white and double flowers.



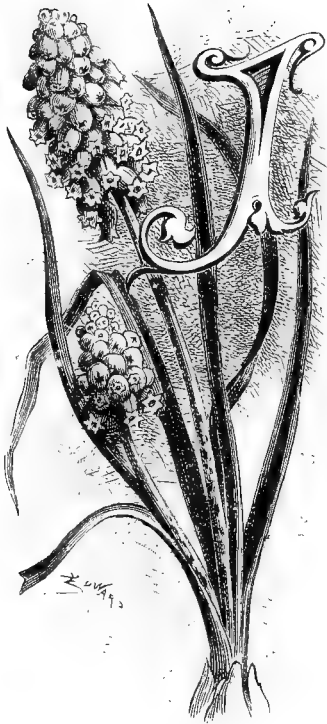


GRAPE HYACINTH

GRAPE HYACINTH.

Muscari botryoides.

JOHN PARKINSON, herbalist and gardener to their dread Majesties James I. and Charles I.—by the latter, indeed, pronounced *Botanicus Regius Primarius*—hath, in his immortal presentment of “*The Paradisus Terrestris*” (1629), set forth for our edification five distinct kinds of grape-flower. They are severally the “darke blew,” the “skie-coloured,” the “branched,” the “white,” and the “blush.” These are now grouped under two species, whereof we have one before us, and the other is the branched or starch-grape hyacinth (*Muscari racemosum*), a reputed British plant, but undoubtedly, when



found wild, a mere escape from a garden. Another of the family, *M. comosum*, the feather hyacinth, was known to

Parkinson in five forms: the "white-haired iacinth," the "Turkie faire-haired," the "great purple," the "faire-haired branched," and the "faire curld-haire."

Grape hyacinths are liliaceous plants of very distinct character, and highly interesting. They have bulbous roots, which increase in number yearly, and offer a ready and simple means of augmenting the stock. This is especially the case with the beautiful *Muscari racemosum*, which will spread about the garden like a weed, and is not at all particular about the soil, provided it is not pasty. Their flowers are peculiar in their exceeding smallness, in form being more like pouches or eggs than bells. The leaves are like those of the vernal squill, but narrower and neater, owing to their stouter texture.

The many varieties to be found in the books may be referred to five species at most. The one before us is well known for its hardiness and exceeding beauty, although it is far from a showy plant. Its leaves are held in an erect position. Its little flowers are like a cluster of tiny berries, on which remain the white teeth of the calyx of the flower that is gone. But the resemblance disappears when it is seen that the imitation berries are really tubular flowers, and the white teeth are the so-called petals which the botanists call the perianth. Of this sweet little plant there are several varieties, the best of which are *M. Heldreichi*, which is of larger size in all its parts; *pallidum*, which has sky-blue flowers; and *album*, white.

The branched grape hyacinth (*M. racemosum*) is occasionally met with as a wilding in the southern counties, but is usually regarded as an escape from gardens, this and other species being natives only of Southern Europe and Asia Minor. This has long, prostrate leaves, from amidst

which rise dense clusters of egg-shaped flowers of a dark purple or cobalt-blue colour, with distinct white limb or perianth. The varieties are many, but it is sufficient to name *M. commutatum* and *M. neglectum*.

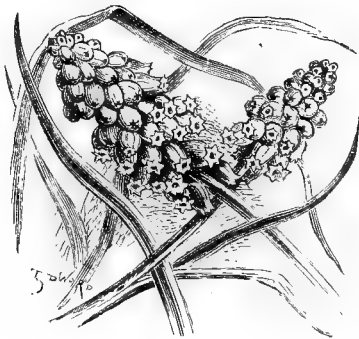
The feather hyacinth (*M. comosum monstrosum*) may perplex the student of plant form who is not yet familiar with the simple means adopted by nature for making sister plants very unlike one another. In this the divisions of the flower are cut into wavy filaments, and the appearance of a feather is the result.

The Armenian grape hyacinth (*M. Armeniacum*) is a rare and most beautiful species, or perhaps a variety of *M. racemosum*. Its flowers appear later than the others in a dense spike; their colour is a rich dark blue. Closely allied to this is *M. szovitzianum*, also flowering late.

The musk hyacinth (*M. moschatum*) is as scarce as the feather hyacinth, and equally worthy of attention. It is not a showy plant, but its delicate musky fragrance commends it to our favourable attention. In its normal form the flowers are of an unattractive yellow or yellowish-green colour, and would often be unnoticed except for their fragrance. But we are not restricted to this ordinary form when in want of musk hyacinths, because the variety known as *M. luteum* is of a beautiful sulphur-yellow colour and a waxy texture, and is richly scented.

All these pleasing subjects are of an accommodating nature, and need no special cultivation. A rich, deep, sandy loam will suit them better than any other soil; but any soil that will grow a daisy or a daffodil will serve the purpose. But they want something, or how shall we account for the scarcity of plants that naturally multiply and take care of themselves for the replenishing of the

earth? What they really want is *protection*. These and many more sweet things are systematically destroyed by the spade, for they die down and leave no mark that the untaught eye can see. Then comes the spade, the ground is dug, their bulbs are cast forth as rubbish, and they are seen no more. This kind of destruction is always in progress, and comes into full operation when a new occupant enters an old garden, wherein for years, perhaps, collections of choice things have been assiduously accumulated. Beware of the spade in the garden of hardy plants. Nine times in ten it has no business there. For every hardy plant a suitable station should be prepared, unless the natural soil is well adapted for it; but that being done, mere digging is akin to a crime, for it is likely to make mincemeat of peony roots and the bulbs of lilies and daffodils, and, generally speaking, obliterates all the beauties that are just sleeping to prepare themselves for the jubilations of the spring.





DOUBLE BUTTERCUP.

DOUBLE BUTTERCUP.

Ranunculus acris, fl. pl.

VARIETY of bachelor's buttons is to be found in Queen Flora's wardrobe, but all alike are adapted to make gallants look gay. The common scabious (*Scabiosa succisa*) is a blue bachelor's button; and the white campion (*Lychuis dioica*) offers us both white and rose-coloured buttons, so constructed that they can be fitted into a small button-hole, and will remain there without requiring to be sewn on. But the flower before us is the real Simon Pure, and carries gold enough to gild all the rest.

There are three British species of buttercup, so nearly

alike that a young botanist may be pardoned for not soon perceiving the characters that distinguish them. The earliest to flower is *Ranunculus bulbosus*, which has a



bulbous root like a little turnip. This has a bold yellow flower, the sepals of which turn downwards. *Ranunculus repens* is the creeping-rooted buttercup, with large glossy flowers. It occurs in every variety of soil, but always in an open situation, and when much exposed is the most splendid flower of its family. A few years since we saw vast quantities of this species in some new roads connected with the deserted docks near Rotterdam. The plant had spread amongst the loose stony soil of those roads, and all traffic being abandoned through a commercial collapse, the buttercup had that part of the world all to itself, and the flowers were of great size, intensely yellow, and very highly varnished. The third in the series is *Ranunculus acris*, the acrid meadow crowfoot, more of a meadow and pasture plant than the last, and only a shadow less beautiful. This is the species to which we are indebted for the double variety here figured. But all three produce double flowers, and, in fact, *R. repens* produces two double varieties, which are unequal in quality, the best of the two being of dwarf growth and neat habit. Any of these are the mary-buds of the poets, for the sentimental eye does not recognise the distinctions of the botanists, which are often as trivial as the fancies of the versifiers, but less attractive, and perhaps in the end less useful.

The hairy buttercup (*R. hirsutus*) comes near to the foregoing, though smaller and paler in colour; but it produces a double variety to make its resemblance the more complete. Of the other British crowfoots or buttercups we need not speak, for they are scarcely to be reckoned garden flowers. There are, however, several valuable plants in the genus respecting which a few words may be offered with advantage.

The most generally useful of the garden crowfoots is the double variety of *Ranunculus acronitifolius*, popularly known as Fair Maids of France, a name betraying the origin of the plant. The slender-stemmed crowfoot (*R. amplexicaulis*), is an exquisite beauty, with grey foliage and pure white flowers. A group of Alpine species claims the special attention of the cultivator of choice rock-plants. They are all most lovely. *A. anemonoides* is very dwarfed in growth, with finely-divided leaves and purple-tinged white flowers. *R. alpestris* agrees generally with the latter, but is distinct enough for garden purposes. *R. glacialis*, the glacier crowfoot, is the most dwarfed of all, forming a little tuft, crowned with purple-tinted white flowers. The cyclamen-leaved crowfoot (*R. parnassifolius*) is very distinct in leafage, with showy yellow flowers. The rue-leaved crowfoot (*R. rutæfolius*) has white flowers with yellow centres, the leafage being distinct. Finally, to complete this list, *R. speciosus* is a showy rock-plant, with flowers of the brightest yellow.

It will be time to look for others when the amateur has obtained and mastered the foregoing. But we may also add the names of a few that are well worth attention for their beauty, though not specially desirable for beginners. *R. bullatus*, *R. Lyalli*, and *R. cortusæfolius* are not hardy enough for commonplace treatment, but they are fine frame and cool house plants, needing a little protection against extreme cold and damp. *R. pyrenæus*, *R. gramineus*, *R. thora*, *R. uniflorus*, and *R. spicatus* may be added to the list.

The crowfoots agree pretty nearly in their cultural requirements. They love moisture, and the Alpine species are quite sensitive in this respect, for drought soon kills

them. Full exposure suits them generally much better than a position in any degree shaded; but *R. speciosus* likes the shade, and Fair Maids of France will brave the fullest sun or endure some amount of shade, and is one of the best of border flowers for a London garden.

As regards soil, the more robust kinds thrive in loam or clay, but the smaller rock-plants require a loam with which there is incorporated a considerable portion of siliceous grit—say, to use familiar terms, a very sandy loam. As regards the more tender kinds, of which *R. Lyalli* may be regarded as the type, they may be grown on the open rockery in many places where the climate is kind, or where the circumstances provide sheltered nooks and warm, well-drained positions.





PRIMULA OR CH

PRIMULA, OR CHINA PRIMROSE.

Primula prænites.

FAMILIARITY does not always breed contempt, and the exceptions to the rule may supply a problem for the philosophers. Perhaps familiarity never breeds contempt, for what we attribute to "familiarity" may be really attributable to the nearer knowledge of men and things that familiarity favours. We set up idols and worship them. When we discover that they are made of wood, we dethrone them. We admire a thing because it is new, and discard it when we learn that it is worthless; but a really good

thing retains our respect when the novelty has passed away, and thus it is that we never feel contempt for such familiar, cheap, and simple things as bread and butter, scarlet runners, and Chinese primroses.

