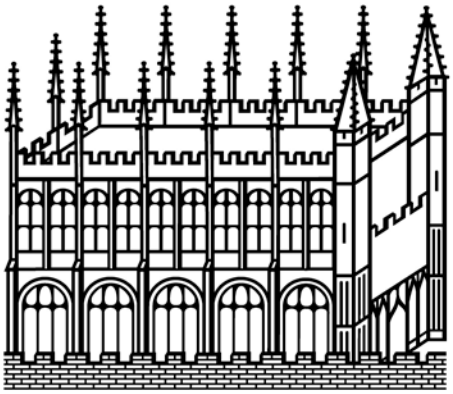


FAMILIAR
GARDEN FLOWERS.

FIGURED BY

F. EDWARD HULME, F.L.S., F.S.A.;

AND DESCRIBED BY

SHIRLEY HIBBERD.

"The generous glebe
Whose bosom smiles with verdure, the clear tract
Of streams delicious to the thirsty soul,
The bloom of nectar'd fruitage ripe to sense,
And every charm of animated things,
Are only pledges of a state sincere,
The integrity and order of their frame,
When all is well within, and every end
Accomplish'd. Thus was Beauty sent from Heaven,
The lovely ministress of truth and good
In this dark world: for truth and good are one,
And Beauty dwells in them and they in her,
With like participation."

AKENSIDE, *Pleasures of the Imagination*, I., 364-76.

Second Series.

WITH COLOURED PLATES.

CASSELL, PETTER, GALPIN & CO.:

LONDON, PARIS & NEW YORK.

PREFACE.

THE completion of a Second Series of "FAMILIAR GARDEN FLOWERS" may suggest to some readers that suitable subjects will now be growing scarce. But there will be no scarcity even when the Third Series is completed; and it matters not how far we proceed, there will still be suitable subjects remaining, so vast is the field in which these humble labours are pleasantly prosecuted, and so infinite the variety of beautiful and familiar garden flowers. We are still only on the threshold of the temple of Flora, and in the Third Series, therefore, we shall be enabled, without difficulty, to present a selection differing entirely from those in the two series now completed; and we look for augmentation rather than diminution of public interest, both in the flowers themselves and in our humble endeavours to present their portraitures truthfully.

S. H.

CONTENTS.

SYNOPSIS.

THE notes which follow are on the same plan as in the synopsis of the First Series. In the light sketches of which the work consists scientific details would be out of place, and yet may sometimes be desired by the reader. By bringing together, apart from the descriptions of the plates, a few elementary particulars of the relationships of the plants figured, as well as of their structure and uses, this synopsis may serve some useful purpose, although it is made as brief and unobtrusive as possible.

MALOPE, from *malos*, soft, in allusion to the texture of the leaves and the emollient properties of the plants. NATURAL ORDER, *Malvaceæ*. LINNÆAN: 16, *Monadelphia;* 8, *Polyandria*.—The mallows are endogenous plants, comprising herbs, shrubs, and trees, with simple leaves which are usually lobed, and with showy flowers which, with very few exceptions, have five sepals and five petals. The recognition of mallow worts by the beginner in botany is extremely easy, as the family likeness is preserved all through in a conspicuous way. The manner in which the flowers are spirally twisted before they expand is peculiar, and the union of the filaments of the stamens into a tube which sheathes the style is equally peculiar and characteristic. The ovary consists of numerous carpels arranged in a whorl around a central axis; they are one-celled; the seeds are somewhat three-sided, and are sometimes covered with a cottony down. In this family we find the mallow, the hibiscus, the hollyhock, the cotton plant, the sida, and the abutilon, all more or less "familiar" flowers. The silk cotton tree (*Bombax*) is closely related to the mallows, although properly placed in a separate order. It is from its seed-vessels that the soft fibre is derived, precisely as in the common cotton (*Gossypium*), which is strictly malvaceous.

ROSA, from *rhod*, red, is *par excellence* the name of a red flower; and it follows that rhododendron means a red-flowering tree. A very considerable proportion of the plants that are classed with the roses have white flowers, and thus the term is enlarged in its purport. and when considered scientifically loses all its relationship to colour. N.O., *Rosaceæ*. LINNÆAN: 12, *Icosandria;* 1, *Polygynia*.—The roseworts have distinct prevailing characters by means of which they may, for the most part, be readily recognised by the student of botany, but a few genera will, perhaps, occasion momentary perplexity. Rosaceous plants are herbs, shrubs, or trees; they have leaves simple and leaves compound, as, for example, the apple and pear have simple leaves, and the rose, the spiræa, the strawberry, and the potentilla usually

have compound leaves. The flowers are mostly hermaphrodite; but exceptions occur, as, for example, in some kinds of strawberries, in which the male and female flowers are on separate plants. A common character is to be found in the regularity of the flowers, which, however various under cultivation, may be described as usually composed of five sepals and five petals, with stamens indefinite in number, inserted with the petals. The fruits are more various than the flowers. In the rose it is a "hep" or berry, in the apple it is a "pome," in the strawberry and raspberry it is a swollen receptacle in which the seeds are embedded. For the determination of rosaceous plants the flower is of the first importance; but it is no easy matter to determine them. An apple-tree, a bramble-bush, a meadow-sweet, and a cherry are all of them rosaceous plants, and perfectly wholesome, casually considered, although from a very considerable number of them we may obtain that mostly deadly of poisons—prussic acid. The most important of the rosaceous plants are our hardy fruits, comprising the apple, pear, plum, cherry, peach, almond, strawberry, raspberry, bramble, and sloe. But these, though known as "fruits," are widely separated in the order, the pomes being so far removed from the berries that they might well be classed in separate orders. Interesting plants for the wayside botanist are the agrimony and the potentilla, which do not readily declare themselves as rosaceous. As for the true roses, they are unmistakable, and as types of the order they are not less important than as types of beauty.

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.

DIELYTRA, from *dis,* two, and *elytron,* a sheath or wing-case. It is also called *Diclytra* and *Dicentra.* N.O., *Fumariaceæ.* LINNÆAN: 17, *Diadelphia;* 2, *Hexandria.*—The plants of this order are herbs closely allied to the poppies. The leaves are alternate, much divided; flowers irregular, sometimes in terminal racemes, sometimes opposite the leaves, the colours usually purple, red, and yellow, more rarely white. Good examples of structure are furnished by the wild fumitory, the corydalis, and the dielytra. It will be seen that the calyx consists of two flat pieces that soon fall off; the corolla is tubular, formed of four unequal petals. In the fumitory the largest petal is drawn out into a spur; but in dielytra there is no spur. The fruit is usually a pod containing many seeds, which are shed by the opening

of the pod in two valves. The plants of this order have but little importance in the arts, and they are, for the most part, as innocuous as they are useless. The common fumitory (*F. officinalis*) is, however, often used as a medicine in skin diseases, and as an aid to the stomach after exhausting fevers. In many places the juices of the fumitories or smoke-worts are used to curdle milk.

ZINNIA, named after J. G. Zinn, German Professor of Botany. N.O., *Compositæ,* or *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*—For characters see under "Aster" in synopsis to First Series, page xi.

PHLOX, from *phlox,* a flame, in allusion to the splendour of the flowers. N.O., *Polemoniaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.* —The order represented by Polemonium consists, for the most part, of herbaceous plants with alternate leaves, regular flowers which have a five-cleft calyx, and a five-lobed corolla consisting of one piece as in the primulas. The stamens are five in number, inserted alternately with the lobes of the corolla; ovary three-celled, fruit a capsule. There is not much to be said of this order, as it has no important place in the arts, and it is restricted in its forms and geographical distribution. It is more largely represented in the new than in the old world, and the majority of its members are found in temperate climates, a few of the smaller kinds giving a glow of colour to alpine and sub-arctic scenery. As garden plants, many of them are of great importance, as not only the phlox, but the gilia, ipomopsis, cobæa, leptosiphon, and the lovely cantua are members of the order.

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, pancratium, hippeastrum, agave, and vallota, all much-prized garden plants.

TROPÆOLUM, from *tropaion*, a trophy. N.O., *Tropæolaceæ*. LINNÆAN: 8, *Octandria;* 1, *Monogynia.*—See summary under "Tropæolum," on page vii. of the synopsis to the First Series.

PLUMBAGO, from *plumbum*, lead. N.O., *Plumbaginaceæ*. LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—Herbs or shrubs with alternate leaves, and regular flowers consisting of one-pieced calyx and corolla, each divided into four or five lobes. Stamens as many as the lobes, and placed opposite to them. A comparatively unimportant order, the principal members of which are the statice or sea lavender, the acantholimon, and the plumbago. All these are useful in one way or another in the arts and in medicine, some of the statices being employed in tanning leather, and the leadworts being emetic when taken internally, and powerfully stimulant to the skin when applied externally.

GEUM, from *geo*, to stimulate, the roots of some of the species being employed in medicine, and sometimes as substitutes for Peruvian bark. N.O., *Rosaceæ*. LINNÆAN: 12, *Icosandria;* 3, *Polygynia*. The geum, or avens, is allied to potentilla, and is consequently a near relative of the bramble and strawberry. Instead of producing a succulent receptacle called for convenience a "fruit," the geums and potentillas produce dry carpels. They are of considerable importance, however, on account of the tannic acid of their roots, those of the common avens, or Herb Bennett, being sometimes employed to flavour ale, while the roots of the common tormentil are in the north used in place of hops in brewing. For botanical characters see summary under "Rosa," page vii.

HEMEROCALLIS, from *hemero*, a day, and *kallos*, beauty, in allusion to the brief duration of the flowers. N.O., *Liliaceæ*. LINNÆAN: 6, *Hexandria;* 1, *Monogynia.*—See synopsis, First Series, under "Lilium," page vii.

ACHILLEA, from *Achilles*, pupil of Chiron, who first used it in medicine. It is worthy of note that the mighty Achilles, who slew Hector at Troy, was trained in horse-riding by Chiron the Centaur. The coincidence makes the derivation doubtful. N.O., *Compositæ*, or *Asteraceæ*. LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*—See under "Aster," synopsis, First Series, page xi.

PELARGONIUM, from *pelargos*, a stork, in reference to the form of the fruit before the seeds separate. N.O., *Geraniaceæ*. LINNÆAN : 16, *Monadelphia ;* 4, *Heptandria.*—This order is of great extent and importance, and deserves careful study. The order may for present purposes be divided into three sections—the Pelargoniums, or stork's-bills, which have irregular flowers ; the Geraniums, or crane's-bills, which have regular flowers, with ten stamens ; and the Erodiums, or heron's-bills, which have five stamens. The showy plants of our gardens are pelargoniums, and mostly natives of Southern Africa. The British species of the order are true geraniums or erodiums, one of the loveliest being the blue geranium (*G. pratense*) of our wet pastures and sheltered valleys. All the plants of this order are herbs or soft-textured shrubs ; many have velvety fragrant leaves ; and the flowers usually consist of five pieces, which in the pelargonium are of unequal sizes, but in the geranium are all of the same size. The fruit is dry, sometimes awned, owing to a feathery growth of the styles, and this structure favours their transport by the wind. The order has no place in tropical vegetation ; but many of the species are found in the warmer temperate climes, and most of them affect open prairie lands where they are fully exposed to solar light. In their properties they are astringent and balsamic, and a few are of importance in the arts. Their exceeding beauty and almost endless variety entitle them to the highest consideration of the garden botanist.

CUPHEA, from *kuphos*, curved, referring to the form of the seed-pods. N.O., *Lythraceæ*. LINNÆAN : 11, *Dodecandria ;* 1, *Monogynia.*—The Loosestrife family consists of herbs, shrubs, and trees, very variously furnished with leaves and flowers, and consequently a troublesome one to the student. The leaves are usually simple ; the flowers hermaphrodite ; the calyx tubular, and the corolla is inserted in the summit of the tube. The principal genera are Lythrum—of which we have a fine example in our river-side plant, *L. salicaria*—Cuphea, Lagerströmia, Peplis, and Ameletia. A member of this order, the *Physocalymma floribunda* of Brazil, supplies the rosewood of commerce ; and another, the *Lawsonia alba* of Egypt, is the source of the celebrated henna, or heuné, which the ladies of the East employ for dyeing their nails and fingers.

BEGONIA, named after M. Begon, a French botanist. N.O., *Begoniaceæ*. LINNÆAN : 21, *Monœcia ;* 9, *Polyandria.*—This small but interesting order is of little importance in the arts, but of great interest to the botanist and the gardener. It consists of herbs and undershrubs with alternate leaves, almost invariably divided ; the flowers are unisexual, and usually consist of four pieces. In the male flowers the stamens form a spherical head ; in the female flowers the stigmas are equally conspicuous, and resemble those of a melon or cucumber. It is singular that a four-parted flower should produce a three-lobed fruit, but such is the fact, and it is somewhat of an anomaly. The position of this order has been much discussed, but appears to have been settled by Dr. Lindley, in his "Vegetable Kingdom." He says, "The real affinities appear to be with cucurbits, with which Begoniads accord in the unisexual flowers, peculiar stigmas, and even ternary number of the carpels. The discovery by Mr. Hartweg of Begoniads scrambling up trees and shrubs to the height of twenty-five feet

renders the resemblance almost complete." The begonias are in some places eaten as salads, the leaves and stems being agreeably flavoured with oxalic acid. The roots are bitter and astringent.

CRATÆGUS, from *kratos,* strength. N.O., *Rosaceæ.* LINNÆAN: 12, *Icosandria;* 2, *Di-pentagynia.*—See summary under "Rosa," page vii.

LABURNUM, "from *labor,* denoting what belongs to the *hour* of *labour,* and which may allude to its closing its leaflets together at night, and expanding them by day." This explanation by Dr. Prior is so unacceptable that we prefer Professor Skeat's declaration that the derivation is unknown. *Cytisus laburnum* belongs to N.O. *Fabacæ,* or *Leguminiferæ.* LINNÆAN: 17, *Diadelphia;* 4, *Decandria.*—See summary under "Sweet Pea," synopsis, First Series, page ix.

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 subshrubby; 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, spergula, 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.

COREOPSIS, from *koris,* in allusion to the resemblance of the seed to a small beetle.—See under "Aster," in synopsis, First Series, page xi.

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

YORK AND LANCASTER ROSE.—See summary under "Rosa," page vii.

LOBELIA, named after M. Lobel, botanist. N.O., *Lobeliaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—This order consists almost exclusively of herbs and under-shrubs of suspicious qualities. The leaves are alternate and simple; the flowers irregular; the corolla five-lobed; the fruit a capsule opening at the top. The species are, for the most part, moisture-loving plants, possessing acrid juices of the most poisonous nature.