This plant came to our hands in the year 1820, and

for some time thereafter was but poorly grown, and had no such beauty as it has now. Our figure represents it as it usually appeared in the early days of its advance in the way of improvement. Within the past few years the progress of improvement has been really wonderful, for we have great variety of leafage, the leaves being in many cases elegantly lobed, and constituting a race called "fern-leaved primulas;" while the flowers are single and double, smooth and fringed, and of all colours, from pure white to fiery red, approaching pure scarlet.

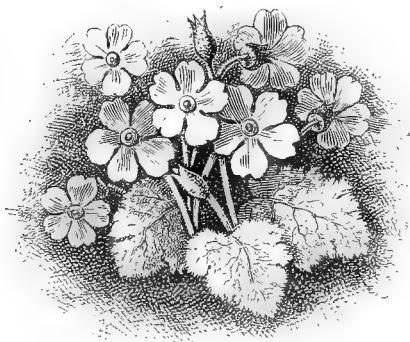
To grow these plants from seeds requires only moderate care, and one of the important points is to have really good seed to begin with. To be sparing of the cost of seed is to be committed to a sort of "wild goose chase;" and as the finest seed in the world is cheap enough for the poorest cultivator, there can be no excuse for the waste of labour upon a poor strain of plants. It may almost be said that the seed may be sown at any time, but the best time is from March to May; a sowing may be made, however, as late as July for a late bloom. To speak generally of the Chinese primula, it may be said that the same treatment as advised for the cineraria or the herbaceous calceolaria would suit it fairly well. But such an "offhand" direction is scarcely proper in the present case. Having begun with good seed therefore, the next thing is to sow it, and this is really a delicate operation. The seed-pans must be perfectly drained, or the business will fail at the first chapter. Stagnant moisture and sour soil are deadly at any time to this primula, but especially so in its earlier stages. Therefore we begin with shallow seed-pans, in which are packed some scientific potsherds. Then we fill up with first about a handful of flaky manure from an

old hotbed or heap, chippy and dry. The remainder must be three parts sifted red or yellow loam (London mud not allowable), one part perfectly pure leaf-mould in a powdery state, and one part of the sharpest sand procurable. So far for chapter the second. The pans being filled to the rim, and moderately pressed down, the seed is to be thinly scattered and very lightly covered. If you cover it deeply, you may at the same time say "farewell" to it, for you will know no more about it, although it will not "fare well" in any sense of the term, but will simply perish.

The seed-pans should be covered with a layer of sphagnum, to keep the seed moist, without necessitating a fresh supply of water. But sheets of paper answer fairly well, and if the soil in the pans gets a little dry, carefully dip them, but do not let a drop of water flow over the surface. It may be well here to remark for the advantage of the reader, that any and every primula seed will perish if, after being sown, it is allowed to be dry for any length of time. But with a little care the seedling plants will soon appear, and frame culture is all they require until winter is at hand. Pot them off separately in small pots as soon as they are large enough to handle, and keep them somewhat cool and shady and moist, but with no stagnant water or sour soil about them, and ordinary frame protection will suffice until frost may be apprehended. Then house them in the same way as advised for the herbaceous calceolarias, the winter minimum to be 40°, the early flowers to be pinched out as soon as they appear, and the plants not allowed to flower until they have made leaf-growth enough to give promise of a fine display. Pots of seven to eight inches in diameter are large enough for fine specimens.

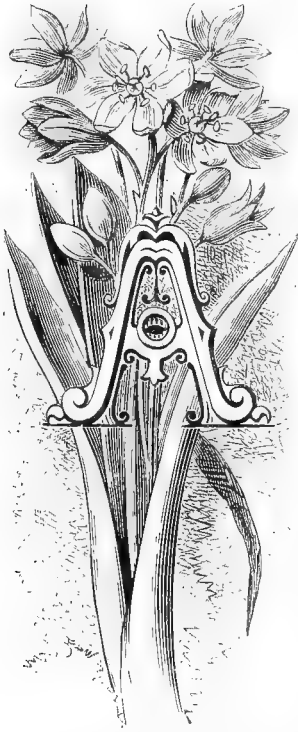
The double varieties, and any single varieties possess-

ing peculiar characters—such as variegated foliage, for example—are grown from cuttings or divisions. The way to take the cuttings is to divide the crown, reserving to each cutting a portion of the central stem. It is almost impossible to root these without the aid of a gentle bottom-heat, and quite impossible to root them if they are kept cold and wet, for, to tell the truth, they are delicate and troublesome, although the expert in propagating makes quite light of the task of getting up a stock of a few hundreds or thousands, as may be required. They need a somewhat dry atmosphere, to prevent damping off; and they require a certain amount of moisture, to prevent flagging. When rooted put them into small pots, and plant them deep in the pots, using the compost recommended for seedling plants. From this point the routine prescribed above will be sufficient. Both single and double kinds should be renewed annually, for only the most expert growers can keep old plants, and they often find the keeping more plague than profit.





SIBERIAN SQUILL.



SIBERIAN SQUILL.

Scilla sibirica.

TINT of blue in field or garden exercises a mysterious influence. In the later days of spring, when along the margins of woods and coppices our woodland squill, *Scilla nutans*, also known as *Hyacinthus non scriptus*, makes a fringe of heavenly blue, we experience a strange thrill of emotion, either because the colour has some spiritual import that the soul understands, or because the assurance it gives of the constancy of the seasons re-establishes the confidence that late frosts and east winds had well-nigh shattered.

And yet the influence, whatever its ultimate cause, can scarcely be the result of any special awakening peculiar to the season of the nodding squill, because it comes upon us again as the summer opens and the blue speedwell appears on the banks; and again, later on, when the harebells appear; and perhaps it is not altogether wanting when the blue of the wolf's-bane is seen upon the gravelly slopes, and the delphiniums and aconites appear in the gardens.

The Siberian squill is one of the hardiest of our choicest kinds of spring-flowering bulbs. It has but to be planted in a well-drained sandy soil in the autumn, and in the early spring it will show its lovely blue flowers in profusion, a delight and surprise to all beholders. As a pot-plant it is invaluable, and it requires as such only the same treatment as crocuses, hyacinths, and tulips, all of which demand a somewhat rich and very sandy soil. When planted in rings or clumps, squills may be left untouched for three years, and then it will be as well to lift, divide, and replant.

To make a lengthy essay on the out-door cultivation of the Siberian squill would be to waste an opportunity. In the few words already before the reader the subject is practically disposed of. But now we may turn to a proposal of the plant itself, for we seem to hear it say, "Why not associate me with the other choice spring flowers that are grown under glass?" Ah! why not? Well, to dispose of that matter, the Siberian squill and the two-leaved squill (*Scilla bifolia*) are two of the sweetest spring flowers known.

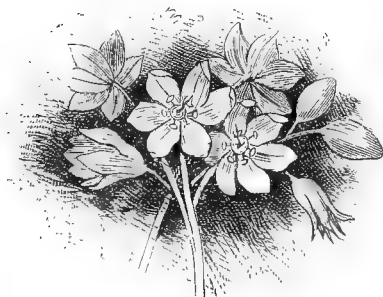
One of the cheapest and least troublesome of delights for a lover of hardy plants is a proper "alpine house," in which a number of early flowering bulbous and fibrous-rooted plants, having all the proper alpine character, can be flowered in early spring. Such a structure should have a low span roof resting on brick walls, with side lights opening as ventilators. A central walk through is a primary necessity, and on each side of this should be a solid bed of earth, supported by the outer walls and the walls on each side of the central path. The whole thing may be on a small scale, but sufficient headroom and width of path should be provided, and the height of the side beds above the walk should be such that the plants can be seen and

handled conveniently. As a rule, all stages and platforms are too high; and this may well be thought of in the first instance, for it is better to look down on flowers and see their faces, than look up to them and see less of their faces than of their stems. All the plants in such a house should be grown in pots, and when their flowering is over they should be put outside on a bed of coal-ashes with a north aspect, and they should have careful attention. It is not necessary to supply such houses with any kind of artificial heat.

In the alpine house, with earth platforms and ample ventilation, we can have a display every spring of the most exquisitely beautiful flowers the earth produces. We can have drabas more lovely than cushions of gold; reticulated irises that make figured velvet look ridiculous; saxifrages that steal snow from the mountains and make poetry of it that warms one at the very time, perhaps, when the snow that has not been stolen chills one to the core; primulas all dusted with the efflorescence of the granite they delight in; and epimediums that mock all art in the colouring of their simple but delicious leafage. But these, you will say, are things we know so little of that your words fall upon our ears like water on a duck's back. Very well, you know of the hardy alpine cyclamens, the dog's-tooth violets, the grape hyacinths, the hoop petticoat narciss, the American cowslips, and a thousand more such things that appear like spring butterflies that have turned out of bed before the world was warm enough, and are more charming in their half undress than ever they can be in their finished leafage, when the eye is diverted from them by the multitude of out-door flowers. All these can be well grown and perfectly enjoyed in an alpine house, the

cost of which should be but trifling, and the joy thereof beyond all price. The spring flowers will banish our cares, and we shall in beholding them feel freshened, and in happy sympathy with the spirit in which Clare wrote his tender sonnet on the opening spring.

“Spring comes anew, and brings each little pledge
That still, as wont, my childish heart deceives;
I stoop again for violets in the hedge,
Among the ivy and old withered leaves;
And often mark, amid the clumps of sedge,
The pooty shells I gathered when a boy:
But cares have claimed me many an evil day,
And chilled the relish which I had for joy.
Yet when crab-blossoms blush among the may,
As erst in years gone by, I scramble now
Up 'mid the bramble for my old esteems,
Filling my hands with many a blooming bough;
Till the heart-stirring past as present seems,
Save the bright sunshine of those fairy dreams.”

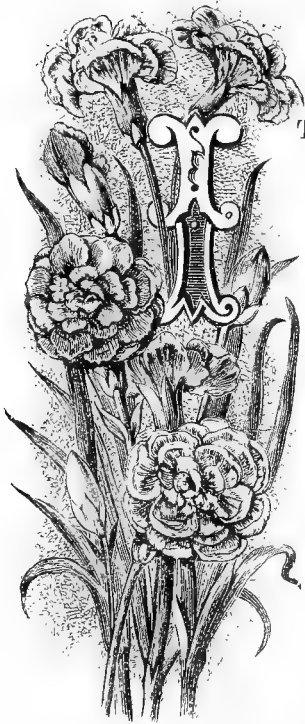




CLOVE CARN

THE CLOVE CARNATION.