MATHIOLA, named after P. Mathioli, an Italian botanist. N.O., *Cruciferæ.* LINNÆAN: 15, *Tetradynamia.*—See under "Wall-flower," synopsis, First Series, page viii.

JASMINUM, a Latin form of the Eastern name of the plant. —See under "Jessamine," synopsis, First Series, page xiii.

INDIAN PINK, or **DIANTHUS,** from *dios,* divine, and *anthos,* flower, the divine flower. N.O., *Caryophyllaceæ.* LINNÆAN: 10, *Decandria;* 2, *Digynia.*—This very interesting order has been remarked upon under "Lychnis," page xii.

SALVIA, from *salvo,* to save, in allusion to its salutary properties. N.O., *Lamiaceæ.* LINNÆAN: 2, *Diandria;* 1, *Monogynia.*—The order of Labiates, or Lipworts, is of immense extent and considerable importance. The plants composing it are herbs with square stems; opposite leaves; irregular five-toothed flowers; the corolla tipped; the fruit a four-seeded nut enclosed in the permanent calyx. A very large proportion of them are aromatic, stimulant, and pungent; some are mildly tonic; none of them are poisonous. The order contributes largely to the "herb garden" such plants as sage, thyme, lavender, mint, basil, marjoram, savory, peppermint, and other medicinal and flavouring herbs. In this order also we find the celebrated Patchouli plant (*Pagostemon patchouly*), the rosemary, horehound, and ground ivy. Amongst the ornamental garden plants of the order are the showy monarda, the several species of salvia, nepeta, hyssop, leonitis, prostanthera, scutellaria, &c.

CRIMSON FLAX, or **LINUM.** The generic name is from *linon,* flax, from which we have linen, line, lint, linseed, &c. N.O., *Linaceæ.* LINNÆAN: 5, *Pentandria;* 5, *Pentagynia.*—The order comprises herbs and woody plants with entire leaves and hermaphrodite flowers. The calyx and corolla are each of five pieces, and the stamens agree in number and are alternate with the petals. The fruit is a capsule containing many compressed ovate seeds which are without albumen, and have a mucilaginous integument. The common flax is *Linum usatissimum,* one of the most useful of plants, the history of which carries us back to the earliest days of civilisation. It is believed to be a native of Egypt; but that belief may rest upon the fact that it first acquired proper renown there, and being used by a cultivated people, obtained through them an honourable place in literature. This plant, everywhere grown for its tenacious fibres, is comparatively unknown in gardens, and the observer of vegetable forms who is

unacquainted with it may be advised to sow a few common flax seeds in the spring, and in due time look for an elegant tuft of vegetation crowned with pretty blue flowers.

RUDBECKIA, named after O. Rudbeck, a Swedish botanist. N.O., *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 3, *Frustranea.*—See summary under "Aster," synopsis, First Series, page xi.

JAPAN QUINCE, or **PYRUS JAPONICA.** Name from *pyrus,* a pear, as in Virgil and Pliny; but it is difficult to avoid the suggestion of something fiery, such as we have in the brilliant flowers of this plant, which, we may suppose, was quite unknown to the ancients. The pear as known in Europe cannot be spoken of as a fiery tree, and it is not often the fruits of the pear are highly coloured. The quince was known to the Greeks as *kudonia,* hence the modern botanical distinction, the Japan quince being more properly classed as *Cydonia Japonica,* although best known under the generic distinction of Pyrus. As for the familiar word *pear,* that is true English, having come down to us from the Saxon with scarcely any change. The pears, quinces, and apples belong to the pomaceous section of the great family of roses. In this same section occur the medlars, sorbs, and haws. In other sections of the family we find the peaches, cherries, and plums; and again in others, the strawberries, raspberries, and blackberries, and mixed variously with these are true rosaceous plants that do not produce edible fruits. For example, the spiræas, potentillas, and agrimonies are rosaceous plants; but they do not commend themselves to our attention in so striking a manner as the pears, plums, cherries, and peaches.

COLUMBINE, or **AQUILEGIA.** The familiar name is from *columba,* a dove, the botanical name from *aquila,* an eagle; in both cases a fancied resemblance to a bird supplies the name, and it cannot be called far-fetched. N.O., *Ranunculaceæ.* LINNÆAN: 13, *Polyandria;* 5, *Pentagynia.*—See summary under "Aconitum," synopsis, First Series, page viii.

PURPLE CLEMATIS.—See summary under "Clematis," page viii.

POPPY ANEMONE. The generic term *Anemone,* or windflower, is from *anemos,* the wind, or from the river Anemo, that flowed past the city of Ravenna, where probably anemones grew abundantly in ancient times. In its relationships the anemone comes near to the ranunculus. One of its peculiarities is an involucre of three pieces usually distinct from the flower, and there is no pore or nectary as in the ranunculus.

GLADIOLUS, from *gladius,* a sword, in allusion to the form of the leaves. N.O., *Iridaceæ.* LINNÆAN: 3, *Triandria;* 1, *Monogynia.* —Although the Cape species of gladiolus are best known in gardens, there are a few European species, and two of them are found wild in Britain. *Gladiolus segetum,* the cornflag, and *G. communis,* which may

be called English if not British, very fairly represent the family, and are worthy of the special attention of the rambling botanist. Hitherto, however, *G. communis* has only been found amongst the bracken near Lyndhurst, in the New Forest. See under "Iris," synopsis, First Series, page xiii.

BROWALLIA. Named after Bishop Browallius. N.O., *Scrophulariaceæ.* LINNÆAN: 14, *Didynamia;* 2, *Angiospermia.*—See summary under "Mimulus," synopsis, First Series, page x.

HONEYSUCKLE, or **CAPRIFOLIUM.** The generic name means *goat-leaf,* because, we suppose, of the tendency of the plant to climb; but such etymologies are unsatisfactory. N.O., *Caprifoliaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—An interesting order, comprising, for the most part, deciduous twining shrubs. An important section is the genus Lonicera, named after Adam Lonicer, which is closely related to the genus Caprifolium. The flowers in this order are usually formed of a five-lobed calyx and a five-lobed corolla, each consisting of only one piece; the fruit is a berry. The associates of the honeysuckles are the elders, viburnums, snowberries, weigelas, cobæas, and lycesterias, all of which are of free growth, and tree-like or sub-shrubby. They are all temperate or sub-arctic plants, and belong exclusively to the northern hemisphere. In their properties they are scarcely attractive, although the elder has some claims to a leading place in the economic garden because of its styptic juice, which may be taken as elder wine or indirectly as port wine, the berries being used both to colour and flavour the more expensive liquor.

COMMELINA. Named after J. and G. Commelin, Dutch botanists. N.O., *Commelinaceæ.* LINNÆAN: 3, *Triandria;* 1, *Monogynia.*—The Commelinas, or spiderworts, are of comparatively small consequence, so far as we know, in the vegetable world. They are herbs with hermaphrodite flowers, which are arranged in two sets of three pieces; the fruit is a capsule. Some of the plants of this order are edible, and those known in gardens which produce tuberous roots are sweet and agreeable. From the flowers of *Commelina communis* ultramarine is prepared.

CINERARIA, from *cineres,* ashes, in allusion to the grey down on the leaves of many species. N.O., *Compositæ,* or *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*—See summary under "Aster," synopsis, First Series, page xi.

AZALEA, from *azaleos,* dry, none of the species being met with in marshy ground, but most of them in dry and often barren situations. N.O., *Ericaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—The azalea does not, to the casual eye, appear related to the heather, but a critical scrutiny reveals the family tie. All the heath-worts, or ericaceous plants, are trees or shrubs with hard wood, entire leaves, and hermaphrodite, regular, or slightly irregular flowers. The calyx and corolla are four or five-divided, the stamens being double the number, and inserted in the receptacle. The fruit is in a capsule con-

taining many small seeds. It is a large order, comprising the heaths, arbutus, clethra, azalea, rhododendron, ledum, and many other shrubs that are prized for their beauty, but are of small importance in the arts, the majority of them being bitter and astringent, and producing inedible fruits. The arbutus is an exception, as it produces an edible fruit, and hence is known as the "strawberry-tree." The bear-berry (*Arctostaphylos*) is another example, for if the berries are rarely eaten by man, they are by various species of birds that are prized as food. The common heather (*Calluna vulgaris*) is a very serviceable plant, as ale is brewed from its young tops with an addition of malt; horses, cattle, and sheep feed on it, but they do not prosper without the aid of better food. As a honey plant it is of great value, differing in this respect from the beautiful azalea, the honey from which (perhaps) poisoned Xenophon's soldiers. From *Ledum latifolium* is derived Labrador tea, and *Gaultheria procumbens* furnishes mountain tea.

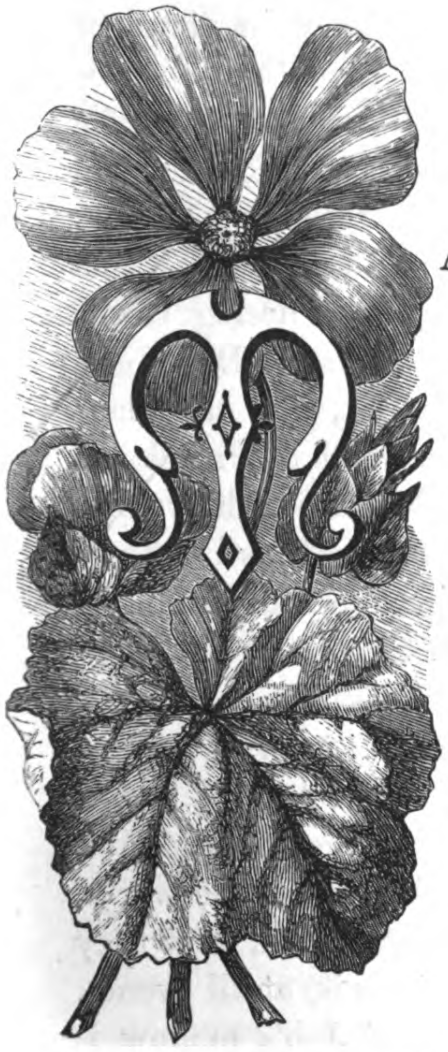
EVERLASTING PEA, or LATHYRUS. N.O., *Leguminoseæ*, or *Fabaceæ*. LINNÆAN: 17, *Diadelphia*; 4, *Decandria*.—See summary under "Sweet Pea," synopsis, First Series, page ix.

PETUNIA. See under the same head, synopsis, First Series, page xiv.

Lone Flower, hemmed in with snows, and white as they,
But hardier far, once more I see thee bend
Thy forehead as if fearful to offend,
Like an unbidden guest. Though day by day
Storms, sallying from the mountain-tops, waylay
The rising sun, and on the plains descend;
Yet art thou welcome, welcome as a friend
Whose zeal outruns his promise! Blue-eyed May
Shall soon behold this border thickly set
With bright jonquils, their odours lavishing
On the soft west wind and his frolic peers;
Nor will I then thy modest grace forget,
Chaste Snowdrop, venturous harbinger of Spring,
And pensive monitor of fleeting years.

CRIMSON MALLOW

FAMILIAR GARDEN FLOWERS.



THE CRIMSON MALLOW.

Malope grandiflora.

MALLOWS have a strong family likeness, and can scarcely be mistaken by one who has acquired a distinct impression of the flower of any one of the species. The mallow is a mallow of course, and the hibiscus, hollyhock, cotton-plant, and lavatera are also mallows, for they are members of the honourable order *Malvaceæ*, and vary from the type of the order in only slight degrees. The corolla is more or less salver-shaped, and the filaments of the stamens are combined into a tube, which forms a conspicuous and peculiar centre to the flower. The plant here figured, which is variously known as *Malope trifida* and *Malope grandiflora*, may be regarded for garden purposes as a representative flower, and the student of botany will

find it as useful as any to elucidate the characters of the Malvaceous order.

The plants of this order are all harmless, and many of them useful. Those best known for their usefulness are the marsh-mallow (*Althœa officinalis*) and the cotton (*Gossypium herbaceum*). The first, which in this country is chiefly regarded as an emollient, is in the East employed as an article of food, although it is only in times of scarcity that it acquires any degree of importance. It is cooked as a pot-herb, and eaten with whatever can be found to flavour it agreeably, as onions, garlic, &c. In Job (xxx. 1) we read of those "whose fathers he would have disdained to have set with the dogs of his flock," and whose wretched plight is indicated by their fleeing to the wilderness to "cut up mallows by the bushes." Dr. Hogg, in his "Vegetable Kingdom" (page 103), says the plant "grows in great abundance in Syria," and has no doubt about its identity. But Mr. Houghton, in Smith's "Dictionary of the Bible," reads the passage thus: "They pluck off the sea-orache near the hedges, and eat the bitter roots of the Spanish broom." The sea-orache (*Atriplex halimus*) constitutes a very acceptable kind of spinach when cooked, but it is scarcely, we think, such a plant as a company of starving vagrants would look for; and it may be advisable at this point to quit the subject. That mallows of certain kinds abound in all parts of the world, except within the polar regions, is certain, and that they should obtain the notice of ancient writers is, at all events, highly probable. When the question of Job's mallow is settled to the satisfaction of the reader, we commend to his consideration the frequent mention of mallows in Tusser's "Five Hundred Points of Good Husbandry."

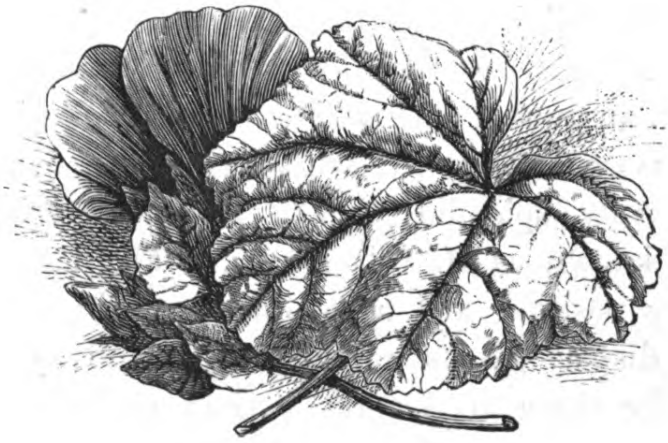
The order to destroy them, to root them out, &c. &c., occurs so frequently that we are bound to suppose mallows were more abundant on farm lands three hundred years ago than now. And the question will arise, What particular kind of mallow aroused the enmity of Tusser? We should assign the honour to the common mallow (*Malva sylvestris*), a rampant-growing, showy, and we may even say noble plant, with purple-tinted rosy flowers of the peculiar shade called *mauve*, which means simply mallow colour—the Latin *malva* being thus softened in passing into French.