Dianthus caryophyllus.



It is impossible to determine with exactitude which amongst our garden flowers is the oldest in the history of floriculture. But this is certain, that the carnation is one of the oldest; and as an English flower it is possibly older than the tulip, which, it must be confessed, will run a close race with it when the question is considered from a florist's point of view. As to the origin of the flower, it is beyond doubt the offspring of a wilding of the south of Europe; and it is probable Pliny is correct in saying—as in his twenty-fifth book he does—that it was discovered in Spain in the days of Augustus

Caesar. The “cantabrica,” which we take to be the carnation, was, he says, employed by the Spaniards to give a spicy flavour to their beverages, thus antedating the “soppes in wine” to which our old English writers occa-

sionally refer. Thus, in the reign of Edward the Third, Chaucer, in describing a rural scene, wrote in his quaint language—

“ Ther springen herbes, greet and smale,
 The licorys and the cetewale,
 And many a clow gilofre ;
 And notemuge to put in ale,
 Whethir it be moist or stale,
 Or for to lay in cofre.”

The “cetewale” in this verse is the valerian, and the “clow gilofre” is the clove carnation, which was used in the preparation of a spicy cup, and also to lay up with garments in a coffer or clothes-press. By “gilofre,” “gilloflower,” or “gilliflower” many very different flowers were formerly understood, but always with a qualifying prefix, as the “stock-gilloflower,” the “wall-gilloflower,” &c.; but *the* gilloflower of the old writers was beyond all doubt the carnation. Strange to say, this is a corruption of the Latin *caryophyllum*, a clove, the fragrance of the flower being like that of the clove of commerce; and in days when spices were costly, a carnation was a cheap substitute for the real thing. The more familiar name “carnation” refers to its colour, and this in old times was corrupted to “coronation,” and was thence associated with the custom of wearing it by lovers as a crown or chaplet, to denote that their hearts and hands were engaged.

The carnation, as a garden flower, must have been known in this country from very ancient times; and it is probably true that the yellow varieties were introduced, as Gerarde describes, by Master Lete about the year 1580.

Stow says they came from the Low Countries in 1567. We are, therefore, to suppose that previously to the last-named date none but self-coloured cloves were known;

and yet Perdita, in the "Winter's Tale," which was written in 1601, speaks of "streaked gilivors," not as things hardly known, but as old inhabitants of the garden; for Shakespeare did not weaken his sentiment by appealing to facts with which his auditors were unfamiliar. One thing is certain, however, that in the year 1629 John Parkinson had a large collection, and they comprised all the classes now cultivated, with the single exception of the picotee.

In the cultivation of the exhibition carnations, a loamy soil, enriched with thoroughly rotted manure and vegetable mould, is of the first importance; and all possible precautions should be taken to exclude or to trap wire-worms, which are their greatest enemies. The plants are propagated from seeds, layers, and pipings. The beginner will find it easier to commence by raising a stock from seed, the proper time to sow which is the month of May.

But layering is requisite for the perpetuation of trained varieties, and the art may be fully acquired with the practice of one season. The steps and stages of the process are as follow:—A suitable shoot is first brought down to the ground, and fixed by means of a peg cut from a hazel twig or the common bracken. The operator having thus far obtained command of it, puts the peg aside, and then removes the lowest leaves from the shoot, so as to leave the three topmost joints with their leaves intact. He now cuts the shoot half through, just below the third joint, and then turns the knife aside to carry it upwards along the middle of the shoot to about half an inch from (that is to say, beyond) the joint. The result will be the formation of what is called a tongue, which will include a portion of the joint. The greater part of this tongue is removed; but it is important that the joint portion of it should be

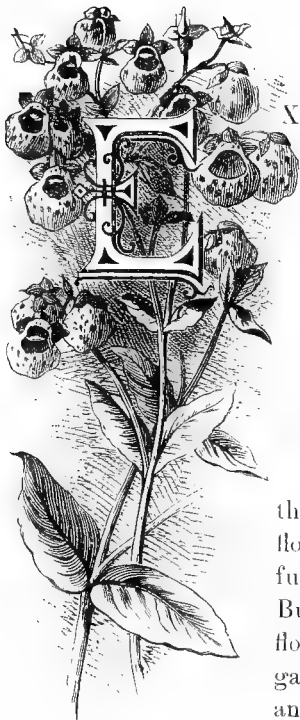
left unhurt, as from that joint the roots will proceed. The shoot thus operated upon is again bent down and fixed firmly with the peg, and the divided joint is covered with some fine rich soil, and is watered occasionally, the result being that in about six weeks there will be enough roots formed to allow of the removal of the layer as a young plant. From the middle of July to the middle of August is the proper time for this business. Practice simplifies the work so much that the preliminary bending down becomes unnecessary.

To make pipings, the weaker shoots are selected about the end of June or early in July. The shoot is cut square off at the second or third joint from the top, and the lower leaves are removed. The pipings are then inserted in sandy soil, and kept shaded and watered until they are rooted. It is usual, however, to place the pipings on a mild hotbed, on account of their reluctance to throw out roots unless aided by specially favourable conditions.





CALCEOLARIA



THE CALCEOLARIA.

Calceolaria hybrida.

EXHIBITIONS have so greatly influenced floricultural tastes that we may be forgiven if for a moment we permit this flower to stir old memories. In the course of the fifty or sixty years that it has been in cultivation it has passed through all the phases incident to a proper florists' flower, and happily it remains for such as can enjoy it, though it has fallen from its high estate. This may, to the reader who is uninitiated in the floral mysteries, appear to be a dreadful fate for such a beautiful thing. But indeed it is not. When the flower was rising into fame the florists gave names to their choice varieties, and these were propagated by divisions

and cuttings, to maintain them in the full integrity of their floral characters. But the fashion for named

herbaceous calceolarias has passed away, and therefore they are no longer named, and no longer grown from cuttings, and there is no care whatever taken to keep any plant beyond the season of its flowering. When groups of well-grown calceolarias are now staged at exhibitions, the spectators are delighted with their variety and richness of colouring, their massive heads of bloom, and the fresh and abundant healthy green foliage. If the plants are lovely to look at, they are surely none the less acceptable because they are grown from seeds as annuals or biennials.

Some special care is requisite in growing these splendid calceolarias in a creditable manner. The easiest, and, generally speaking, the best method, is to raise them from seed, which should be sown in July, in pans containing a mixture of equal parts of sifted loam, leaf-mould, peat, and sharp sand. The soil should be moderately moist, and the seed should be thinly scattered, and covered with the merest dusting of fine peat. A cold frame is the proper place for the seed-pans until the plants appear. Until they appear, shade the pans by laying sheets of paper over them, or by laying a mat over the light that covers the frame. The young plants must have light and air and regular supplies of moisture, but no excess of any of these aids to growth, for strong sun, strong wind, and a wet soil are equally inimical to their welfare. As they grow, prick them into other pans to give them more room. Nurse them in the pans until large enough to be put into small pots singly, using the same soil as before. You will thus have secured a nice stock of sturdy plants during the best growing weather of the first season.

To raise them from cuttings, we must wait until young shoots arise from the roots of plants that have flowered.

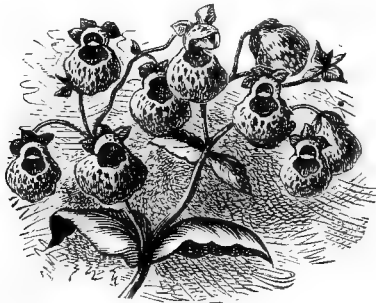
These must be removed with care, and potted singly, in small pots filled with the same mixture that is prescribed for sowing the seeds in. Shut them up in a frame, and keep close and shaded. Dew them on the tops by drawing the hand over a wet brush twice a day, but keep them almost dry at the root. If you have a hotbed in operation, or any other source of bottom heat, you may accelerate the rooting process; but beyond all doubt the best plants are obtained without resort to any such aid. If they are made unduly moist they will rot, and there will be an end of them. But with careful management they will soon make roots, and from that time should have more light and air to keep them healthy and *short*. Plants that "run up," and thereby become "long-legged," never flower as they should, and in some cases will not flower at all. The preventives of "lanky" growth are light and air.

We are now nearing the winter, and we have a stock of young plants in smallish pots, and it matters little as to their future management whether they were grown from seeds or cuttings. They must be shifted into pots five inches in diameter, and the compost should be of the same description as before, or a little more substantial—say two parts loam, one part leaf, one part sand, and no peat at all. They must not be potted very firm—a moderate pressure will suffice; or perhaps, when nicely filled in, one good tap on the potting-bench will settle the soil sufficiently.

The place for them during the winter is on a shelf in an airy greenhouse, near the glass, but not so near as to suffer during a sharp frost. If put on a stage far from the glass they will be "drawn," or, in other words, will become long-legged and weak; but if near the glass, and far away from the hot-water pipes, they will be short and

leafy and strong. But though as far from the pipes or flues as possible, they require a temperature during winter never below 40° , and therefore what is called a warm greenhouse is the best place for them.

In the early days of March shift them into 8-inch or 10-inch pots, according to the size of the plants. The soil for this shift must be somewhat rich—say three parts turfy loam, one part rotten hotbed manure, one part leaf-mould, and one part sharp sand. Be careful not to pot too firm. As soon as the plants begin to grow freely, increase the supply of water, and be careful to let them have as much light and air as possible, taking care, however, to guard them from any serious check. They may be flowered in these pots, but it will be good practice, as soon as the pots are fairly full of roots, to shift a few of the finest plants into 12-inch pots; and when these are full of roots, manure-water should be given, instead of pure rain-water, to promote a fine head of bloom.





AGERATUM.



THE AGERATUM.

Ageratum Mexicannum.

Every question has two sides, so the question whether the massing of plants in the flower — *e.g.*, the “bedding system”—is worthy of respect as a feature in garden art, has not only two but many sides. There has been much said against it, and much that is true. Its advocates have not lacked argument and demonstration in its favour. One thing may be said in its defence, while the figure of the ageratum is before us, and it is that the bedding system has brought into repute many plants that were unknown

until it was discovered that they were adapted for massing, and while it has accomplished thus much, it has also improved them for the purpose. *Ageratum Mexicannum*, as figured in Sweet’s “Flower Garden,” 1823 (*t.* 89), is a poor thing as compared with the varieties that have been raised within the past few years for bedding purposes; and, indeed, as

they say of an actor who succeeds perfectly that he has "created" the part, so we may say that the bedding system created the ageratum. Sweet's figure represents a long-legged weedy herb, with small indecisive heads of flowers of a pale blue colour. It was raised from seeds obtained from Mexico by Mr. Bullock, and was first grown by Mr. Tate, nurseryman of Sloane Street, more than half a century ago. Now we have varieties of several shades of colour—some of a fine light azure blue, others silvery-grey, lavender-grey, and white, the plants also varying in height, some of them being so dwarf as to form moss-like tufts upon the ground. A collection of the best would comprise the *Queen*, silver-grey; *Swanley Blue*, light clear blue; *Cupid*, very dwarfed, the flowers blue; and *Malvern Beauty*, the most dwarfed of all, the heads of the flowers large, and of a beautiful blue colour. The last-named is dwarf enough for carpet bedding, and is associated with the most dwarfed of the blue lobelias. The demand, during a quarter of a century or more, for material adapted for bedding, has proved of such "creative" power that a very considerable proportion of our ornamental garden plants have been remodelled, and we may even say beautified by the hybridist for the purpose.

As is usual in such cases, several species have been employed. Amongst the garden varieties may be noted more or less of the features of *Ageratum ceruleum*, which has sky-blue flowers; *A. conyzoides*, which has greyish-blue flowers; *A. Mexicanum*, lavender; and *A. striatum*. With the exception of the Mexican plant, which is tender, all of them are hardy annuals, and yet it is customary to treat them as tender perennials, and they answer very well to such treatment. However, as in most seed catalogues two

or three sorts are entered, it is an easy matter to obtain the seeds; and to sow them in the month of March on a sunny border is sufficient to insure in the course of the summer useful clumps of flowering plants.

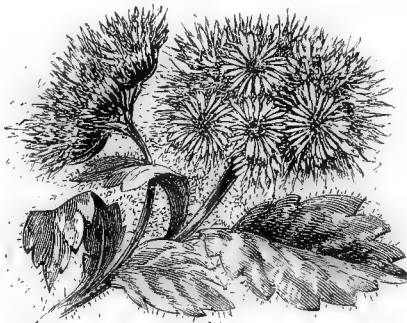
But a better way is to grow the named varieties only, and to propagate a stock every year from cuttings. There are two modes of procedure, the best of the two being, of course, the most troublesome. A few pans or boxes are filled with sandy loam, and in the month of September these are filled with cuttings and shut up in a frame, where the cuttings soon form roots if lightly sprinkled with water every day. When rooted, air is given, and they are kept as hardy as possible to prepare them for the winter. When the winter is over these are all topped, and the tops are struck on a hotbed or in a propagating house; these spring-struck cuttings are then grown for bedding out, and the winter plants from which they were taken are thrown away, or are planted in the reserve ground to supply cut flowers. If this best way of making cuttings in autumn, and again in spring, should appear to be too troublesome, the alternative is to strike in the autumn as many as will be ultimately wanted, and these, of course, will have to be planted out in the ensuing season.

To manage the plants through the winter is a very easy matter, as they are hardy, and a little frost or damp will scarcely harm them. At the same time, a good pit or house is the proper place for them. In the spring, when they begin to grow, they should be pinched back occasionally to keep them dwarf, and should have air and light freely, and be fully exposed in open frames from the end of April until planted in the beds.

The ageratum will grow fairly well in any soil, and as

a border flower will bear partial shade. But to obtain a fine bloom the soil should be rich and deep as for the dwarf lobelias and verbenas, none of which ever attain to perfection in a starving soil.

The evolutionists have concluded that blue flowers are derived from red and white flowers by a long process of modification, blue being a sign of the highest order of development in the vegetable kingdom. Thus, they say, is explained the comparative scarcity of blue amongst flowers. We have not many in the garden, nor are there many in the field. While the nodding squill makes a blue cloud on the skirts of the woodland, we may find on the railway banks and hedgerows a blue to match it in the germander speedwell, and at the same time there should be seen on the garden rockery three blue flowers of the most glorious character. They are *Lithospermum prostratum*, *Veronica saxatilis*, and *Myosotis rupicola*. A few large sheets of these on a spacious and sunny rockery will effect a surprise in the months of May and June.

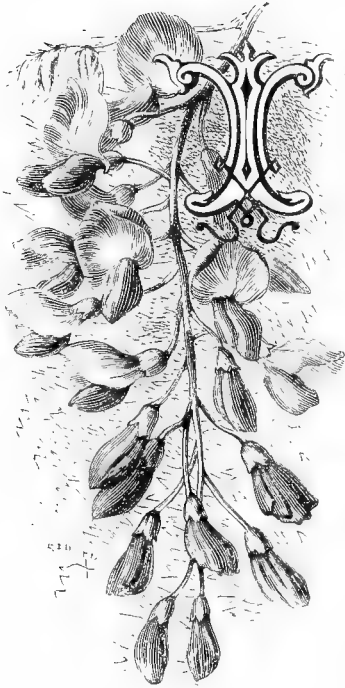




WISTAR

WISTARIA.

Glycine Sinensis.



THE name here given is that under which the plant was first described by Dr. John Sims, in the *Botanical Magazine*, 1819 (t. 2,083). It has been variously described as *Wistaria Sinensis* and *Wistaria consequana*; but the rightful name is the Chinese glycine (*Glycine Sinensis*).

This glorious, hardy climber was brought from China by Captain Welbank, in the year 1816, and was first grown and flowered in the garden of Charles Hampden Turner, Esq., Rook's-nest Park, near Godstone, in Surrey, and it was through Alexander McLevy, Esq., that Dr.

Sims obtained a spray of the flowers for his drawing. The story of the first attempt in growing the plant is paralleled by many instances. It was first kept in the peach-house, in a temperature of 84°, where it was very soon all but

destroyed by vermin. The heat being reduced below 60°, the plant improved in health, but did not fully recover. Early in August, the gardener, D. McLeod, removed it from the wall of the peach-house, set it in a pot of vegetable mould, and tied its branches to a stick. In the month of September it lost all its leaves. It was kept all the winter on the floor in the darkest and coolest part of the greenhouse, in which situation the mould in the pot was frozen three different times during the winter. In the beginning of March it showed flower buds, and the plant was removed to a more favourable situation in the house; but no leaves were put forth till the last week in March, when the flowers were nearly expanded. Thus the plant was prepared for life in the open air, and when at last it was trusted wholly to nature proved hardy enough for the climate of Britain, and capable of giving joy to its humblest possessor—for of glass, fire, pots, and careful tendance, it needs absolutely none. The familiar *Aucuba Japonica* went through the same kind of probation, being nearly killed in heat, and restored to health only by being treated as a hardy plant fully capable of taking care of itself. When we speak of it as the wistaria (not wisteria) we commemorate C. Wistar, an American botanist, to whose honour it was dedicated by the botanist Nuttall.

The wistaria is a member of the great order of papilionaceous or fabaceous plants; in other words, it is a member of the happy family of peas and beans. There are about a dozen species in the books, but they obtain little attention, and it may be said that for all practical purposes in the decoration of the garden we have only one, which is the plant now before us. But this beauty has given us a fair child, known as the white wistaria, an

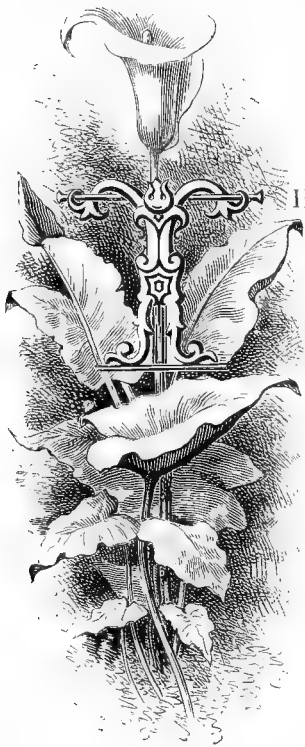
exquisitely lovely plant when in flower, and as hardy every way as the blue or purple form here figured.

Having grown wistarias in several kinds of soils, we are bound to say they are not at all particular. A deep, rich, warm loam of a light character is perhaps the best soil for the purpose, but they thrive in peat, in peaty sand, and on all kinds of loams that are warm and well drained; and where the natural soil is a heavy, tenacious clay, a border should be prepared on a well-drained foundation for the growth of a good wistaria. The plant occasionally produces seed-pods and ripe seeds; but as these are not common, the nurserymen learned long since that propagation by layers is at once an easy and an expeditious mode of proceeding.

Although a foreigner of recent introduction, the wistaria has acquired in this country a certain degree of dignity as an historical tree, and one closely associated with individual lives and memories. Some, perhaps, among our readers may be reminded of the magnificent specimen that ran far under the shelter of a venerable verandah in the garden of the late Sir Joseph Paxton at Rockhills, adjoining the Crystal Palace at Sydenham. The standard wistaria at Cothelstone, figured in the *Gardener's Magazine*, June 27, 1868, is as truly a family tree, and as dear to its possessors, as any of the patrician laurels that were subjects of eulogy with Roman poets and orators. There is a most noble tree of the kind in the Royal Gardens, Kew, and it may be easily found, for it is near the Temple of the Sun and the first block of plant-houses. This is trained on a great circular cage of poles and bars. The flowers display a fuller tone of colour than those of trees trained to walls, and the artificial training is excused by the fact that it is just in such a way that the tree is



ARUI



THE ARUM LILY.

Richardia Ethiopica.

THIS plant is usually labelled *Calla Ethiopica*, and there is no impropriety in classing it as a *calla*; on the contrary, it is well to embrace any and every opportunity of protesting against the vicious use of commemorative names that is now becoming common with botanists who are too idle to diagnose, while over-busy in "dedications." But no matter: "a rose by any other name will smell as sweet," and the arum lily is a glorious plant that should be grown wherever suitable accommodation can be provided for it. Being an arum, it is not a lily; but there is no

lily, however beautiful, that can be said to surpass it in elegance of form or in the purity of its ivory-white chalice, folded in curves that seem to mock the genius of the greatest of artists.

There is not in the world a more accommodating plant than this, provided solely that it be protected from frost in

winter. A hardy plant it is not, and many a one has lived through two or three mild winters on the margin of a pond or stream, only to perish and leave no trace of its existence when a sharp winter has come and put it to the proof of extreme endurance. The arum lily is a greenhouse plant, half-aquatic in habit, yet bearing to be dried up in summer, as though water were the last of its necessities. But the drying-up is not good practice, for it results in the production of small flowers; whereas, if the plant be kept moist all the summer through, it will in spring produce large flowers, and a greater number of them than is possible in the case of plants that are forgotten, as many are from the moment they have ceased to be attractive.