The tree-mallow (*Lavatera arborea*) has of late years acquired some degree of importance, as supplying a nutritive cattle-food, and a fibre suitable for the paper-maker. In a report by Mr. Gorrie, published in the *Gardener's Magazine* for June 9, 1877, it is stated that the seeds can be manufactured into a cake scarcely inferior to that of linseed for feeding purposes, while the fibre is equally well adapted for manufacture into paper or cordage.

The plants of this family that are especially worthy of a place in the garden are *Malope grandiflora*, an annual of which there are two varieties, the crimson and the white; the hollyhock (*Althæa rosea*), a perennial herb; the tree-mallow (*Lavatera arborea*), a biennial; *Hibiscus Africanus*, an annual with yellow flowers; *Hibiscus roseus*, a tall herbaceous perennial with enormous purple flowers; and the truly splendid shrub, *Hibiscus syriacus*, more generally known as *Althæa frutex*. The last requires a dry sunny position and a somewhat sandy soil to make a grand display of its white, rosy, crimson, or purple flowers—for there are several distinct varieties—but it is not very particular as to position, provided it is not over-

much shaded by trees. One of the grandest we have ever seen was a tree of the purple variety, in a garden which had formerly been a sand-pit, in the Rue de Morny, Paris. The tree stood, and probably still stands, in the midst of pleasant greenery, some twenty feet below the footway, on the right-hand side on the way out from the city, and was remarkable for its great size and the number and splendour of its purple flowers.

Returning to the marsh-mallow, we remember finding a bundle that had been hanging on the wall of a somewhat damp store-room for three years, and the shrivelled stems, brown and mouldy, were producing a few fresh and quite pretty flowers. This is the most striking instance, among many we can call to mind, of the continuance of vitality in some degree and in some part of a plant long after it had ceased to enjoy the advantage of connection with mother earth. Mr. Loudon, in illustrating the legend of the Glastonbury thorn, tells of a branch of the common thorn that "hung for several years in a hedge among other trees, and though without root, or even touching the ground, produced every year leaves, flowers, and fruit."



ROSE

THE PERPETUAL ROSE.

Rosier Hybride Remontante.
Rosa hybrida semperflorens.

IT appears in the nature of a duty to be sentimental when there is anything to be written about roses; therefore, in order to be heterodox, we propose to be businesslike, and refrain from gushing. The flower figured is one of the so-called "perpetual" class, with a decided preponderance of the blood of the China rose. The hybrid perpetuals have been produced by crossing and re-crossing the China and Bourbon races until a tolerably distinct class has been produced, but the evidences of their origin are for the most part plainly manifested in their more prominent characteristics.

The hybrid perpetuals are the most useful of all roses, and may be said to combine in themselves the best qualities of all the best garden roses, for in a certain number we have the rich scent of the "Provins"

combined with the handsome foliage and full rich flowers of the two great sections that have mainly contributed to their production.

In forming a plantation of roses it is desirable to plant a fair proportion of dwarf bushes as well as of standards, and it is a great point to secure those bushes "on their own roots"—that is to say, the plants should have been raised from cuttings, and not by grafting or budding, as is necessarily the case with standards. If amateurs would lean towards own-root roses, and abandon the custom of planting standards chiefly, they would considerably augment their garden pleasures, for the many disappointments that the inexperienced have to endure in the growth of roses are, in great part, attributable to the prevailing belief in standards as the best form in which to grow the "queen of flowers." This is a very important matter, and one but little understood. If own-root bushes cannot be secured, those grafted on the manetti stock may be planted to form bushes, and a watch must be kept upon the suckers that rise from the root-stock, because if these are allowed to grow, the plantation will soon become worthless. But own-root roses may be allowed to throw up suckers, for they are necessarily all of a piece, root and branch, and it is their nature to renew themselves, as do raspberries and blackberries, by the production of strong shoots from the root. This power of renewal from the root is necessarily destroyed by grafting and budding on brier stocks, and thus the artificial form of the tree has an insecure tenure of existence.

The best soil for roses is a deep, rich, and rather moist loam. Almost any fairly good soil will grow roses

of some sort, but for vigorous growing varieties that should produce large and very double flowers, the soil must be loamy and liberally manured. The standard roses, being on the English brier, need a rather stiff soil, which should be deeply dug for them and very liberally manured. Therefore those who live in clay countries may indulge in standards, and they may be advised always to give the preference to vigorous growing sorts, and to plant trees with good heads in the first instance. It is a pity to disfigure a garden by planting long sticks with a few little ugly twigs at the top, for those starvelings rarely become fine plants, and if they are ugly in the first instance they are likely to become more ugly with lapse of time. Where the soil is thin and stony and dry, the best form of rose is the "manetti"—that is to say, those that are grafted on the Italian brier bearing that name, for this brier can endure the trials of a poor, light soil, better than the English brier. But a good garden soil that has been well prepared will produce good roses in plenty, whether they be on English briers or Italian briers or own-roots.

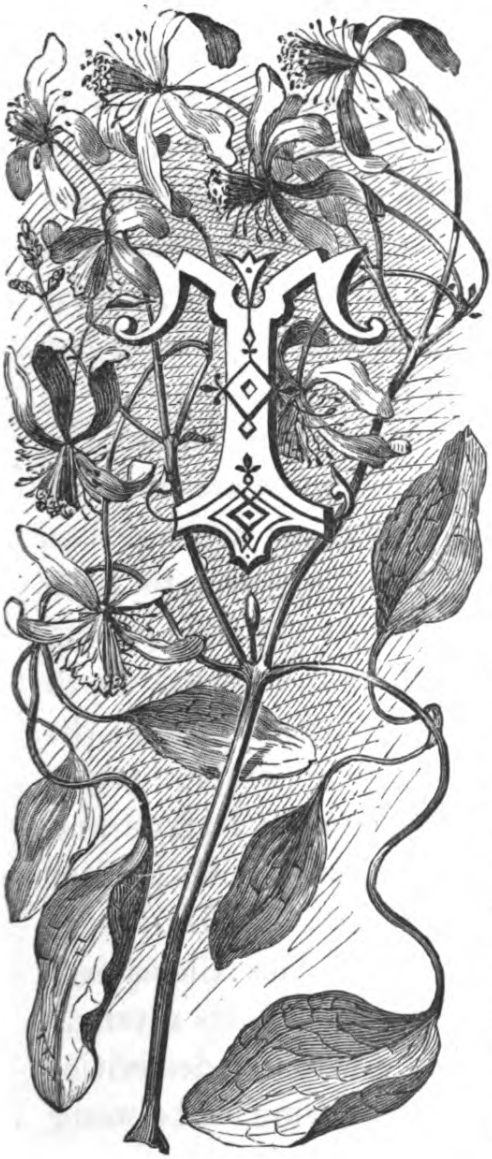
The rose is a thirsty plant, but it will not thrive on a soil that is sour with stagnant moisture; therefore good drainage is an aid to success. But a moist soil is to be preferred to a dry one, and during long-continued drought roses of all kinds should be abundantly supplied with water.

The principal enemy of garden roses is the *aphis*, or "green fly." If this is allowed to riot on the tender young leafage, the vigour of the plants is destroyed, and we may not only expect the flowers to be few and small, but we may really lose the plants entirely, for

roses are somewhat decisive in their behaviour, and die if they find life not agreeable to them. The best preventive and the best eradicator of the green fly is water, which should be applied to the roots to promote vigorous growth, and overhead in frequent copious showers to wash the fly out of existence. Tobacco-powder is a very cleanly and effectual fly-killer, as it needs only to be dusted on the young leaves and shoots, and may soon afterwards be washed off by means of the syringe.

Roses should be planted in the autumn and winter. If the work cannot be done until spring, the roots, when planted, should be mulched over with a good body of half-rotten stable-manure, and during the months of May and June following they should be aided with water overhead and at the roots. If dwarf roses can be purchased in pots, they may be planted in April and May.

SWEET CLEMATIS



THE SWEET CLEMATIS.

Clematis flammula.

THE "Traveller's Joy," or "Virgin's Bower," is the representative of the genus Clematis in our glorious English hedgerows, which, it may be proper to observe, are without parallel in all the world for distinctiveness and beauty, although it is common to hear and perhaps fair to admit they afford signs sometimes of careless farming. But no matter, the traveller's joy (*Clematis vitalba*) is a glorious "weed," more especially in the counties of Kent and Buckinghamshire. It is a lover of chalk and limestone, and where these rocks prevail we may look for it, and be happy if we find it wreathing fantastic garlands about thorn trees and blackberry bushes; and having made a wild foam along the roadsides with its white flowers, changing the scene by making any amount of soft, feathery, silky down for the field-mice to line their little

nests with. It is a bonny plant, the traveller's joy, and deserves its honourable and refreshing name; but as a garden plant it is valueless in comparison to the plant here figured, the *Clematis flammula* of Linnæus, which has a neater growth, and in the days of its exuberant flowering emits a fragrance so rich and powerful as to overpower all other of the autumnal odours of the garden. Both plants are common in Italy, and their tender shoots are gathered by the Italian peasant and boiled as a pot-herb—a service they are not called upon to render with us, because, in truth, our gardens supply us with better vegetables, albeit they have no Italian climate to help them.

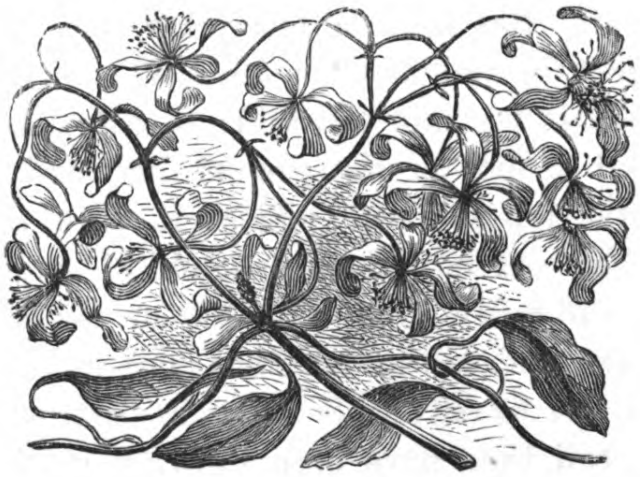
The sweet clematis is sufficiently hardy to endure the ordinary winters of Britain, but severe winters are likely to prove fatal to it, and it is always in danger more or less when planted in situations where it is exposed to keen winds or shade or damp. It is a sunshine plant, requiring an open but somewhat sheltered location, and a good depth of fertile, well-drained soil. It is often seen resting on the roof of a shed, covering a gable or gateway, or clothing a trellis with luxuriant masses of its cloudlike leafage and foamy flowers. But nowhere does it appear with greater advantage than when on a rockery, where, as Mr. Moore happily expresses it in his work on "The Clematis," "being allowed to assume a decumbent habit, its myriads of pure-white blossoms seem to pour down the declivities like masses of drifting snow, at the same time embalming the air with their fragrance."

As a slender climber of perennial duration it is adapted for many purposes in the garden, and the mention of one of them will tend, in a word, to enlarge the theme. It is often planted in beds with the new hybrid clematis, of

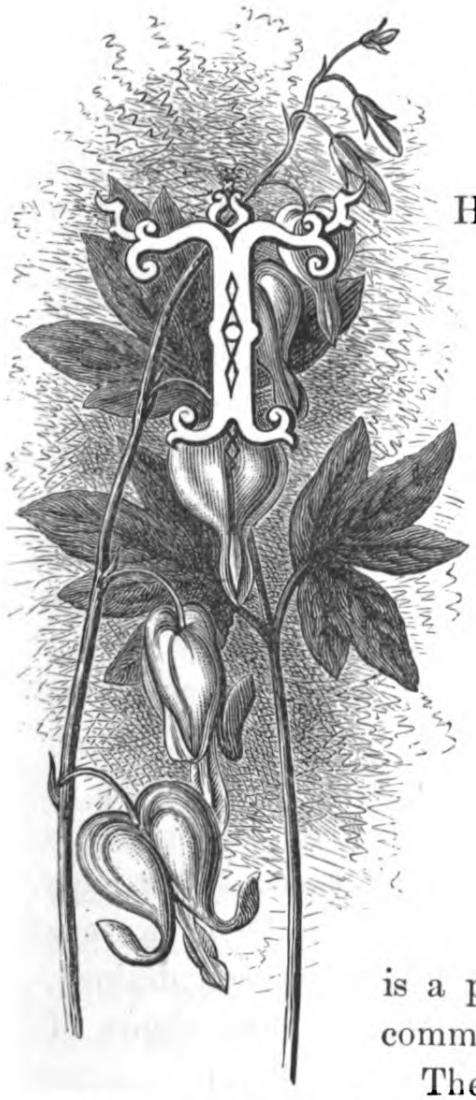
which the famous *Jackmanni* is the type. These grand, purple, lavender, blue, and white flowered varieties are amongst the grandest of so-called "bedding plants," as they are also of proper verandah and trellis climbers, but they are all destitute of odour, and the admixture with them of *C. flammula* adds the charm of sweetness to their gorgeous colours.

All these resplendent hybrids, in the production of which Mr. George Jackman, of Woking, led the way by his original course of procedure in cross-breeding—his *Jackmanni* being the first and, strange to say, the most useful of the series—all these are hardy and easily managed, and require in the English garden nothing more than a rich deep soil and some degree of shelter, with a fair share of the light of heaven all the year round. When first planted they may be said to go away at a bound, the growth in the second season often reaching thirty to forty feet. But after a few years they make a less vigorous growth, and become bare at the base of the stems. Then it becomes advisable to cut them down to within about a foot of the ground-line, and to remove a little of the top soil and replace it with rich mellow stuff from an old hotbed or a stack of stable-manure. The plants will again grow with vigour for two or three or more years, and will in due time once more show signs of failing. It is advisable then to destroy them and remove the soil they have been growing in, and make a new bed with fresh stuff and plant again. Owing to its prodigious flowering, *Jackmanni* is usually the first to "run out," but on deep and strong soil it will last ten to twenty years, if aided by occasional cutting back and refreshing the roots with a top-dressing.

A remarkable exemplification of the splendour of the hybrid clematis as bedding plants may be seen in the entrance to the vast nurseries of Mr. Richard Smith, St. John's, Worcester. Here, amidst the richest greenery of coniferous trees, grass lawns, and banks of ivy, we behold a great hemisphere of the richest violet-blue which may be likened to the mighty shield of a warlike wanderer from Olympus. It is a bed of Jackman's clematis trained over a frame of hoops, and throughout the summer it is literally solid with the resplendent flowers. To form such a bed in any garden would be quite an easy matter, for the chief elements are time and patience.



THE [illegible] FLOWER



THE LYRE FLOWER.