Being a most accommodating plant, it may be grown in a variety of ways. As a pot-plant for the greenhouse, it may be easily managed to make its best display at Easter, when for decorative purposes its lovely spathes or flowers are invaluable. Any kind of greenhouse that is light, and safe against frost, will serve for wintering the stock; and the time of flowering will be very much in the determination of the cultivator, for by raising the temperature as the days lengthen the plant will respond, and produce its flowers before the usual time. It may happen that when forced a few aphides will appear on the plants. In this case nothing more is needed than simply to brush them off and kill them, for the plant bears handling, and fumigating is quite unnecessary, unless it happens that other plants in the house are in a similar plight, for we cannot remove the insects from all kinds of plants so easily as from the arums.

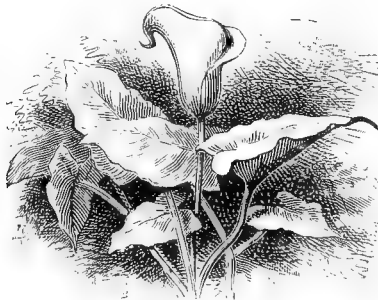
The routine culture insures to the cultivator a rapid

and very considerable increase of stock. It is in its way a profitable business, and demands the fewest and simplest materials. The soil in any case must be rich and strong—say two parts good loam and one part rotten hotbed manure; and there is no need for sand, except when very small offsets are potted. While in free growth the plants should have plenty of water. Every year, after flowering, they should be put out of doors, and kept moderately watered until the leaves die down; then shake them out and re-pot, using only one hollow oyster-shell for drainage, and dividing the plants as may seem best to increase the stock. The more you divide the smaller your plants will be. If, therefore, you want large specimens, you must pot a few without dividing them, and so proceed until they become too large to be manageable, the size in any and every case being determinable by the cultivator, if he will but wait for the plants to fill the pots of the maximum size allowable. It is good practice, as soon as the pot-plants are growing freely, to stand them in pans of water; but one inch or even half an inch depth of water is sufficient. On the subject of pot culture there is really very little more to be said.

A more profitable mode of procedure consists in planting them out as soon as they have flowered, in a piece of rich moist soil, to make free growth during the summer. In the autumn they are lifted, and potted for the winter, and are flowered in the usual way under glass. They are then again planted out, and at the same time divided as may be needful. For general purposes a combination of the two systems may be recommended, as the plants that are grown wholly in pots flower earlier than those that are planted out.

There is a spotted-leaved variety of this arum. It is catalogued as *Richardia albo-maculata*, and is admirably figured in "Illustration Horticole," 1860, p. 35. But no art of man can convey a just idea of the beauty of this variety; a mass of it planted out in a bed constitutes one of the freshest and most impressive of surprises; it is a proper item in "sensational" gardening.

Many who vainly lament the inability of the arum lily to endure a severe winter in the open garden are unaware of the generosity of nature in providing a hardy substitute. We have in our water garden fine clumps of a North American aquatic, *Calla palustris*, differing much from *C. Ethiopica*, but bearing a family likeness, and really very beautiful in its way. This plant is perfectly hardy, and increases fast and flowers freely in a bed beside some still water, where it needs to be protected against encroaching weeds.



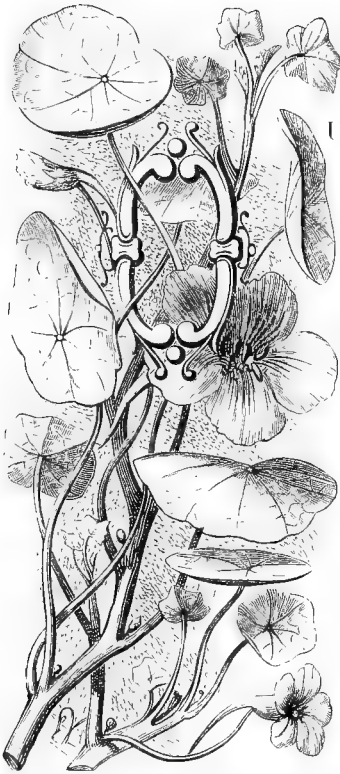


INDIAN CRESS.

THE INDIAN CRESS.

Tropæolum majus and *T. minus*.

OUR garden nasturtium is not the nasturtium of the botanist, for the true nasturtium is the water-cress. It is, perhaps, hardly necessary for me to explain here how the *tropæolum* came to be called a nasturtium, not being one, for anybody who will eat a leaf or flower of the *tropæolum* will in a moment understand the reason of it. It has the fresh pungent flavour of a cress, and is at the same time perfectly wholesome. Thus, in days gone by it acquired the name of "Indian Cress," and by a misuse of the Latin word for cress, it was called a nasturtium. The term "Indian Cress" is quite as improper as



nasturtium, for it suggests that the plant came from

India, whereas it is a native of Peru, whence it was introduced in 1596—a date full of suggestions to the reader who can surround it with a circle of great names and important events.

The common major *tropæolum* is as well known as any flower of the garden. We see it festooning the cottage fence with its distinct glaucous leafage and flaunting orange or deep crimson flowers, and we know that if we get a nicely-boiled leg of mutton with caper sauce in which the green seeds are substituted for real capers, we shall do remarkably well, especially if the same garden supplies a dish of delicate turnips. For pickling, the major *tropæolum* is the best, but the dwarf kind answers very well, and it is invaluable for bedding and for covering rough, dry, sunny ground—for dryness, warmth, and a poor soil are conditions favourable to their full development. The seed-growers have established several very distinct races of dwarf annual *tropæolums* for bedding purposes, and they are extremely showy, but so far coarse and weedy that they are not to be regarded as first-class bedding plants. But this depreciation of them would hardly stand in the face of a group that appeared on one of the lawns between the bridge and the corridor of the Paris Exhibition of 1878. This group contained about thirty sorts, every plant being a model of growth and beauty. The flowers comprised white, primrose, yellow, orange, scarlet, crimson, and purple, and a few that inclined to chocolate and slate-colour. They are the cheapest of all bedding plants, and the easiest to grow; and the best way to manage them is to sow the seed in pots towards the end of March, and plant them out about the middle of May, selecting for them a sunny situation and a poor soil. But they may be sown

as the cottagers sow their major *tropæolums*, where the plants are to remain; and the matter of chief importance then is to thin them to nine inches apart, so as to afford each plant an opportunity of spreading into a round, compact tuft, which will very soon become smothered with flowers, and will so continue until frost makes an end of its bright career.

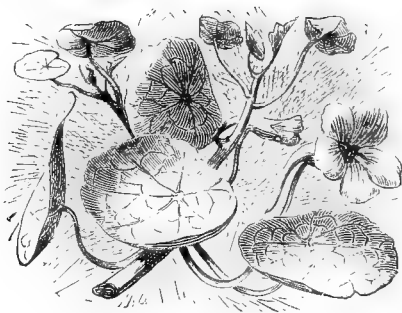
The tender perennial kinds of which *Tropæolum Lobbianum* is the type are first-class bedders of the most refined character, and they are invaluable for the conservatory if so managed as to flower freely all the winter. To manage them as bedders they must be multiplied by cuttings in the usual way of "soft-wooded" plants, and be put out late in May. In common with all the plants of this family, they thrive best in a dry, poor soil, and a sunny situation; and in the event of their becoming too leafy, it is a good practice to remove a few of the topmost leaves, as this slightly checks the growth and promotes production of flowers. It should be borne in mind, however, that every plant should be allowed to carry all its leaves unless there is a sufficient reason for the removal of a portion, for the leaves are the lungs, and every leaf lost is a loss of breathing power. There are people who think that leaves are quite superfluous, and they remove them in a reckless manner in order to ensure plenty of flowers. The result is that they get no flowers at all, and if they persevere in the practice the plants soon die.

There is a beautiful class of double *tropæolums* in cultivation that are justly prized for the decoration of the conservatory during the winter. These and other kinds required for winter flowers should be propagated by cuttings in July and August, and the flower-buds that first appear

should be nipped out to prevent flowering until the plants are strong. To flower them well in the winter they must be in the full light in a warm house, for cold and damp will kill them.

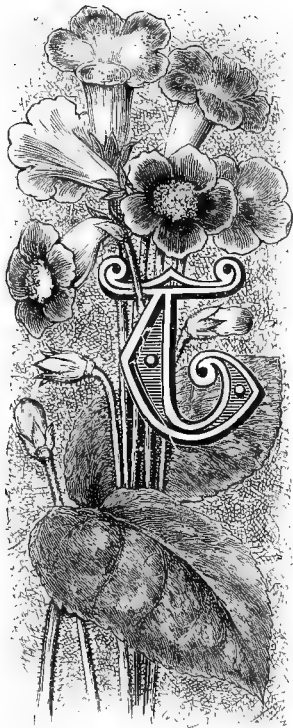
The robust kinds of the *Lobbianum* section, such as Ball of Fire, make fine balcony plants for the sunny side of the house, but for the shady side there are no creepers to equal the Virginian vine and the ivy.

The tuberous-rooted species make fine trellis plants, and are occasionally grown on wire balloons in pots to adorn the conservatory. All these require a sandy soil, and during winter should be protected from damp. The hardiest of this series are *T. edule*, a strong growing plant with orange-coloured flowers, and *T. tuberosum*, with flowers yellow and red. If planted on a dry sandy soil near the shelter of a warm wall, these endure the winter without harm; but where the soil is loamy, or the situation cold and damp, the roots should be taken up and stored away in sand for the winter. The destruction of the tops by frost should be the signal for lifting them.





GLOX



THE GLOXINIA.

Gloxinia speciosa.

HIS beautiful flower is a very remarkable exemplification of one of the great aims of modern science, which is the annihilation of Time. You have heard of, and possibly you may have seen, the Indian juggler who sows a seed in a pot of earth, and in the course of a few minutes presents to your admiration the plant the seed produces—not in a nascent state, as we see a pea or bean emerge from the earth, but complete, with stout stem; many leaves, perfect flowers, and fruit. How is it done? We decline to tell, because we do not know. This, however, we all know, that the

essence, the very life, and, indeed, the intention of all conjuring is deception. Now the subject before us does not bring into the field this element of deception, but it does in the most striking manner illustrate the capabilities of science in the annihilation or the reduction of Time.

For many years past the florists, like the cattle-

breeders, have been systematically shortening the time of the perfecting of their produce for the market. The breeder of cattle has to keep in mind that his horned family must be ready for the market at an early date, and the feeder has to work up to the breeder's notion, in order to make the meat manufacture pay. This is well known; and one of its results is that as civilisation destroys our teeth, it at the same time provides us with tender meat.

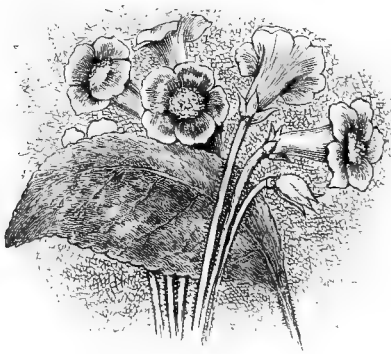
If you will turn back to the horticultural papers of, say, thirty to fifty years ago, you will quickly learn that the growing of good gloxinias, cinerarias, calceolarias, and other of the more delicate florists' flowers, was slow work; but now it is done in "no time," and one may well be flustered when suddenly called upon to discourse in a learned way on any of these subjects. *Imprimis*—Begin with off-sets; lose a lot; have great trouble to root them and to keep them—bah! Begin with seeds that will grow like weeds; lose none, and have a stock of gorgeous plants in about three months without difficulty, instead of in three years with difficulties innumerable. Somebody else may say "bah" now; the sheepish ones are those who stick to the old custom. Many earnest workers have contributed to this "shortening" process in the manufacture of our floral fancy bread; but few have laboured so consistently, scientifically, and with such solid results as Messrs. Sutton and Sons, who can show at any time between June and October gloxinias grown quickly from seed, that may be allowed to turn with delight the head of any one who knows a gloxinia.

The gloxinia is a stove plant, loving moisture and some degree of shade. Like our own foxglove, which may be called the British gloxinia, it is a woodland plant, and

enjoys in its nourishing bed the tricklings from the fountains far above it on the happy hills. It must be grown in a good soil, and with heat and moisture sufficient, or it had best not be grown at all—because, in truth, it will not flourish unless kindly treated. For the great grower, the month of January is the time to sow the seed; for the little grower, the proper time is before the end of February. The sowing is a nice affair. Those who skimp are sure to limp, for the plant will not be trifled with—and, indeed, why should it, when it has done no harm to anybody? Prepare for the purpose a compost of peat, loam, leaf-mould, and silver sand, and with this fill convenient-sized pots or seed-pans. A shallow seed-bed will answer perfectly, therefore deep boxes are not required. Having sown the seed, plunge the pots or boxes nearly to the rim in a bed of tan or any other moist material, the temperature of the house or pit to range from 65° to 75°, the mean, of course, to be 70°.

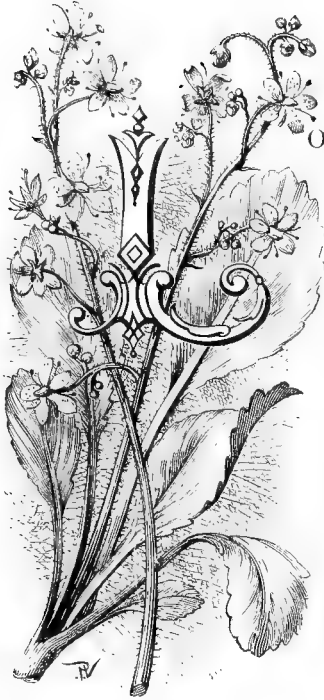
The seedling plants will soon appear, and should be as quickly as possible transferred to thimble-pots in a rich, but light, peaty compost, and kept growing near the glass, and shifted again as soon as the pots are filled with roots, until they are allowed to flower in pots of a suitable size for their degree of vigour. In 5-inch pots beautiful specimens may be flowered; but in the second year these may have 8-inch pots with advantage. They require abundant supplies of water, but should never be wetted overhead; and whenever a plant presents an unhealthy appearance, lift the pot, and consider if it is heavier than it ought to be. If it be so, turn out the plant, and you will find that stagnant moisture has made the soil sour, and is the sole cause of the poor state of the specimen. A

plant that is supplied with more water than it can swallow is in a very unhappy predicament. We have lately seen an interesting exhibition—a gentleman engaged to judge at a children's flower-show blindfolded. The plants were handed to him, and he judged them by the *weight*. All the heavy ones he condemned; and in this case he was right, for all the heavy ones were bad. But in regard of the light ones he made a few mistakes; but generally speaking, the light ones were good, but not so uniformly as to justify the principle on which he relied. But how instructive to us all is this judging of plants by their weight!





LONDON PRIDE.



LONDON PRIDE.

Saxifraga umbrosa.

LONDON PRIDE is looked down upon by the grand gardeners and sublime botanists, but it is one of the loveliest plants in the world, and one of the most thrifty. The young microscopist may be advised to grow a patch of it in order to obtain stamens, and pollen grains, and slices of leaf-tissue for pleasant work in the cool of the morning.

“ In the summer-time, when
The bright May-buds are a-winking,
And the cuckoo’s sweet hiccuping down
in the glen
Tells of the dew he’s been drinking.”

Let the plant have a place in the garden—that is the point we are anxious about, because it is so common and cheap, and unwilling to give trouble, that your oligarchs of orchids, and fantastic fanciers of fine foliage plants, and affected florists who are still in their apprenticeship in the world of taste, will fling it incontinently to the rubbish-heap, unless it is fenced round with a *chevaux de frise*. The latest

standard work on hardy herbaceous plants does not even mention it. In a past year walk through smoky Manchester, to judge, for the twentieth time, the grand plants that are exhibited in the Botanical Gardens there at the famous Whitsun Show, we stopped to admire the dense green cheerful cushions of London pride in the little front gardens, of which there were many, in the Stretford Road; but we trembled as we peeped into the humble gardens, lest any of our orchid-growing friends should catch us tasting of such a pleasure as the sight of healthy and elegant vegetation that cost the owner nothing in money and was worth anything in the way of love.

And why is it called London pride? Thereby hangs a tale. The name is modern, as may be proved by reference to Parkinson's "Paradisus," where, at page 319, he describes the "speckled sweet williams, or London pride." This, of course, is a dianthus of the kind now known as sweet william, and easy to be discovered wherever these flowers are grown in any quantity. It has brown or purple leaves, and flowers of variable colours. Parkinson thus describes them:—"Some flowers will be of a fine delayed red, with few marks or spots upon them, and others will be full-speckled or sprinkled with white or silver spots circlewise about the middle of the flowers, and some will have many specks or spots upon them dispersed." Everybody who grows sweet williams will know the kind of plant Parkinson describes as the London pride of the old gardeners.

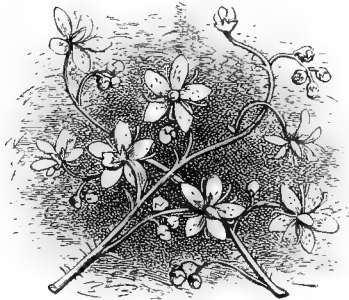
For a hint of the truth in respect of the plant before us we are indebted to Dr. Prior's "Popular Names of British Plants." He says:—"It is understood, upon apparently good authority—that of Mr. R. Howard, in the *Gardener's*

Chronicle—to have been given to this latter plant (*Saxifraga umbrosa*) in reference to the person who introduced it into cultivation, Mr. London, of the firm of London and Wise, the celebrated royal gardeners of the early part of the last century." It should therefore be designated London's pride, from the name of the raiser, as one of the finest bedding geraniums was called Hibberd's pet by the same rule.

This saxifrage is very accommodating, for it will grow almost anywhere. But it is a fine rockery plant when allowed to form large clumps and tumble over ledges in a half-wild sort of way. As it is, in an especial sense of the word, a town plant, we give the names of a few other good rockery plants that smoke and poor soil do not soon injure, which may grow with it:—White Arabis (*Arabis albidula*), Yellow Alyssum (*Alyssum saxatile*), Alpine Columbine (*Aquilegia alpina*), Yellow Rocket (*Erysimum ochroleucum*), Tufted Harebell (*Campanula caespitosa*), Large-flowered Mouse-Ear (*Cerastium grandiflorum*), Plumy Dielytra (*Dicentra erimia*), Alpine Erinus (*Erinus alpinus*), Red and White Hepatica (*Hepatica triloba*), Blue Hepatica (*H. angulosa*), Evergreen Candytuft (*Iberis sempervirens*), Coris-leaved Candytuft (*I. corifolia*), Prostrate Phlox (*Phlox subulata*), Creeping Phlox (*P. reptans*), Rock Soapwort (*Saponaria ocymoides*), Opposite-leaved Saxifrage (*Saxifraga oppositifolia*), London Pride (*S. umbrosa*), Mossy Saxifrage (*S. muscoides* and *S. hypnoides*), Spanish Stonecrop (*Sedum hispanicum*), Common Stonecrop (*S. acre*), Siebold's Stonecrop (*S. Sieboldi*), Showy Stonecrop (*S. spectabile*), Beautiful Stonecrop (*S. pulchellum*), Common Houseleek (*Sempervivum tectorum*), Rock Veronica (*Veronica saxatilis*), Common

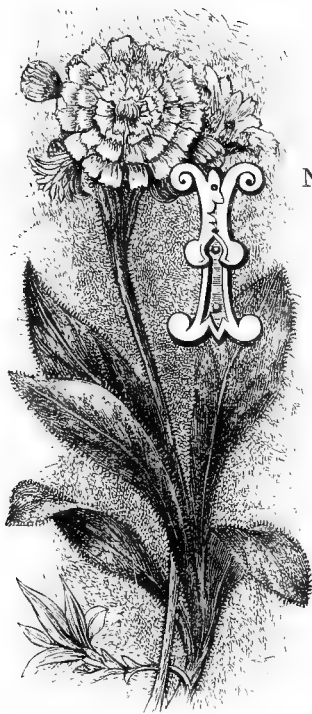
Sunrose (*Helianthemum vulgare*), Major Thrift (*Armeria cephalotes*), Mountain Vetch (*Lathyrus montana*), Crimson Storksbill (*Geranium sanguineum*), Woodland Forget-me-Not (*Myosotis sylvatica*), Woolly Thyme (*Thymus lanuginosa*).