Dielytra spectabilis.

THIS extremely elegant plant bears a variety of names, and we may take our choice amongst them. It is a *Dielytra*, a *Diclytra*, a *Dicentra*, a *Fumaria*, a *Corydalis*. We prefer the first of these generic designations, because it was adopted on the occasion of the introduction of the plant to this country, and we are, therefore, accustomed to it, and object to any change. Moreover, the two styles on which the original name is founded are conspicuous features of the flower, and there is a pleasing euphony in dielytra that commends it to the ear.

The fame of this plant had gone out into many lands where the plant itself had never been seen. It was never seen alive by Linnæus, but he described it from dried specimens, and thus filled Europe with the hope of obtaining and keeping it. It was Robert Fortune's good fortune to meet with it in the north of China, and to

transmit it safely to the Horticultural Society of London, by whom it was received in 1846. Many a more costly acquisition may be referred to as testimony to the usefulness of this society, but this cheap, common, and very charming plant confers as much honour as any upon those who have enabled every cottager to obtain it to give light to his homely garden. How delicate is its leafage; how elegant the curved raceme bearing its two-winged or lyre-shaped pendent flowers of the most exquisite tint of rosy pink!

Although hardy and accommodating, this plant needs a little care to ensure a free growth and a plentiful bloom. It will grow in any soil, but is happier in a deep, mellow, sandy loam than in a stiff clay or starving limestone. Moreover, a certain amount of shelter is to be desired for it. On our heavy land in a northern suburb of London we have seen it many times cut down by frost in the month of May, and half blown away by strong wind in June. The finest plant we have ever seen was in a little front court of a small dairy in Highgate, where, for several summers in succession, there was a tuft of dielytra quite four feet high and as much through, the supreme elegance and richness of which we could not hope to describe. It was sheltered by high walls in a very close, snug spot, and no doubt the soil was well drained, warm, and fertile, for it is not often that fine plants of any kind spring out of the "riddlings of creation."

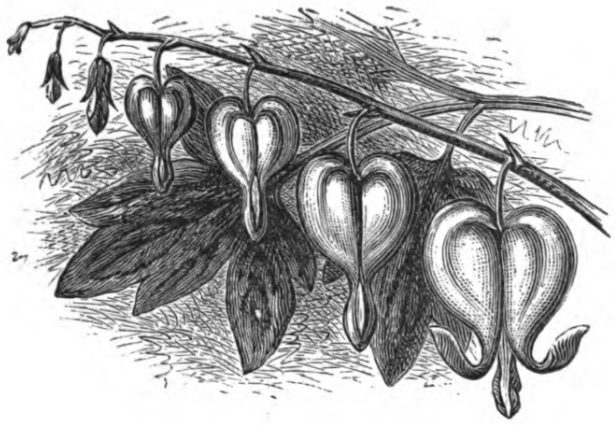
The amateur who has accommodation for a display of spring flowers under glass will find this plant invaluable to associate with hyacinths and early tulips and tazetta narcissi in the conservatory. As a pot-plant it is one of the easiest to manage, for it grows freely in the spring in

a sunny greenhouse, and provided it obtains water enough, is pretty sure to flower finely. We have never seen an aphis or any other insect enemy upon the plant, and we found it a very easy matter to produce great specimens in ten and twelve inch pots, although the most useful plants are those that make a bountiful head of bloom in pots of seven to nine inches diameter. The soil that suits fuchsias is the best for dielytras, and nearly the same treatment throughout will suit both those plants; consequently they may with advantage be grown together.

A nearly allied plant of great beauty is *Dielytra eximia*, which has fern-like leafage of a brilliant golden-green colour, and elegant racemes of purplish-red flowers. This also is worthy of pot-culture, and is invaluable for the front of a rockery. *Dielytra chrysantha* is a fine border-plant producing yellow flowers. A more humble but pleasing little plant is *Dielytra cucullaria*, which should be planted in a sheltered shady nook of the rockery; it forms a cushion-like tuft, which during summer is covered with racemes of small white flowers. In searching for any of these in a trade list, it will be well to bear in mind that they are often entered under the name Dicentra, and occasionally under Fumaria. They are all fume-worts, and allied to our gay garden flower, the yellow corydalis (*Fumaria lutea*), which delights to run over an old wall and adorn it with tufts of golden fringe.

The annual and biennial kinds of corydalis and fumaria are but little known, but they well deserve the attention of amateurs. The seeds may be sown in autumn or spring, and if the clumps are severely thinned, a good growth and an abundant bloom will be ensured. They are especially

useful on rockeries and rough banks, where, having been sown once, they will in many instances obtain a permanent position by means of self-sown seed, which are freely scattered if the plants are left alone. *Corydalis glauca* and *Fumaria capreoluta lutea* may be mentioned as good examples of this class of flowers. There are many first-class annuals that maintain themselves by self-sown seeds—as the mignonette, nemophila, eschscholtzia, and others.



ZINNIA

THE ZINNIA.

Zinnia elegans.

THERE are some eight or ten species of zinnia known to gardens, but only one of them has become a favourite, and that abundantly deserves the pre-eminence it has attained as one of the most splendid of our annual flowers. The figure carries us back to the original form of the flower as it was known fifty years ago, and it represents very faithfully the variety known as "coccinea," or the scarlet-rayed zinnia. The species was introduced from Mexico in 1796, and the scarlet-rayed variety came into our hands in 1829, and was thought much of for its brilliant colour and stately habit. During the fifty years that have elapsed since it appeared, the flower has been improved in all its characters, and we now possess a race of perfectly double zinnias, the flowers of which show no central disc, but are perfect rosettes of exquisite form, and of every shade of colour except blue. There is not a more striking instance of floral advancement, accomplished by

systematic selection, than is afforded by the zinnia, which is at once one of the largest, most various, and long-standing of our many good and cheap annual flowers.

The zinnia is named in honour of J. G. Zinn, Professor of Botany and Natural History at the University of Göttingen. He was born in 1826, and studied under Haller. One of the most important of his labours was a demonstration of the relation of vision to the action of the brain as well as to the structure of the eye, the particulars of which were given in his essay entitled "Descriptio Anatomica Oculi Humani." Another important service rendered to science was his catalogue of the plants in the Academical Garden of Göttingen. He died in April, 1758, at the early age of thirty-two.

The zinnia belongs to the great family of composite flowers, and is a native of Mexico. It is sometimes called the Mexican marigold—a designation in some degree justified in the case of the yellow varieties, but by no means to be encouraged, for in its essential character it is some distance removed from the genus *Tagetes*, and its normal colour is red or crimson; and hence the finest varieties are certainly not, even by a stretch of fancy, to be classed with marigolds.

How to grow the zinnia is perhaps the question of principal importance to the readers of this. It is a half-hardy annual, and must not be grown in a half-hearted manner. The seeds should be sown about the middle of April, but not earlier. They may be sown on a hotbed, and they will then germinate very quickly. It is, however, better practice to sow in a frame or under a hand-light, in light rich earth, so as to obtain the plants by a slower method, and with a corresponding surety of a fine bloom.

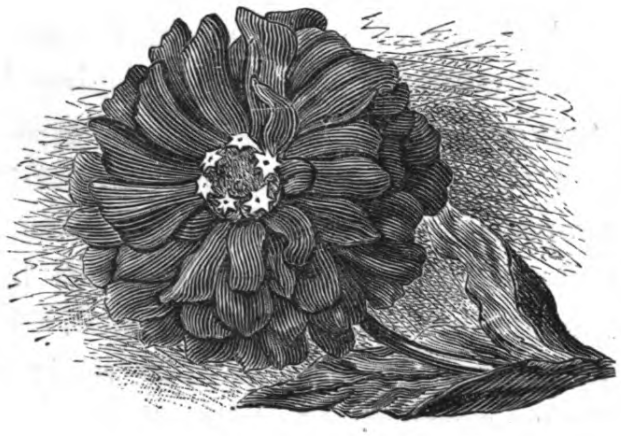
If the weather happens to be cold, cover the frame over at night with a mat, and give no air at all until the plants begin to appear, when air should be given cautiously, so as to prevent any shrivelling of the tender leaves by a dry east wind, and at the same time to ensure that healthy "stubbiness" that is so desirable in all young plants. As the plants advance they will require water and air increasingly, and nearly the same treatment as balsams demand should be given them. One point must be impressed on the mind of the amateur, and it is that, in common with the aster, the balsam, and other first-class annuals, the plants should never receive a check; for that will not only result in a deterioration of the bloom, but will also probably render the plant an easy prey to its myriad insect enemies.

The planting-out is an important matter. If the bed is made of old, sour, worn-out stuff, you will have no fine zinnias. The soil should be rather light and decidedly rich, and deeply stirred, and the position should be warm and sheltered. A garden in the northern suburbs of London, where the soil happens to be heavy and damp, was found to be unfavourable to zinnias, for the owner of that garden was resolved to have them as fine as he had often seen them in Paris, but had never seen them in England. And in the end this was accomplished, for a sloping bank facing the south was prepared for them, by deep digging, abundant manuring, and the incorporation with the stiff staple soil of a large proportion of road-grit and leaf-mould. Then, indeed, the zinnias displayed their beauties lavishly, and all the extra labour was amply compensated.

In any case, the bed should be made ready at the time the seed is sown, or earlier. As to the time for planting out, that must depend in part upon the weather, and in part

on the state of the plants. Choose mild quiet weather if possible, but above all things have the plants stubby and strong, and of a healthy green colour, as the result of the access to them of abundant light and air. If you must plant during dry sunny weather, you have but to shade and water them carefully, and take care that the plants do not suffer any serious check.

There are two so-called species of zinnia that occasionally obtain attention—namely, the *Z. grandiflora* and *Z. tenuifolia;* but as ornamental plants they are of no particular value, and it does not appear to the writer hereof that they are ugly enough to please the botanist—the reader being of course aware that, by a bit of harmless irony, the florists hand over to the botanists all the ugly and unmanageable plants that they have resolved to exclude from their gardens. But of the veritable *Zinnia elegans* there are innumerable varieties, single and double, and all are good; but the crimsons and scarlets, of all amongst our annual flowers, are the best, the yellows and purples come next in merit, and the whites must rank lowest of all.



PHLOX

THE PHLOX.

Phlox paniculata.

GARDEN phloxes are compounds of several species, and but little of their origin is distinctly traceable in their styles of growth and flowering. It will suffice to say that the so-called *Phlox decussata* and *P. pyramidalis*, to which most of the garden phloxes are referred, have no proper existence as species, and for the cultivation and classification of phloxes it is best to consider the habit (whether tall, dwarf, or intermediate), the time of flowering (whether early or late), and the colour and general style of the flowers, those that are large and circular and produced in dense masses being the best. The florist is chiefly concerned with their decorative qualities, and will have abundant reason to be gratified, provided he has first secured a good collection, for the varieties that have been produced by cross-breeding within the past ten or twelve years are

remarkable for perfection of form and exquisite colouring. In self-coloured purple, crimson, and salmon-tinted, and in oculate flowers that have white grounds and centres delicately stained with rose, carmine, and ruby, this class of plants is extremely rich. Of pure whites there are not many of good quality, and we have as yet no scarlet, no yellow, and no blue phloxes. We may, however, hope for scarlet and blue, because in some of the later varieties these colours are nearly realised, but we can hardly hope for yellow, since nowhere in the genus is there any strong leaning that way. As the case stands we have command of a sumptuous series of summer and autumn flowers, and it is but the simple truth to say that the florists' phloxes have pre-eminent claims on the attention of amateurs, because of their splendour, their hardiness, cheapness, and extreme usefulness, whether to exhibit, to cut from for decorations, or to enrich the garden with their noble panicles of many-coloured flowers.

As to the employment of phloxes in the garden, there is no method so effective as to dot them about amongst trees and shrubs, keeping them, of course, in the foreground, and ensuring them a sufficiency of air and light. As border flowers they are invaluable; but the least interesting way of growing them is in large compartments of phloxes only, as we see them in nurseries, and in the gardens of amateurs who give them particular attention for the purpose of exhibiting them. When well grouped on the exhibition table they are altogether delightful, but a great lot of phloxes in a lump, as it were, in the garden is like a mouthful of honey—too rich to be enjoyable, and likely to choke one.

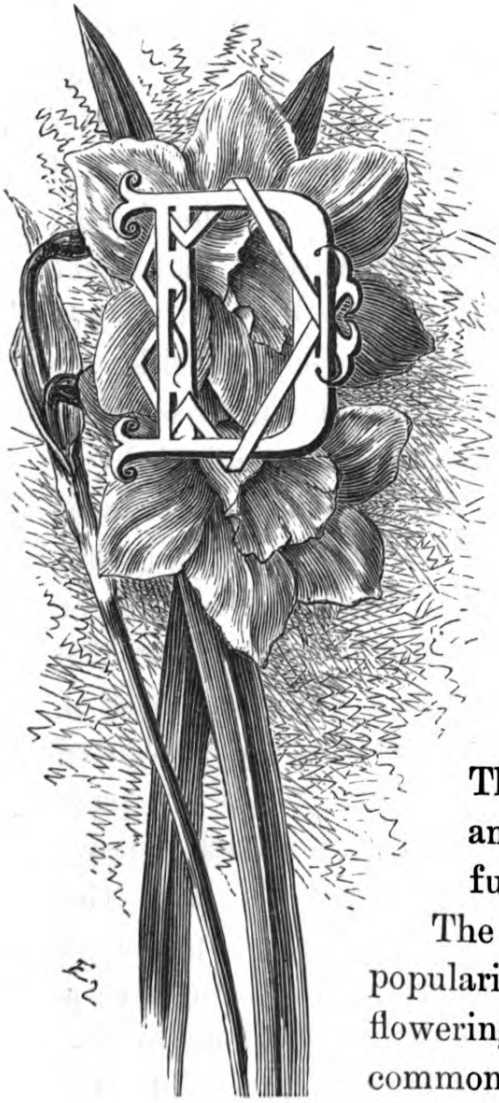
The cultivation of the phlox is a very simple affair.