For all the commoner kinds of rock plants, which for the most part are extremely beautiful, a good body of soil is requisite, for they soon perish when planted in mere "pockets" or on shallow ledges. The kind of soil is not of much consequence, provided the plants can root freely in a considerable bulk of it; but when a soil has to be made for the purpose, it may with advantage consist of good loam three parts, lime rubbish (from which large stones and bricks have been removed) one part, and sharp grit one part. Where there is any considerable extent of gravel walks, the sweepings should be regularly sifted and saved, as they constitute the best of "grit" for rock plants, and to mix with loam in potting.





HAWKW



THE HAWKWEED.

Hieracium aurantiacum.

N the first substantial book of botany in the English language — the “Herbal” of William Turner, 1568 — the hawkweed is admitted to the high dignity of affording a problem in nomenclature. The older botanists were so ready at all times to believe anything, that it is quite amusing to find Turner saying, “I can not gesse why this herbe shoulde have the name of a hawke, seing other herbes have the same properties that this hath.” But it suggests to us that Englishmen were beginning to think for themselves in

the reign of Elizabeth, and the way was fast preparing for that true science whereof the great Lord Bacon was destined to speak as a prophet and to act as a master. However, to keep to Turner for a moment, and forget all that happened after him, he comforts us with a bit of philosophical etymology. He says the hawkweed probably takes its name

“from the downe that groweth in the toppe after the flowers be gone,” these feathery seeds being “good to be taken of the hawke, to make him cast his gorge wyth it.” That it should be good against “the stingginge of a scorpion” does not aid us in the study of the etymology, because the old botanists regarded almost every weed that grew to be a “sovereign remedie” against scorpions and other “venomous beastes.”

The plant here figured is the best of the hawkweeds for the garden, as it is a perennial, quite hardy, and its orange-coloured blossoms appear at a time when flowers of that colour are scarce, for yellow tones belong rather to spring and autumn than to high summer, when this is at its best. It is a native of Southern Europe, but is occasionally met with in the woods of England and Scotland, as the sweet mignonette, the *Eschscholtzia*, and the umbellate candytuft are met with, as escapes from gardens. It is sufficiently common, indeed, to have obtained a familiar name, for in the rural garland it is called Grim the Collier, because of the black stains that appear at the base of the hairs on the stem and involucre. There was a comedy of the same name in high popularity in the time of Queen Elizabeth, from which it may be inferred that “Grim” was a kind of generic name for a black fellow, who perhaps in the present day would be called a “coaley.”

Amongst the annual hawkweeds, the best are the red hawkweed (*Crepis rubra*), the flowers of which are reddish-purple, and the yellow hawkweed (*Tolpis barbata*), with pale yellow flowers, which are purple in the centre. Of both these there are white varieties, making four sorts in all, the seeds of which should be sown where the plants are to remain, as they do not thrive when transplanted. As

regards culture, any soil will suit them, and if sown on a sunny border in the month of March, they will take care of themselves entirely; but it will be prudent to thin out the clumps, for crowded plants never prosper.

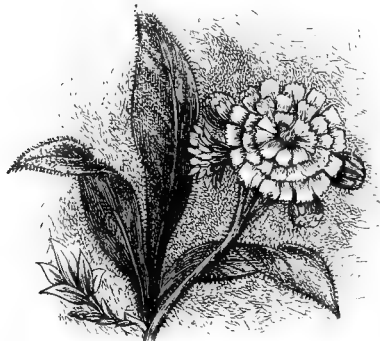
The yellow hawkweed appears to throw a light on the origin of the name hawkweed, although its own botanical name of *Tolpis* has never been explained. The flower, with its yellow rays and dark disc, may be likened to an eye, and the eye of the hawk is proverbial for its keenness. We have but to suppose the hawk resorted to this flower to sharpen his vision, and the explanation is secured. To be sure, a supposition is but a supposition. But that is just the way the ancients made names for familiar things; they had little philosophy, but plenty of fancy, and when reason did not guide, analogy deluded them. About nine-tenths of the ancient names of animals and plants are founded on the flimsiest of fancies.

The larger kinds of wild hawkweeds are often mistaken for dandelions, but they differ in many respects, and they flower later, and are less gaudy in their colouring. The smaller kinds, such as the mouse-ear hawkweed, are neat and pretty, but they do not attract notice as do such kinds as the honey-wort hawkweed and the wall hawkweed. These are so abundant on dry banks and ruins and heathy spots in the later days of summer, as to make a fair semblance of flower-beds in many waste places. They congregate on gravelly soils, as the poppies do in the cornfields, and contribute greatly to the enjoyment of the wandering botanist. As compared with the dandelion (*Leontodon taraxacum*), the "sunflower of the spring," they lack its splendour, and are less conspicuous. Nevertheless, the lines of Lowell on the earlier and more familiar

flower may be properly quoted here as a tail-piece to this miniature essay :—

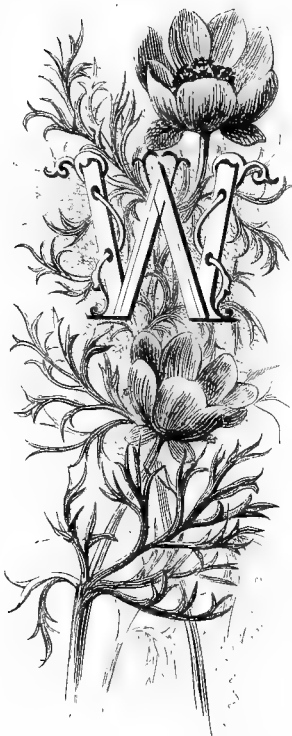
“ Dear common flower that grow’st beside the way,
Fringing the dusty road with harmless gold—
First pledge of blithesome May,
Which children pluck, and full of pride uphold,
High-hearted buccaneers, o’erjoy’d that they
An El Dorado in the grass have found,
Which not the rich earth’s ample round
May match in wealth—thou art more dear to me
Than all the prouder summer blooms may be.

“ Gold such as thine ne’er drew the Spanish prow
Through the primeval hush of Indian seas,
Nor wrinkled the lean brow
Of age to rob the lover’s heart of ease ;
’Tis the spring’s largess which she scatters now
To rich and poor alike with lavish hand,
Though most hearts never understand
To take it at God’s value, and pass by
The open’d wealth with unrewarded eye.”





PHEASANT'S EYE



PHEASANT'S EYE

Adonis autumnalis.

WHAT shall we say of names now? The sneer at those "who allium call their onions and their leeks" must be concealed for the present. Here is a precious old garden friend, the colours of which remind us of the eye of the pheasant, the most beautiful of our poultry, which becomes game in the killing, and the scientific name of which takes us right away into the heart of legendary lore. It is the flower of Adonis, too, the *Adonis autumnalis*, and it is the "rose-a-rubie" and the "red maythes" of the herb women, "by which name," says Gerarde, "it is called of them that dwell

where it groweth naturally, and generally red camomill." But what of all this? Why should we masticate the dry husks of history when we may drink the wine of legendary lore ever fresh from the eternal fountains?

"Hence, pageant history! hence, gilded cheat!
Swart planet in the universe of deeds!
Wide sea, that one continuous murmur breeds
Along the pebbled shore of memory."

The quotation lands us in a difficulty, for it suggests the question that Adonis was perhaps a proper mortal of the common world, and only passed into fable in order to be commemorated. But he is there, in the heart of the fable, and the flower is stained with his blood, or rather the adventurous youth lives in the flower, and is the flower, and so will continue to dower it with human interest while the world shall last. The Adonis of story was the son of Smyrna, who having neglected the worship of Aphrodite, the Olympian goddess of love and beauty, was changed into a tree. From forth the tree in due time came her son, whose infant beauty so beguiled Aphrodite that she hid him in a chest, and confided his keeping to the care of Persephone. Then Persephone was equally enraptured with his beauty, and claimed him for her own, and, as a consequence, a lawsuit followed in the heavenly courts. The great judge Zeus decided the cause. He parcelled the year of Adonis into three divisions; he was to be the pet of Persephone four months, the pet of Aphrodite four months, and the remaining four were to be his own. As a matter of course, he could not love the ladies equally, and as his heart leaned to Aphrodite, he gave her the four months over which he had control, and thus was her companion eight months in the year. Whether the gods disapproved of this, Panyasis does not say, but he tells that the youth was killed by a boar during the chase. The story, as told by Ovid, brings Adonis before us as passionately beloved by Venus, who always cautioned him against the wild boars, but all in vain, for he would pursue them, even when, with tears and entreaties, the beautiful wooer besought him to remain beside her in safety and peace. It is this version which our Shakespeare has wrought up into a poem, which,

whatever its demerits—and they are many—must be regarded as a wondrous display of fancy and power, considering that the bard began early, and that this exquisite work was “the first heir of his invention.” Phanoeles comes nearer home for our purpose. He relates that Dionysus, better known as Bacchus, carried off Adonis when he had been wounded by Apollo, who had appeared in the form of a boar for the purpose. When Venus heard of his fate she hastened to the spot, and charmed the ground that was stained with his blood, so that flowers sprang forth for perpetual remembrance.

The division of the year into three parts for the special convenience of this youth seems to carry the story into the region of the solar myths. There can be little doubt that it has a good place there. Adonis was worshipped in the countries around the Mediterranean; and in older times than those of the Greek fables he was the sun-god of the Phœnicians, the ruler of the seasons, the bringer-forth of corn and wine, and oil and flowers. Adonis is Thamas; he is Osiris; he stands for the moving-power of nature, and even after passing through a series of fanciful fables, he is still capable of bearing testimony to the piety of men in old time, who knowing not the one God, as He has been revealed to later ages, yet sought his face and favour by sacrifice and prayer, and penitence and praise.

We began in a low key, but ran up the scale so fast that we now find it difficult to get down again. But it must be done; and we return to the meaner phases of the subject to say that the worship of Adonis by the Greeks was a festival of some importance, and was continued through two days, the celebrants being women exclusively. The first day was devoted to the exhibition of the statues of

Adonis, laid out as corpses, before which the women tore their hair and made loud lamentations. The second day was occupied with feasting and merriment. It was a distinct feature of this worship to carry green herbs in pots and shells, the favourite plants for the occasion being fennel and lettuce ; for it was said that Venus laid her lovely boy on a bed of lettuces, and the fennel is of so reviving a nature that the fancy might be allowed to indulge the hope that it would bring the dead to life. It would be better to say that the solar myth is fully declared in the display of the dead Adonis, on whose brightness winter has descended, but who will presently revive and kindle life and merriment, and fill the bosoms of mankind with peace and plenty.