The plants being left in the ground all the winter take no harm, and begin early in the spring to grow. When the new shoots are about two inches high, the roots may be lifted and divided, and planted again in freshly-dug and liberally-manured ground. In their new stations they may be allowed to stand two or three years, and should then be taken up, divided, and again planted. This we may call the rough-and-ready way, and it has for many years past been our way with a collection comprising over a hundred varieties. When grown for exhibition, a fresh stock should be planted every year in well-manured turfy loam, and if the summer should be hot and dry, the plants should have liberal help from the water-pot. In making plants for ordinary purposes it is quite sufficient to pull off rooted pieces, but when stock of some particular sorts is required in quantity, the old stools should be potted and gently forced, and the tops should be made into cuttings and struck in a gentle heat. By this mode of procedure one plant may be made the parent of hundreds, because propagating may be continued until far into the month of May, and the plants will flower the same season, though late perhaps. To grow fine phloxes the two important points are to renew the plants frequently and feed them well. To raise phloxes from seed is an equally simple affair. First secure your seed, as Mrs. Glasse might say; and if you begin with first-rate sorts you will not get much. Our plan has been to sow in pans as soon as the seed was fully ripe, and keep the young plants in a pit through the winter. But it will suit amateurs better to sow in spring, and we must advise keeping the seed-pans under glass until the plants are forward, when they may be planted in an open nursery-bed to flower. They should

not be planted in the borders until they have flowered and proved to be worth keeping.

The pretty *Phlox Drummondi* is so surprisingly beautiful that we cannot but regret it is seldom seen in English gardens. It is the more valuable now that the distinctive colours are easily secured by sowing well-saved seeds, so that as a bedding-plant it is not only one of the loveliest, but certainly one of the cheapest. If the seed is sown at any time between the middle of March and the middle of April, and started in a gentle heat, the usual nursing of a half-hardy annual will suffice to ensure strong plants to put out at the end of May, and this being accomplished, there is nothing more to be done, for the showers and sunshine will do the rest. In burning summers (of which, unfortunately, we have but few) this lovely plant holds its own as well as any border plant in cultivation. When verbenas and calceolarias have been roasted too brown, and even scarlet geraniums are beginning to cry for something to drink, Drummond's phlox appears to be unconcerned, and goes on blooming as if the hot weather had been ordered for it.

INCOMPARABLE DAFFODIL



THE INCOMPARABLE DAFFODIL.

Narcissus incomparabilis.

DAFFODILS are in the same good luck as lilies, if it be good luck for a flower to be in fashion. They are grown for the flower-markets on a scale that surprises those who are unaccustomed to the statistics of commercial horticulture, and they are also grown for the gardens more extensively than any other class of bulbs. There are good reasons for this, and we are bound to state them as fully as our space will allow.

The two prominent reasons for their popularity are their beauty and their early flowering. Those who know only the common double daffodil of the cottage garden can form no proper conception of the variety of character and the purity and splendour of the more distinctive species and varieties. The gigantic Telamonius, the chaste and queenly Empress, the dashing Emperor, and the great golden Maximus may be named as sumptuous forms of "Lent lilies," or trumpet daffodils,

a group of flowers having direct relation to the species known to botanists as *Narcissus pseudo-narcissus*. As the varieties of this group go out of bloom the varieties of Incomparabilis present their charming flowers. These always appear in a nodding attitude, and they are distinguished from the group of true Lent lilies by the shorter crown, which, as Parkinson truly describes it, is fashioned like the chalice in which is held the wine at the Lord's table. Here again we have abundant variety in respect of colour, and several double flowering kinds that are exquisitely beautiful. These incomparable daffodils, or "Nompareilles," as the old writers called them, are scarcely out of bloom ere the first flowers appear on the daffodil of the poets, the *Narcissus poeticus*, which we are to suppose sprang from the watery grave of the beautiful and vain boy whose fate is told in the story of Ovid. The trumpet daffodils may be described as glorious, the incomparables as beautiful, and the poets as delicate. Here in place of a trumpet or a cup we have a cymbal or ring in the centre of the flower. All the varieties of this group are pure white, and the central ring is red, or orange, or rich yellow. Lastly, to wind up the daffodil season, we have the polyanthus group, or *Narcissus tazetta*, which are produced in clusters, or umbels, each flower having in the centre a small neat cup, which is often of a different colour to the perianth, or leaves that form the circumference of the flower. These are much valued for pot-culture and forcing.

The Corbularia group must have a paragraph to itself. This group comprehends the species commonly described as *Narcissus corbularia* (or *bulbocodium*), and the several varieties thereof, including one with white flowers, and

several that vary in their shades of yellow and have very distinctive outlines. The flowers of these have the tube, or trumpet, so much developed, and the outer segments so much contracted, that "corbularia," which means "little basket," is a very appropriate collective name for them. They are extremely beautiful, and are peculiarly adapted for pot-culture, for the adornment of the table and the conservatory with their charming flowers, which in some cases are of the richest gold-yellow, in others lemon-yellow and creamy white. When grown in a common border they are liable to destruction by spring frosts, owing to their habit of growing early in the year; but when grown in pots in sandy soil, they give no trouble, flower delightfully, and multiply in a most satisfactory manner.

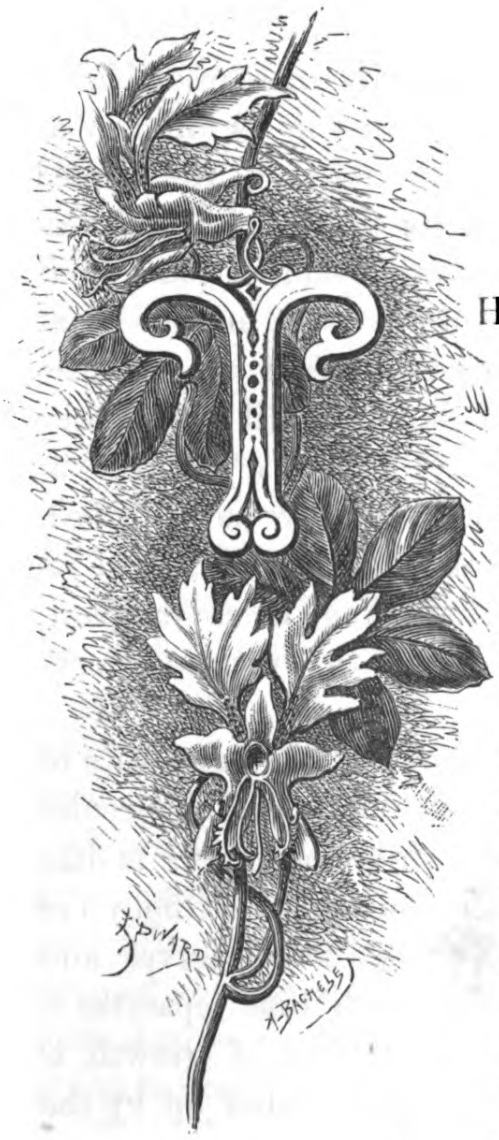
These five prominent groups represent only the most popular and generally useful members of the great family of daffodils. There are twenty or more species described by the botanists, and the collectors who give special attention to them know of hundreds of varieties. It is a fact of immense interest that in the catalogue of bulbs published by Messrs. Barr and Sugden for the year 1878, there are exactly 150 varieties of daffodils described, and offered at prices ranging from five shillings to a penny per bulb. In the "Paradisus" of John Parkinson, published in 1656, there are no fewer than ninety-four plants described as of the narciss family; some of these might with botanical propriety be removed into other classes; nevertheless the enumeration proves that daffodils were diligently collected and seriously studied in the early days of gardening, for very many of Parkinson's varieties had come down to him as old garden favourites.

The great trumpet daffodils are such as Shakespeare had in mind when he spoke of

> "Daffodils that come before the swallow dares,
> And take the winds of March with beauty."

The earliness and the hardiness of these brave flowers render them beyond all ordinary measure valuable. It is but rarely the frost harms them, even when they flower in the early days of March, and, indeed, the only enemy to be feared is strong sunshine, which of course does not often occur in the season of daffodils. Add to their hardiness that they are not at all particular as to soil, and that when once planted they may be left undisturbed for years, and what a heap of arguments have we in favour of their cultivation, and in explanation of their ever-increasing popularity! We will crown the great heap with a fact of some importance. The daffodils thrive in damp places that are partially shaded by trees; hence they are available to convert into a Tom Tiddler's ground many a spot whereon but few choice flowers would find a happy home.

CANARY FLOWER



THE CANARY FLOWER.

Tropæolum canariense.

THIS remarkably pretty creeper is known in gardens as *Tropæolum canariense*, but its recognised botanical name is *T. aduncum*, or, in the older books, *T. peregrinum*. The first and commonest name suggests that it is a native of the Canary Islands, and it may indeed have come to us from thence, but its home as a wilding is New Granada. The yellow colour may justify the name, for not only is the canary-bird yellow, but canary wine is of a golden hue; and as the Canary Islands were the "Fortunate Isles" of the ancients, we may suppose them to be—as Dick Whittington expected to find London streets—paved with gold. Strange to say, if the case is considered philologically, a Canary Isle is an Isle of Dogs, for Juba so named one of the group because of the large canine animals he found there, as he named another of them Nivaria, the Snow Island,

because it is crowned with the peak that is now called Teneriffe, which at times is capped with snow. It is proper to remark, however, that not only is the flower before us of a canary colour, but it bears some resemblance to a bird, and in this respect is as curious in its mimicry as any of the orchids. Its second name refers to the hooked termination of the nectary; and its third name indicates that it is a wanderer, a happy vagabond, a plant that loves to climb the wall and tumble over in the next garden, or, if it gets hold of the trellis next the summer-house, will stretch and pull and clamber until it can peep in at the little window and say "How d'ye do?" at the very moment when you don't want to be disturbed. But this Peregrinum must be allowed to indulge in its peregrinations, for the joy of the thing is its rampant, rambling, and ill-regulated ambition to overstep everything and everybody.

We miss here one of the prominent characteristics of the tropæolums, the leaves of which are mostly circular and peltate and like a buckler, while the flower is like a helmet, and thus together they constitute a trophy, or *tropæum*. The canary creeper has five-lobed leaves and bird-like flowers, and a style of growth that separates it from the typical tropæolums. Its rapidity of growth is remarkable, as also is its tendency to be eaten up by the little mite known as the "red spider," when hot, dry weather has prevailed a few weeks. Like the general run of vagabonds, it is not particular about its life-conditions, and having no stamina, it soon breaks down when things go wrong.

The uses of such plants are many. The peculiar light green leafage, dotted with yellow flowers, renders this very

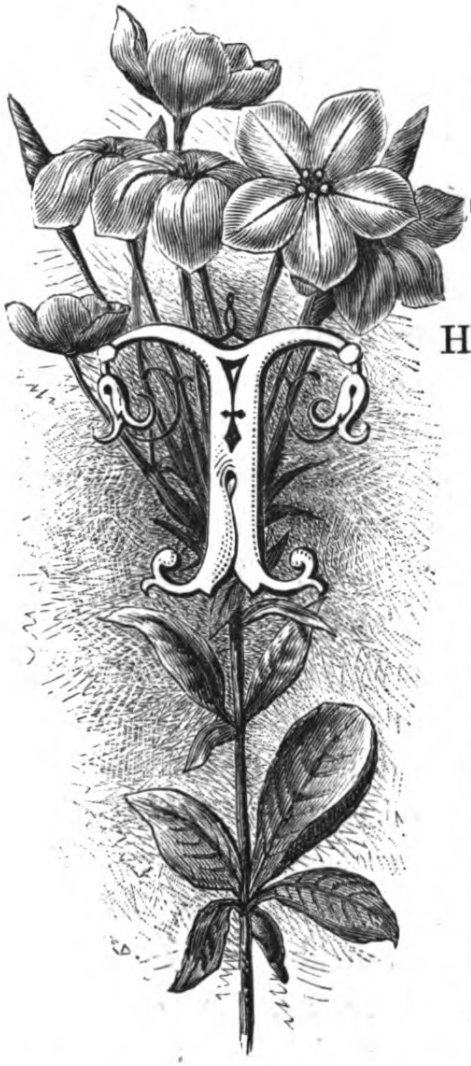
distinct amongst the fast-growing trellis and bower plants that love to climb high and toss gay garlands in the air. The canary creeper may be used with effect to clothe low-growing trees of spare habit, as it will soon run up into the midst of them and make them gay with golden streamers. Care should be taken never to carry this sort of gardening too far, because a valueless creeper, that lives but a few months at the most, should not be allowed to injure a tree that has perhaps a lease of a century to honour by profitable occupation of the ground.

The plant before us is a half-hardy annual, and is therefore grown from seeds that are, in the first instance, protected from the weather, and afterwards planted out. The best way to raise all such plants is to sow the seed in the spring on a gentle hotbed in light, rich, and rather fine soil, and when the plants are large enough to handle, to prick them out two or three inches apart in boxes filled with similar mellow soil, or to pot them separately in small pots. In any case, when thus transferred from the seed-pan they should be nursed under glass for a time in a greenhouse or frame, and be gradually hardened by exposure to the air, to prepare them for planting out. The time of sowing and the details of management must, in some degree, be determined by the nature of the plant. It is not too early to sow seed in February in some cases, but in others March and April are early enough. In the case of the canary creeper, it is folly to sow before April, because the plant grows rapidly when put out, and it is troublesome if it grows to some size previously. For filling the seed-pans and the boxes in this preliminary culture, a mixture of mellow loam, old hotbed dung rotted to powder, equal parts, with a half part of silver sand, will answer perfectly.

It should be free from worms, and moist enough without being wet—in fact, a good test of a potting compost is that it may be handled without soiling the fingers. Where there is no accommodation for raising half-hardy annuals under glass, the seed may be sown where the plants are required in the open ground, but this should not be done until the end of April.

In the "Loves of the Plants," by the elder Darwin, the tropæolum is the subject of a fanciful description, in which the poet contrives to inform us that the flower has eight stamens and one pistil, and that it occasionally emits flashes of phosphoric light :—

"Ere the bright star which tends the morning sky
Hangs o'er the flushing east his diamond eye,
The chaste Tropæo leaves her secret bed;
A saint-like glory trembles round her head;
Eight watchful swains along the lawns of night
With amorous steps pursue the virgin light;
O'er her fair form the electric lustre plays,
And cold she moves amid the lambent blaze.
So shines the glow-fly when the sun retires,
And gems the night air with phosphoric fires;
Thus o'er the marsh aerial lights betray
And charm the unwary wanderer from his way."



THE CAPE LEADWORT.

Plumbago capensis.

THE names of plants present for our consideration innumerable strange questions, mostly of a mirth-provoking kind, but sometimes sad enough. The name that now confronts us possesses but little interest of any kind; but the reader may very properly ask why a plant should be called a plumbago? It is, perhaps, impossible to explain the reason of the name, but it seems to have originated from the use of one of the species as a remedy in some disease of the eye. Then the decoction of the plant was probably considered the equivalent of a solution of lead, or the name of the disease may have carried with it an allusion to the metal. The blue colour of the flowers is not far unlike that of pure lead that is as yet free from corrosion and dirt. But, after all, plumbago is not lead; it is "graphite," and graphite is a natural charcoal, or silicate of carbon, without a shadow of lead in its substance. It derived its name from its likeness to lead, or "plumbum;"

and it is commonly believed to this hour that "black-lead," or graphite, is identical with the metal lead, although they differ as much as chalk and cheese.

The Cape leadwort is a half-hardy climbing shrub, with scaly leaves, and diffuse panicles of phlox-like flowers of a soft azure-blue colour. It may be planted out during the summer, and will grow and flower freely; but to be fully appreciated it should be grown in the greenhouse, and have careful training to a wall, pillar, or trellis, when it will soon declare itself one of the most elegant plants of its class in cultivation. As for the cultivation, it is of the simplest possible kind, for the plant will grow in any ordinary compost in which there is a fair proportion of peat or leaf-soil, with sharp, gritty sand. To multiply the stock is an easy matter, for cuttings of any age will strike at any time with the aid of a little heat, although it is better to take cuttings of young shoots in the later part of the summer, and strike them under a bell-glass.

There are about a dozen species of plumbago known in gardens. The genus is related to statice, armeria, and acantholimon, constituting a group called the *Plumbaginaceæ*, all of them herbs or undershrubs, and most of them having a liking for the sea-shore, as, for example, *Armeria vulgaris*, the common thrift, which you may find in plenty on the rocky coasts of those northern counties that look out on the stormy North Sea.

The best-known plumbagos are *P. capensis* (here figured), and the two hardy species *P. Europæa*, native of Southern Europe, and Lady Larpent's (*P. Larpentæ*), native of China. The last-named is sometimes described as *Valoradia plumbaginoides*, on the authority of Hooker, who removes it from the genus plumbago because of some

trifling peculiarities of structure. These two hardy species are well adapted to plant on the face of a rockery, and they are equally adapted to clothe low trellises with their neat leafage and beautiful blue flowers.

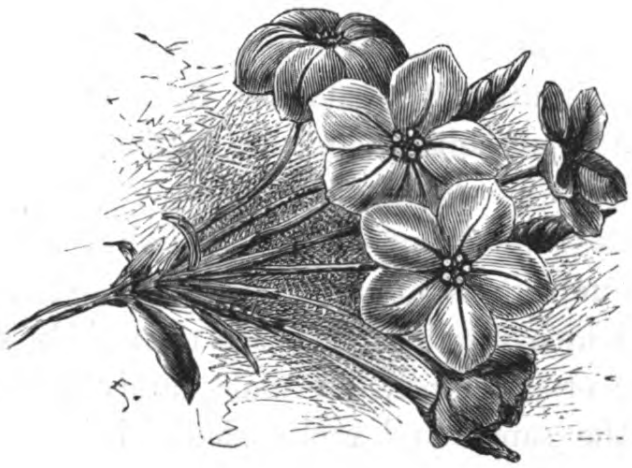
The tropical species comprise the Mexican (*P. Mexicana*), with white flowers; the diamond-leaved (*P. rhombifolia*), with blue flowers; the rosy (*P. rosea*), with red flowers; the Ceylon (*P. Zeylanica*), with white flowers; and the climbing (*P. scandens*), with white flowers. The last-named is the best of the series. These, in common with *P. capensis*, may be had in flower all the winter by a little management, and in that case will often prove serviceable to supply cut flowers for decorative purposes.

The plumbagos are bitter and acrid, and perhaps poisonous. The root of the European species is sometimes chewed as a cure for toothache, and a preparation of it with olive oil is in high repute in the south of Europe as a cure for ulcers and the itch. All the species probably, and certainly several of them, have striking vesicatory properties, so that when rubbed upon the skin they produce inflammation, and may therefore supplant cantharides and other irritants. The statices have nearly the same properties, but are bitter, and are astringent rather than acrid.

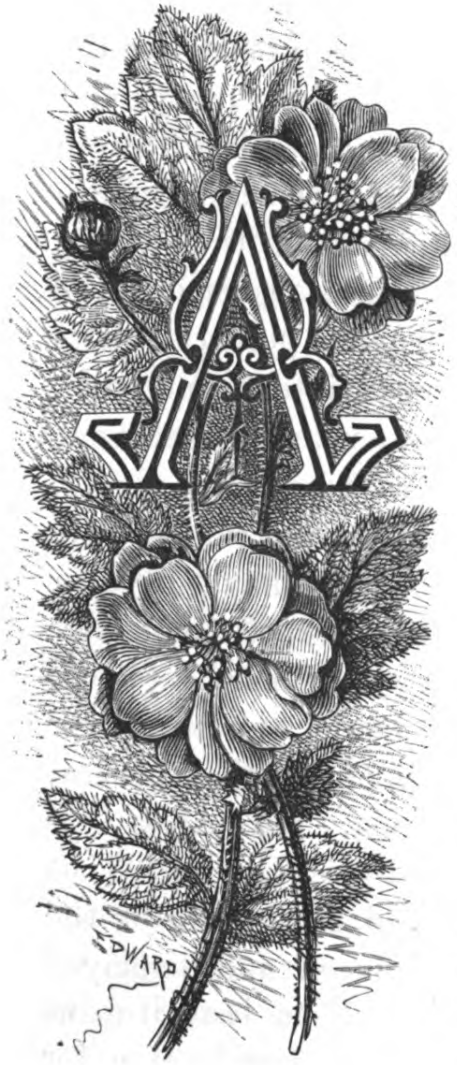
The most interesting of the British plants that are allied to plumbago is doubtless the sea lavender (*Statice limonium*), which may be met with on muddy sea-shores; the thrifts, or armerias, are but rarely seen in such situations, the sandy and rocky shores being their usual habitat. The flowers of the sea lavender are purplish, and are produced in corymbose panicles. There is a white variety, and there is also a lilac-coloured variety which is

often catalogued as a separate species under the name *Statice angustifolia.* The great sea lavender (*Statice latifolia*), native of Russia, is one of the finest hardy border plants in cultivation.

"Ye gentle shades between the trees and flowers,
With you, ye laughing race, I'll deck my bowers.
Oh that my theme would grant the fond delay,
Nor with too urgent haste forbid my stay!
With what delight my hands each spray should guide,
And teach your curling tendrils where to glide.
In woven bowers and roofs your shoots should grow,
And 'neath your network arch the riv'let flow;
Around yon elm your wedded arms should wind,
Emblem of strength, with gentlest beauty joined.
You then to whom their lowly pomp is given,
Display with art these charming gifts of Heaven;
Let every season have their brilliant bloom,
Their laughing colours, and their rich perfume;
Let each in turn the well-wrought chaplet wear,
Thus ne'er shall fade the garland of the year;
But new-born joys shall every season bring,
Each month a bower, and every bower a spring."



AVENS



AVENS.

Geum coccineum.

AMONGST the many pleasures a townsman may look for when rambling through a country village, the discovery of exquisitely beautiful flowers in the gardens of humble cottagers may be reckoned as of some account. You have, perhaps, been revelling for years amidst bedding plants and stately trees, and other fashionable and genteel items of a proper garden. But you have for a season quitted these rural scenes to find rest in things rustic, and in an idle mood you lean upon a fence and look over. Stars and planets! What a blaze of flowers of sorts unseen till now has this humble horticulturist accumulated! Here are masses of colour that compel one's lip to curl with contempt for all ordinary bedding, and combinations and features that to the unaccustomed eye, well rested from the wear and tear of town, appear to over-pass the reach of art,

and often, of course, are the result of some happy accident. But there are cultivated amateurs who appreciate such things and form collections, and find therein delights that are certainly different and doubtless higher in tone than a mere following the fashion would afford, unless, indeed, it became the fashion to render the garden truly representative of the infinite variety and beauty of the vegetation of the world. The subject before us illustrates the case. You may find the scarlet avens and perhaps two or three sorts of potentillas in the country garden, and you may, again, find them in the garden of the eclectic collector; but in the garden "of the period," where carpet colouring, and evergreens clipped into round balls, are prominent features, such things are utterly unknown.

The earth is plentifully furnished with beautiful plants, and it is a matter both for surprise and thankfulness that an immense proportion of the happy throng may be grown to perfection in our gardens. The species of geum that have been introduced to this country as hardy plants, adapted for the open rockery and border, number over thirty, and they are natives variously of North America, Chili, Kamtschatka, Russia, Volhinia, the Alps, the Pyrenees, the Carpathians, and the hills of Greece. That very few of them are now to be found is no fault of the plants, for if they were all re-introduced and displayed with judgment, they would be found as beautiful as ever, and as fully as ever entitled to reproach men for their perversity in neglecting the simplest and cheapest and most lasting and ever-changing of all garden pleasures.

The avens is a rosaceous plant, and the picture might almost pass as representing a rose from the hedgerow. We have two wildings of the tribe—the common avens

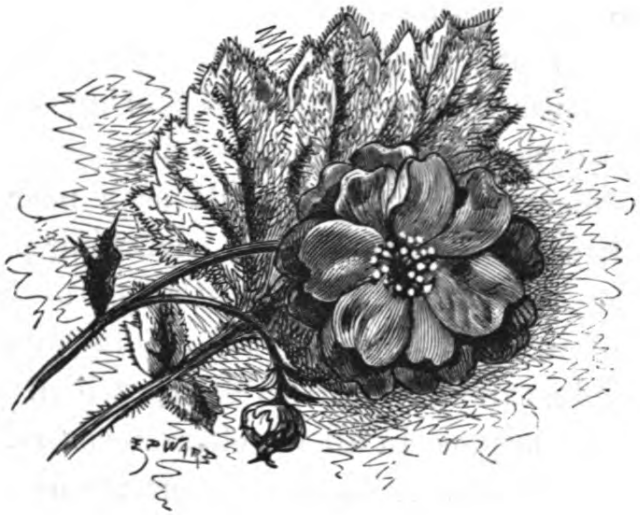
(*Geum urbanum*), producing yellow flowers like those of a potentilla, and the water avens (*G. rivale*), which has nodding flowers, curiously combining purple and orange in their colours. The scarlet avens is a native of Chili, and there are two or three varieties of it in cultivation. We adopt Lindley's name for our heading, but the plant is also known as *G. chiloense*.

Where space can be found for a few other species, we can recommend the yellow mountain avens (*G. montanum*), which produces yellow flowers; the creeping avens (*G. reptans*), also producing yellow flowers; and the three-flowered avens (*G. triflorum*), which differs from the others in its diminutive growth. To these may be added the two British species. The ordinary soil of any good border or well-made rockery will suit them all perfectly. The best of the bunch are *G. coccineum* and *G. montanum*, as may be learned sometimes at a horticultural exhibition. It happens occasionally that prudent promoters of flower shows offer prizes for collections of hardy plants; and these two beautiful geums often appear in such collections, their fresh distinct beauty rendering them "show plants," in the proper sense of the term.

Having mentioned the potentilla as a near relation to the avens, it is but just to another charming plant, as also to the reader who can love such things, to mention the white mountain avens (*Dryas octopetala*), an extremely beautiful and scarce British wilding, which betrays its geographical relations in all its characteristics. It is the way of mountain plants to have short stems and a close tufted leafage, and flowers very large in proportion to the open parts. This lovely dryas conforms to the rule. Its evergreen leaves are deeply cut, and on the under side

clothed with woolly down. The large flowers are like white anemones, the purity of the petals and the bright yellow stamens in the centre assisting in completing the resemblance to *Anemone nemorosa*. The white mountain avens needs a moist peaty or sandy soil, and must be protected from slugs and snails. If planted in common soil it is not likely to live long.

Geum coccineum is figured by Sweet in the "British Flower Garden" (p. 292) as *Geum quellyon*, and he there refers to another plant, a native of Greece, which he remarks "is doubtless a species of sieversia." The present species, according to Feuillee, is a native of the sides of mountains in Chili, and has not been introduced there from Greece, as has been supposed. It makes a valuable addition to the flower borders, thriving well in the common garden soil.



DAY LILY

THE DAY-LILY.

Hemerocallis flava.

THE day-lily is not in high repute. Nevertheless there are not many plants that can surpass it in usefulness or beauty. *Imprimis*, it will grow in any soil, and if the villainous spade chops its unseen roots, it will come through the trial and sprout up again in the way of a mutilated horse-radish. It will thrive under the deep shade of plantations where the ground is as dry as dust all the summer, and pretty well exhausted of all goodness by the hungry roots of the trees. When in flower a large clump presents a beautiful appearance, and when not in flower the fresh cheerful green and the elegant outlines of the sword or sickle-shaped leaves are pleasing features. But there remains to be told a fact "not generally known," and it is that this beautiful lily may be turned to excellent account to furnish fodder to cattle, and more especially to cows in milk.

As garden plants the day-lilies deserve much more

attention than they have as yet obtained. Their flowers are showy and fragrant, and there are in cultivation about a dozen species and varieties, all highly ornamental. The commonest of the series are the yellow (*Hemerocallis flava*) and the copper (*H. fulva*). Amongst the many good things secured to us by the late Mr. Robert Fortune —most fortunate of botanical travellers—was the Japan species (*H. kwanso*), of which there are two or three varieties. One of these, called *Kwanso flore pleno*, has green leaves and double yellow flowers; the other, called *Kwanso flore pleno foliis variegatis* (which, if not long enough, may be lengthened by prefixing the generic name *Hemerocallis*), has splendidly variegated leaves and double yellow flowers, and atones for the length of its name by the fact that it is the finest hardy variegated-leaved plant in cultivation! There are many costly stove plants grown for the beauty of their leaves that really come short of the splendour of this hardy plant, which may be purchased for a couple of shillings and grown in the commonest soil, and will, with very little care, make a superb ornament for the conservatory or for the choicest rockery or border.

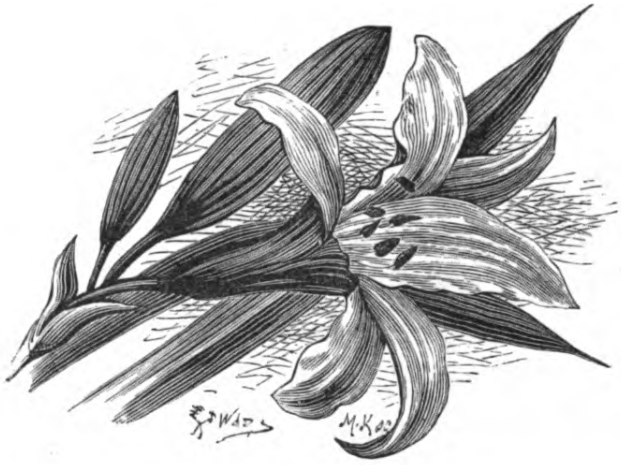
To do justice to the three day-lilies that have been named thus far, *H. flava, fulva,* and *kwanso,* will prove an agreeable task for one who is earnest in gardening. But there are a dozen more worth having, such as Dumortier's (*H. Dumortieri*), with narrow leaves and reddish-brown flowers; the grass-leaved (*H. graminea*), also with narrow leaves, but with yellow flowers, which are scarcely so handsome as those of *H. flava.* The two-rowed (*H. disticha*) has the leaves set in two rows very distinctly; the flowers are yellow without and reddish within. Nor

need we stop here, for there is a pink-flowered species called *H. Japonica*, less robust in growth than the others, but well adapted for a place on a rockery, where its form will contrast well with the tufted plants. And yet one more, which brings us back to the subject of the plate. The common yellow day-lily may be obtained in a variegated form, the variety being catalogued as "striatis." It is not equal to the variegated kwanso, but it is a fine plant, and worthy of pot-culture to decorate the conservatory while its elegant striped leaves have the freshness of new growth upon them.