Adonis autumnalis is an annual flower, and blooms throughout the summer, notwithstanding its specific name. The seed may be sown at almost any season, but it should always be sown where the plant is to stand, because it does not bear transplanting. Any soil will suit it, and it bears shade fairly well, but blooms more freely in the sunshine.





DOUBLE GERANIUM

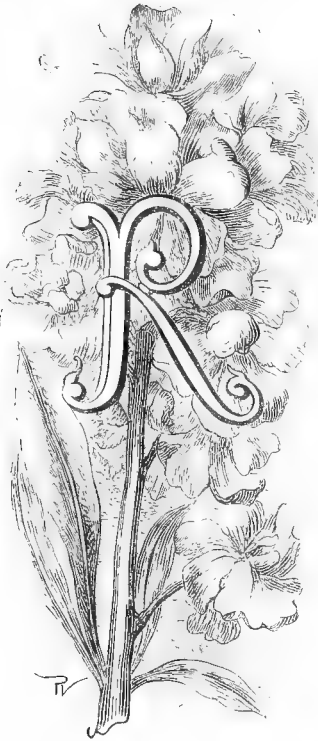
THE DOUBLE STOCK.

Mathiola annua.

REFERENCE to the older authors will in a very striking manner illustrate the much-talked-of improvement of garden flowers. In the days of the early English writers on horticulture there were no such stocks known as we are now familiar with, although the "stock gilliflower," as it was called, had assumed a variety of forms, and there were several kinds with double flowers in cultivation. The gay colouring and the spicy odour of the flowers would ensure popularity for the plant in its least improved form, and these qualities

have ensured constant attention to its merits, so that even fashion, which often puts its foot on beautiful flowers for no good reason whatever, has not succeeded at any time in depreciating this fine old favourite.

There are about thirty species of stocks known to



botanists, and all are natives of the countries bordering on the Mediterranean. Only two or three of the whole number obtain the attention of gardeners, but of these the varieties are numerous, and they are maintained in their integrity by very careful selection; and there is perhaps as much science and skill brought to bear upon stocks as upon any class of plants esteemed in European gardens. The constancy of the several kinds to the characters that obtain distinction for them is truly surprising, and of no less interest to the philosopher than to the simple lover of cheerful flowers.

The generic designation *Mathiola* is of modern origin, and commemorates P. Mathioli, an Italian botanist. In the old books stock gilliflowers are classed under the generic name *Leucoium*, and were familiarly called "violets." Thus Gerarde says: "Under the name of stocke gilliflowers are comprehended many kindes of violets, which differ especially in the colour of the flowers, and also somewhat in the leaues." The most important species is *M. annua*, the "ten-week stock," of which the varieties are innumerable. *M. incana*, the hoary stock, is the foundation of the Brompton and Queen stocks, and probably also of the Giant Cape stock, which is referred to *M. fenestralis*, a species of doubtful distinction. *M. Græca*, the Grecian gilliflower, supplies the race of "wallflower-leaved" stocks, a very distinct section, the leaves of which are of a bright green colour and destitute of hoariness. *M. bicornis* is a curiosity. The flowers are of a slaty-lilac colour; they emit a delightful fragrance during the night, but during the day are scentless.

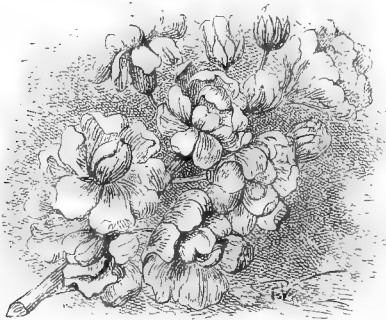
Stocks of all kinds require good cultivation. The compost employed must be light and rich, and during hot, dry

weather they should have abundance of water. The routine of treatment varies with the kinds and the seasons in which they are required to flower, and to succeed thoroughly with any one class demands a considerable degree of patience and skill. Not a few of the English visitors to the Paris Exhibition in 1878 were astonished at the display of double stocks in the gardens on the 1st of May, when the stocks were as gay as we are accustomed to see them in July, and a cruel deluge of rain threatened to wash them out of existence. It did not succeed, however, and the immense masses of white, bluish, and crimson stocks improved as time wore on, and throughout the whole of the month of June were as fresh and beautiful and meritorious as any of the flowers of those great and gay gardens.

The easiest way to obtain a fine display of double stocks is to sow the seed early in the month of March, in pans or boxes filled with light rich soil, and assist germination by putting the seed-pans on a gentle hot-bed. As soon as the plants are large enough to handle they should be pricked out into boxes similarly filled with light rich soil, being put two or three inches apart. This proceeding will promote a dwarf, stout growth, so that by the middle of May the plants will be strong enough to be planted out. The bed should be in a sunny situation, well prepared by deep digging and liberal manuring, and when the planting is finished a coating of half-rotten stable manure should be spread over. The unsightliness of this will quickly be hidden by the spread of the plants, if they are well taken care of. In the event of a sharp frost occurring after they are planted some kind of protection must be afforded. Empty flower-pots turned over the plants may serve the purpose; or boughs of laurel and other evergreen trees

may be stuck in amongst them aslant; or a canvas or net may be stretched over the bed, and supported with stakes in such a way that it does not anywhere touch the plants. For this culture ten-week stocks are most appropriate.

For early-flowering stocks another routine must be adopted. The seed should be sown in July, and the pans should be put in a cool pit or frame, and the seed be allowed to sprout without artificial heat. If the soil of the garden is well drained, and the situation dry and sheltered, the young plants may be planted out as soon as they are large enough, and they will stand the winter well. But in cold, damp localities and on heavy and undrained soils it is sheer waste of time to plant them out, for unless the winter is exceptionally mild they will certainly perish. In this case they may be potted into small pots and have the shelter of a frame or pit. The Brompton and Queen varieties are well adapted for this culture.





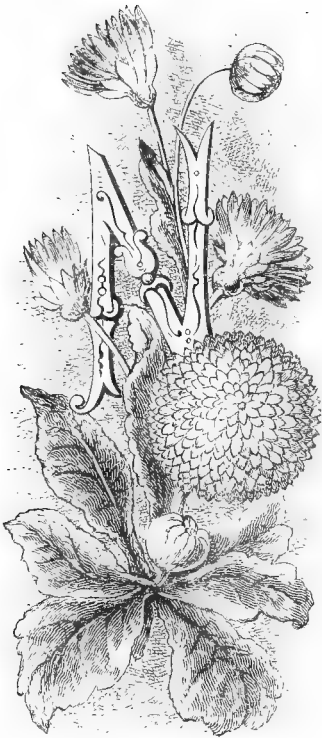
DOUBLE DAISY.

DOUBLE DAISY.

Bellis perennis flore pleno.

ONE of our familiar garden flowers exemplifies more pleasingly than the daisy the ready compliance of nature with the requirements of art. As the field daisy appears mingled with the rough herbage that is already forward for the scythe, it is wanting in the characters that constitute a proper garden favourite. It is beautiful indeed, with its pink-tipped buds, and its silvery rays and golden disc; but in that simple form it fails to satisfy the taste that would adopt it as a domestic flower. And so the florists have improved it; or, if the term "improved" is objected to, we

will say they have modified it in accordance with their notions of the necessary properties of a garden daisy. The yellow disc has been abolished; the flower is enlarged to twice or thrice the size of the original; the form is that of a hemispherical cushion, consisting of closely-set florets, the



colour white, rose, red, crimson, or purple. Moreover, the substance of the flower has been so much augmented that when removed from the plant it will, with but little care, continue fresh and beautiful for several days, while the wild daisy would, as a cut flower, be unattractive in the first instance, and would perish almost immediately after removal. The flower-garden affords opportunity for many studies of the influence of man over the forms of nature, but we shall find few examples so striking as the one before us, and none that surpasses it in directness of appeal to the ordinary vision. It needs no philosopher to see the difference between a single and a double daisy, but the conversion of the one into the other may very properly fill the mind with surprise and delight.

There are in our gardens many double daisies of remarkably fine quality, and they are singularly useful when planted out in open breezy places, more especially in the northern counties. In a town garden they do not display their characters in a satisfactory manner; they become "weedy," and very often the roots are destroyed by ground vermin. But in a country garden, more especially on a sandy soil, and in a situation exposed to keen winds, these double daisies are, in their way, invaluable. They may be planted to form solid masses of colour, and they will flower continuously from March to August, the growth being exceedingly neat, the flowers large and brilliant, and borne on short stems, so as to sit, as it were, on the green bed formed for them by the small leaves. Where the soil is heavy, and there are walls and trees near at hand, they produce large leaves, and the flowers rise on tall stems, and a month or so is the utmost time of their continuance; and, at their

best, they are but apologies for daisies, as compared with the rich and perfect bloom that may be seen in many a well-managed breezy country garden.

The variety figured for the present purpose is known in gardens as *Rob Roy*. It originated in the north, and fairly represents the class of double daisies that are now in favour as hardy bedding and border plants. There are at least a score of varieties differing in colour, and the equal of *Rob Roy* in quality. It may be well to name *Snowflake*, white; *Eliza*, purple; *Crown*, mottled; *Rubens*, red; and *Conspicua*, rose, as constituting a pretty and useful collection for planting a group of beds or to dot the common border with lively flowers. There are some curious daisies worthy of attention, such as the "hen and chickens," in which a full-sized flower is surrounded by a number of smaller ones. This was known to the old florists as "Jackanapes on horseback." But more useful than this is the aucuba-leaved variety, catalogued as *Aucubæfolia*, the leaves of which are richly blotched and veined with yellow on a ground of lively green, and the flowers rich deep red or pure white. This needs pure air and a sandy soil to keep its place in the garden, and where it thrives it increases rapidly, and is exquisitely beautiful.

The Continental florists have given more attention to the daisy than any of our compatriots. The late Louis Van Houtte, of Ghent, was particularly partial to the flower, and encouraged the production of new varieties, his catalogue, several years since, enumerating over twenty sorts. Many of these have become established in the English nurseries, and are obtainable at prices so low that a country garden may be made glorious with daisies for a very trifling outlay. Town florists who have a fancy for

these flowers would do well to obtain a few of the best sorts, and give them a fair trial during one whole year. If then satisfied with them, they may purchase and plant freely, and be well rewarded for their pains.

Double daisies may be raised from purchased seed with very little trouble. We have obtained from cheap shop seed some very good flowers, with, as might be expected, a proportion of poor weedy things that were not worth keeping. The best way to raise seedlings is to sow in pans early in the spring, and when the plants are large enough they should be planted in the most open situation that can be found for them.