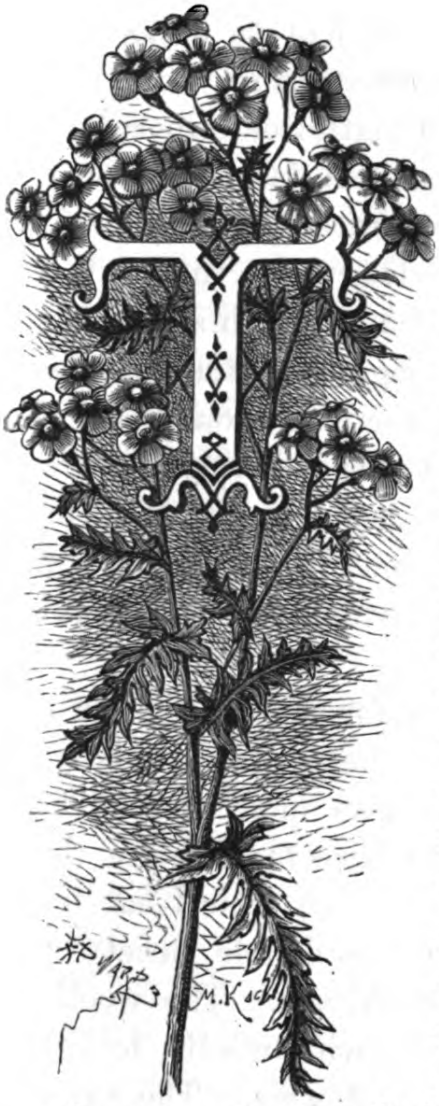
Shady borders give much trouble, and whatever may be grown in them with some degree of certainty must be made much of. The day-lily is one of the very best of plants for such places, provided it can obtain a fair share of the rainfall of the winter. Deciduous trees permit the herbs at their feet to live by affording access to them of the rain that falls between November and April; but evergreens are less merciful and kill everything beneath their shade. The veratrums are noble associates with day-lilies in shady borders, and two very humble but elegant weeds, the Enchanter's nightshade and the dwarf elder, may be allowed to run amongst them.

The starved appearance of shady borders is often the consequence of starving treatment. In a general planting or renovating, a really radical system should be adopted. All ill-looking shrubs that are in a dying state should be rooted out and cast on the rubbish-heap. The ground should be well dug and liberally manured, care being taken to spare the large roots of the trees from injury. If a few "wigs" of the smaller roots are cut out it will not much matter. The ground being thus prepared, strong well-

rooted plants of suitable kinds should be planted, the most useful shrubs for the purpose being common Privet evergreen and deciduous Euonymus, Yew Box, Holly, Ruscus, Skimmia, and all the kinds of Ivies, the green-leaved ivy, known as "Hibberd's Emerald" being one of the best. The large-leaved Periwinkle and the sweet Woodruff may be mixed in the front line or put in clumps, with sheets of white violets between.



ACHILLEA



THE ROSY YARROW.

Achillea asplenifolia.

TO liken a flower to a gem or jewel of any kind is probably unfair, but the temptation is often too great to be resisted. The forget-me-not suggests the turquoise, the pimpernel may be likened to a coral, and the lovely flower before us is like a ruby, if it is like anything save its own sweet self. When a tuft of this yarrow is in full bloom there will not be found in the garden, however rich it may be, a flower of any kind that can surpass it in beauty, although many make more show and are not less worthy of our admiration. It is well to bear in mind that this is a distinct species of yarrow, because it is commonly classed as a variety of the British *Achillea millefolium*, which in all its states and stages is unworthy of attention as a decorative garden plant; whereas the rosy-flowered or asplenium-leaved yarrow is at once a different plant, and far more beautiful both in leaf and flower.

As regards cultivation there is not much to be said. Any soil will suit this plant, but it needs a sunny aspect, or it becomes drawn and wiry, and fails to hold up its head. To increase the stock, it is sufficient to divide the roots when growth commences in the spring, but they may be divided at any time if it is a matter of importance to secure a quantity for any purpose. A large clump or bed has a rich and interesting appearance when in flower, and continues so for a considerable length of time. We have used it advantageously to plant amongst lilies, which really need some light spreading herbage to partially clothe and conceal their stems, and in fact the bare ground ought never to be visible where lilies grow, for it is their nature to rise out of grass and other light herbage, the roots of which are also indirectly advantageous to the lilies by quickly taking up any excess of moisture resulting from heavy summer rains.

The common yarrow we dismiss for the present as a mere weed, but we shall restore it to the garden presently, for a particular purpose. The yarrows most worthy of cultivation, in addition to the one here figured, are the following :—The sneezewort (*A. ptarmica*), a neat-habited British plant, with white flowers; the double variety is a serviceable thing to supply cut flowers. The woolly yarrow (*A. tomentosa*), a neat plant, with woolly leaves, and successive corymbs of gay yellow flowers. The great yarrow (*A. filipendula*), with rough pinnate leafage, and large heads of bright yellow flowers that rise to a height of four or five feet in a good soil and sunny situation. The silvery yarrow (*A. clavennæ*), a very neat plant, with white leaves and pretty heads of white flowers. This is a mountain plant, and requires a dry position on a rockery, in

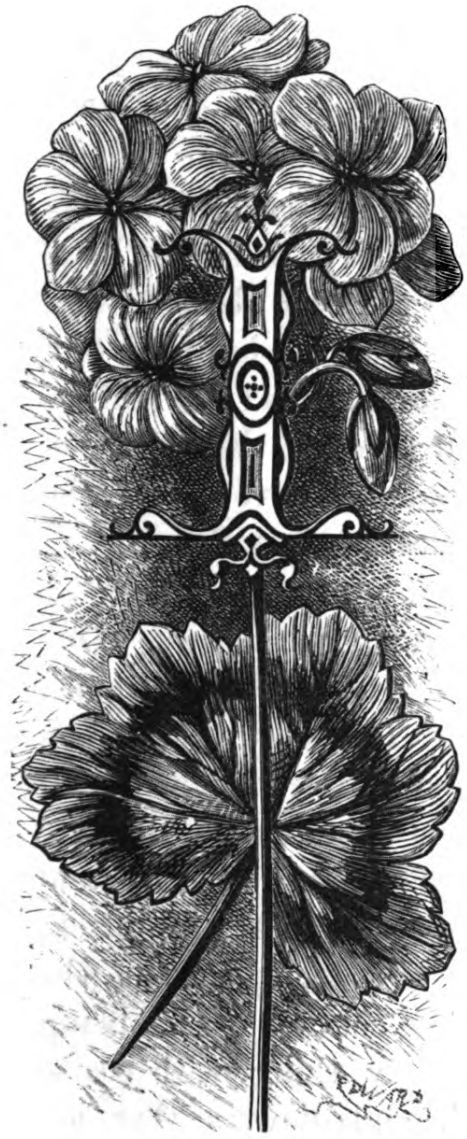
a peaty or sandy soil, when it soon becomes a striking and interesting object. There are a few others of less importance that the hungry collector will soon discover, but they will not suit many of our readers.

It is time now to restore the common yarrow (*Achillea millefolium*) to a place in the garden. It has no claim to admiration in respect of beauty, although as a weed it is pretty enough. But it is of great service to clothe with fresh green herbage any hot, dry bank on which grass becomes unsightly in the height of summer. It is, in fact, a good lawn plant, bearing the scythe well, and enduring drought better than any other lawn plant, save, perhaps, the Dutch clover, which keeps a show of green herbage when the grasses are burnt up and as dry as stubble. The common camomile (*Anthemis nobilis*) has a similar power of endurance, and might be sown with yarrow and clover on dry chalky or gravelly soils where it has been found difficult to establish the true grasses as lawn plants. One other step may be taken to ensure a smooth and fresh greensward in the event of a droughty summer, and that is to set the mowing machine so that it shall not shave so close as to cut into the roots of the lawn plants, for many a good turf has been ruined by frequent close cutting, as though mowing and destroying were to be one and the same thing.

The yarrows are bitter plants, more or less aromatic, and for the most part innocuous. Having found a place for *Achillea millefolium* in the garden, we must now direct attention to the fact that it should have a place in the permanent pasture, as affording to cattle a needful astringent and stomachic. In some parts of Sweden it is employed in the making of beer, being at once a stimulant

and an aromatic tonic, and, like the tormentil in certain parts of North Britain, a fair substitute for the hop. The sneezewort (*A. ptarmica*) has somewhat the flavour of tarragon, and may be used in place of it in a salad. When dried and reduced to powder it is a cheap substitute for snuff; hence its familiar name. Finally, several species of achillea, and possibly all, are in some degree applicable as substitutes for tea. We have in our wanderings tasted many curious kinds of tea, and can speak of two only out of the number as in any way endurable, and even at that undesirable. One was a brewing from a handful of new hay, which a sweet old dame declared delicious to drink, and a certain cure for all possible diseases. The other was a decoction of green sneezewort, which was also declared to be excellent in some way or other. It was endurable to drink, and soon suggested that a judicious use of it might serve one instead of a sea voyage, to promote one of the more famous and supposedly-beneficial consequences of a life on the ocean wave.

SCARLET GERANIUM



SCARLET GERANIUM.

Pelargonium zonale.

IT is to be hoped no savage botanist will behold this page, for it is a great sin against botanical propriety to label the flower before us "geranium," for a true geranium is something very different. All the showy plants of this class that are so highly prized in gardens are pelargoniums, or stork's-bills, the seed-vessels just before they begin to separate bearing some resemblance to the bill of a stork. The pelargoniums are, for the most part, natives of the Cape of Good Hope. They are shrubby in habit, but never attain to the dignity of trees, and they are distinguished by the irregularity of their flowers, the petals of which are never, or but rarely, of equal size throughout. The geraniums are mostly herbs of Europe, and a certain few of their number are conspicuous amongst the wild flowers of Britain, the merry little herb Robert of the mountains (*Geranium*

Robertianum) and the sedate but lovely blue geranium of the valleys (*Geranium pratense*) being notable examples familiar to every wayside botanist. The generic name implies that the cluster of seeds when about to separate represents a crane's bill, and a common name of the herb Robert is "Robert-leaved crane's-bill." There is another group classed under the generic term Erodium, the heron's bill, and the best-known plant of this genus is the hemlock-leaved heron's-bill (*Erodium cicutarium*), a sweet little thing bearing a near resemblance to the herb Robert.

It must be understood, therefore, that our ordinary talk about geraniums refers to pelargoniums, and it will be waste of time to fight a battle in defence of the misuse of the term geranium, because the botanists have settled the matter, and there is no court of appeal against them.

The pelargoniums of our gardens are seen by the most casual observer to be divisible into two great classes. One class may be considered to have for a centre the (perhaps) apocryphal *Pelargonium speciosum*. This group has green leaves that are much wrinkled and deeply notched, and large flowers that are sometimes spotted on all the five petals, but usually the two top petals alone are spotted, and these often are heavily and richly blotched with black, maroon, or crimson. The other class comprehends the plants familiarly called "zonals," the central species being *Pelargonium zonale*, a somewhat ugly thing, with coarse leaves that are distinctly zoned, and flowers that are distinguished by the narrowness of the petals, so that they are properly, though perhaps disrespectfully, spoken of as "windmills."

This possible parent of the zonale group was introduced from the Cape in the year 1710, but many years elapsed

ere the florists took it in hand for the purpose of improving it for horticultural purposes. The results, however, of their more recent labours are really amongst the wonders of invention, and illustrate in the most striking manner the doctrines of evolution that are now generally accepted by men of science. A pelargonium is distinguished by one conspicuous sign, as well as by many that are inconspicuous. The petals are never of the same size, and usually the two topmost are much larger than the other three. But the florists have aimed at the obliteration of this distinguishing character, perfect symmetry being one of their main requirements in a flower of this kind; and they have succeeded in enlarging the lower petals so that they equal those above them in size, and they have also caused the flower to fill out, so that in place of the windmill we have a close disc, the petals being so broad as to overlap, and so smooth and equal that the flower rather appears to be formed of one piece than of five separate pieces, that were formerly separate and visibly independent. We will not discuss the propriety of the proceeding, but declare ourselves as altogether in favour of the florists' work, and being in no way ashamed to confess that we have played our part in the performance, and secured very many splendid varieties of zonals, with smooth, circular flowers, formed of stout, overlapping petals, so symmetrical and compact as to suggest to the casual eye a perfect disc of one piece only.

The cultivation of the zonals is pretty well understood, and the plants are so accommodating that they submit to the most diverse conditions, save that five degrees of frost is the utmost in the way of cold that they can endure. But they love sunshine, though they never need a rich soil, and any excess of moisture at any time of the year causes

the leaves to become spotted, the growth rank, and the flowers few, while continued damp in winter is fully as fatal as frost to them. The high delight of the amateur who has taken in hand this class of plants for special treatment is to be found in the raising of seedlings. Oh, it is a rare pleasure to see a house full of seedlings just beginning to declare themselves in their first flowers as candidates for fame—or for the rubbish-heap! And to raise seedlings is an easy matter. The simplest mode of procedure is to take seed from the very best sorts that can be obtained, and sow it in a gentle heat in the month of March. The plants may be pricked off into thumb-pots, and afterwards, when large enough, be potted into 60 size, and again potted on into 48 size. The proper soil for them is a sweet, sandy loam, and all the better if from old meadow turf that has been laid up a year to break down the fibre; but any fairly good soil will answer with a liberal admixture of sand. If the management is good, some of them will show their flowers within a hundred days from the date of sowing the seed.

CUPHEA

THE CUPHEA.

Cuphea platycentra.

CUPHEAS restore to us the light of other days. Time was when all the lovers of gardens, and more especially the practitioners of chromatic colouring, were at fever heat in discussing the relative merits of *Cuphea platycentra* and *Cuphea eminens* and *Cuphea miniata*, and all other cupheas, known or unknown, that might be located in the parterre to the advantage of its systematic artistic colouring. "But now"—the scene is changed; the men are changed; the fashion is changed; cupheas are unknown—

> "The light of other days is faded,
> And all their glory past."

But who shall say they are less beautiful than they were? who shall appraise a plant in the way of a broker, and value it by what it may fetch in the money market? "A thing of beauty is a joy for ever; its loveliness increases" where there are souls to appreciate it, and therefore we shall claim the cuphea as a "familiar garden flower," and in the fervour of

appreciation of its real merit forget the fame of an hour that it enjoyed as an integer in the now historical bedding system.

The plant before us is the real old "Crystal Palace" cuphea, the best of the bedding plants of that particular style and tone. When employed in the splendid displays of bedding at Sydenham it was found to be amenable to very simple treatment, and we shall condense for the good of our readers the system of culture adopted there by Mr. Eyles and Mr. Gordon, as communicated by them to us *pro bono publico*. The stock was raised from cuttings in June and July, and the earlier the better, generally speaking. When struck so late as September a fair bloom may be secured the following year, but the earlier struck cuttings make the best bedders, because in the spring they may be cut back so as to form very strong bushy plants for the summer display. The stock raised for bedding may be very well wintered in boxes, and if there is not enough of them, cuttings may be struck in heat in February and March, and will make useful plants for the beds, though lean as compared with well-wintered plants from autumn cuttings. Any good soil will suit the cuphea when bedded out, and a dry sunny position may be selected where there is ample choice. But if there is no choice, the happy conclusion may be laid to heart that it will do very well almost anywhere.

The virtues of the plant are not yet all told. Oh, dear no. It is a real gem for winter flowers, and whoever would keep a greenhouse or conservatory gay through all the dead season would do well to grow a few plants of this particular species. Strike the cuttings in May, and in the same month prune rather severely any old plants you

have to make bushy young plants of them. Grow them with care, so that they do not suffer for want of water, and when re-potting use a rich, mellow, sandy loam. But in all stages keep the plants in rather smallish pots, and you will find them almost always in flower. If you suspect you are carrying the starving process too far, help them with manure water. A few large specimens are worth having, therefore old plants cut back and re-potted as soon as they make new growth are likely to pay for their keep. The plant likes moisture, but it is dangerous to say so, because when liberally grown it is too leafy, and the flowers are few and very much hidden.

Cuphea silenoides is a good half-hardy annual, blooming from July to September. The flowers are purple, and a tinge of purple is seen in the branches. It is effective when massed with some yellow flower, but not of much account alone.

Cuphea miniata is an annual or perennial, at the will of the cultivator. The flowers are in leafy racemes, the petals purple or rose. It will flower all the summer in moist soil.

Cuphea lanceolata is a vigorous plant of erect habit, with conspicuous and beautiful purple flowers. The end of the tube expands into three divisions, two of which form what we may term top petals, and the third a broad notched petal. To liken the flower to an orchid would not be *outré*.

Cuphea Jorullensis is probably the finest species known. The flowers are scarlet, tipped with yellow.

Cuphea purpurea, a pretty hardy annual, with bluish or pale purple flowers, will prove useful to associate with asters and balsams for autumnal bloom.

Cuphea cinnabarina may be grown to a fine specimen form as a greenhouse plant. The flowers are large, the

tube much puffed out, the limb expanding regularly like a miniature gloxinia, the colour pale red.

Cuphea verticillata is a nearly hardy species of moderate growth, the flower tube yellowish-red, the limb expanding irregularly and curiously, the colour violet.

The cupheas belong to the family of loosestrifes, of which perhaps the best-known garden flowers are the lysimachias. That any of these will stop strife will of course be understood, or why should they have such a collective and enviable name? Hear what the great Pliny saith: "If a pair of yoked oxen quarrel, a branch of loosestrife laid upon their shoulders will effect an instantaneous and perfect reconciliation." Dodoens, speaking of the yellow lysimachia, says: "The perfume of this herbe dryed, driueth away all Serpentes and venemous beasts, and killeth flies and knattes." Gerarde makes a variation on the drying of the perfume by saying, "The smoke of the burned herbe driueth away serpents;" and he quotes Pliny to the effect that "it dieth haire yellow; which is not very vnlike to be done by reason the flowers are yellow."

BEGONIA

THE BEGONIA.

Begonia intermedia.

BEGONIAS may be divided into two great classes: those that are grown for their leaves, and those that are grown for their flowers. The last-named section may be divided into those that are deciduous, and flower in summer; and those that are evergreen, and flower at all seasons. The summer-flowering kinds may be properly spoken of as familiar flowers, but they are somewhat new to our gardens, and have probably not yet attained to the fulness of their fame.

The introduction of *Begonia Boliviensis, B. rosæflora, B. Pearcei,* and some few others, was in the nature of a floral surprise to the British public. Their very distinct and fine characters and their comparative hardiness were recommendations of the highest importance to cultivators. There was a cry for more, and more were found; and the florists, in the frenzy of a new fascination, went to work and created new begonias by

the score, and were not content with single flowers of all colours, but resolved to have them double, and were soon gratified by complete success. There are ninety-six varieties entered in Messrs. Veitch and Son's catalogue for the year 1880, and another fifty might be found in other catalogues of London houses, and another hundred probably in those of Continental firms; so we may declare that, in round numbers, there are about two hundred named varieties of flowering begonias in cultivation.

All the begonias require a light, mellow, rich soil. A very suitable mixture for the flowering section, when grown in pots, may be prepared by mixing together equal quantities of turfy yellow loam, old rotten hotbed manure, and well-rotted and sifted leaf-mould. If it is not somewhat granular and kindly in texture, silver-sand must be added; but often the loam and leaf-mould contain as much grit as is needful. We will suppose that you begin the cultivation in the month of May. The plants will then be small, and without flowers. At the end of the month, and thenceforward to the middle of June, during warm, dull weather if possible, they may be planted out. An open, sunny, sheltered position is desirable. Any amount of sunshine they can endure, but wind and rain are unfavourable conditions. In preparing the bed there need be no elaborate arrangements. A good garden soil, well broken up and enriched with a liberal addition of mellow manure, will answer perfectly; and as regards after-management, there is almost nothing to do beyond keeping the bed clear of weeds, and giving the plants an occasional good soaking of water during very dry weather. Such aids as sticks and ties they ought not to need; but if you happen to plant tall-growing sorts, they must be supported in good time,

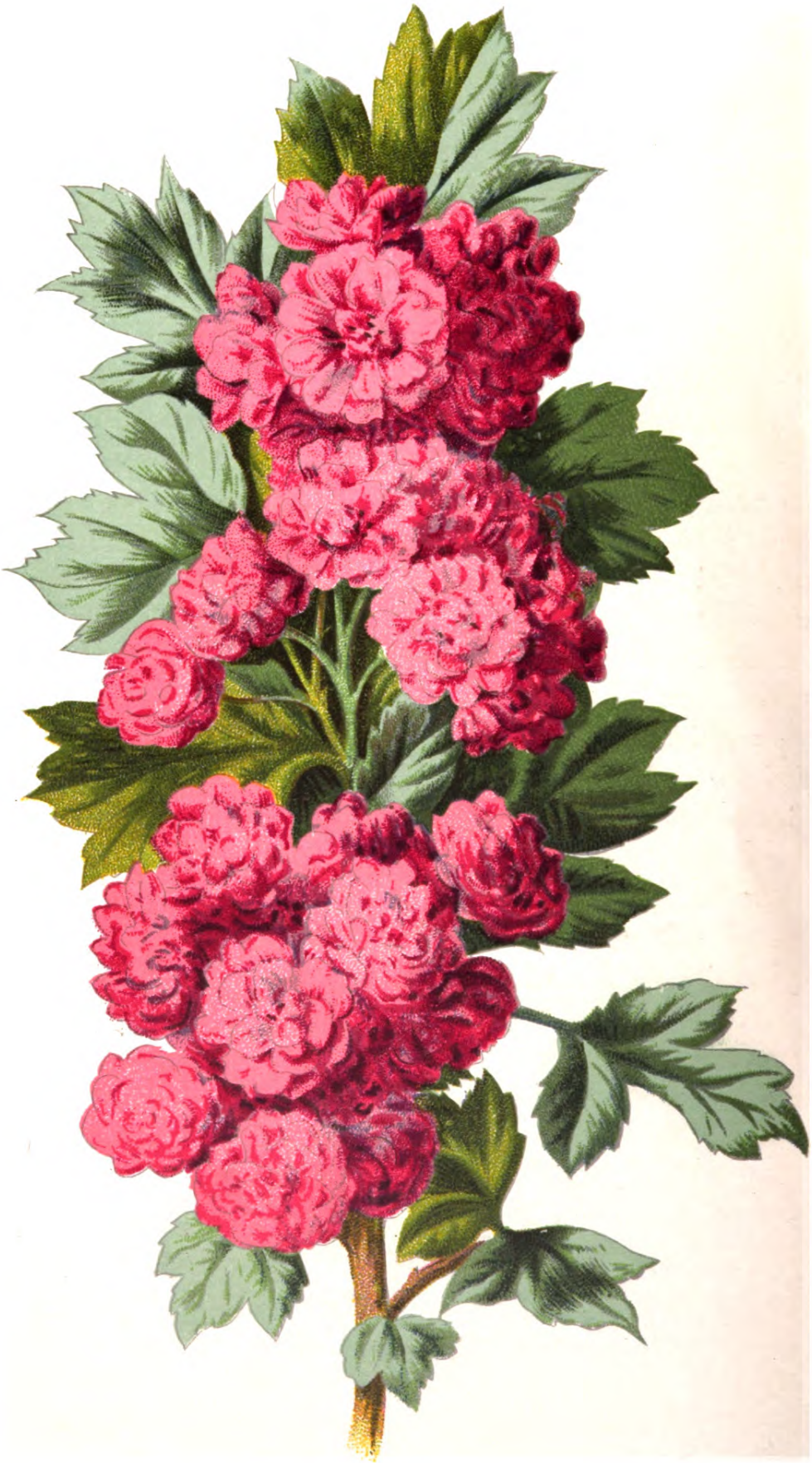
or sudden gusts of wind may snap their succulent stems. When the beauty of the bloom is past, the roots may be dug up, and stored away in sand on a shelf in the greenhouse, or any other place where they will be safe against frost, and they should be a little damp, or at least not utterly dry. In February or March the tubers may be planted either in pots or boxes, and placed in a temperature of about 50°, to begin a new growth. The pots or boxes should be nearly filled with potsherds, for if the tubers are put in any depth of soil beyond about three inches they will be in danger. A compost such as is recommended above will suit them, but a better compost, both for starting tubers and cuttings and seeds, will be one consisting of equal parts turfy loam, leaf-mould, and sharp sand, with no manure at all. If a large stock is needed, the first shoots may be snapped off when an inch or more in length, and struck as cuttings in a temperature of 60° in a somewhat close frame. When the cuttings are rooted they must have more and more light and air, and must soon be potted off singly in thumb-pots, after which the management will be the same as with any other bedding plants.

To raise these begonias from seed, boxes or pots should be provided with plenty of potsherds, and only two or three inches of sandy soil, containing much leaf-mould or peat. The seed is as fine as snuff, and must be sprinkled with great care, to spread it evenly over as large a space as possible. The month of March is the best time to sow the seed, but a fair growth may be obtained in a good season by sowing in April or May. When the seedling plants are large enough they must be pricked out, and when they have made a new growth they must be potted into thumbs.

The raising of new varieties may be accomplished by

the simple process of growing a few of the very best sorts, keeping them in an airy greenhouse, and saving all the seed they produce. But the prudent way is to fertilise them artificially, in which case all male flowers should be removed in the bud from the plants selected for seed-bearing, but the female flowers need not be removed.

The beginner in begonia culture will be inclined to ask, "How shall I distinguish the males from the females?" There is nothing easier. You know how different are the flowers of a pumpkin or a cucumber—one produces golden pollen, but has no fruit at its base; the other produces no pollen, but there is the fruit complete, though small, attached to the base of the flower, and distinguishable in the very earliest stage while the flower-bud is yet but a mite of a thing. It is just the same with the begonia. Usually the flowers appear in threes, two gentlemen with a lady between them. But this is no matter. The female flower has a triangular fruit or seed-pod at the base, and the male flower has nothing.



HAWTHORN

THE HAWTHORN.

Cratægus oxyacantha.

IF the "milk-white thorn that scents the evening gale" had, as a literary subject, been "unattempted yet in prose or rhyme," the temptation would at this moment be too strong to be resisted. But turn to the books, dear reader, and see that whoever could say or sing something in its praise has made the most of his advantage. The history of the thorn has in consequence grown to vast proportions. We may therefore devote the small space at our disposal to a new essay on the place of the thorn in the garden; and we begin by saying that the double variety here figured represents a very important and splendid section of thorns that, in the most proper sense of the term, may be described as pictorial and garden trees.

It may be said of the thorns that they are more accommodating than any equally handsome class of hardy

deciduous trees. Go to Lincoln's Inn Fields in June, and there you shall see, flowering freely, a fine collection of varieties of *Cratægus oxyacantha* in a most thriving state in the very heart of smoky London, where earth and air have been poisoned by coal-smoke for centuries. Go to Troutbeck in July, and walk up the Vale to Kirkstone Pass, and you may see thousands of hawthorns blooming gaily, and you may note by the herbage and the colour of the soil that they are all located on a basis of starvation, where oaks and elms would no more grow than they would on a cheese-plate. And you may go to Cobham Park, and see huge "creeping" thorns thriving in a good soil that produces the finest timber; and after this, wherever you meet with thorns, you will probably note that they are almost careless of conditions, as though endowed with a special power of adapting themselves to any circumstances short of being made into faggots and put upon the fire. And they adapt themselves to that fairly well, for thornwood is capital fuel, but the adaptation is of quite a temporary nature.

The inexperienced observer who notes the immense difference between the "hawthorn in the dale" and the double-flowered tree of the garden will be disposed to regard them as distinct species, for indeed the distance in time as well as in appearance from one to the other is great. Nevertheless, the nature of the transition may be studied on the hills and in the woods, for there will be found among the wild thorns examples varying in the colours of their flowers from the purest white to several shades of blush, flesh, and rosy pink; and the scientific observer will readily and properly conclude that by systematic selection and raising plants from seed many fine varieties might soon be obtained, even if our present

grand group were obliterated. We have noted many interesting "sports" on our own pink and scarlet thorns that only needed to be "fixed," by grafting and other modes that are commonly pursued, to prove useful additions to the lists of established kinds.

In selecting thorns for the garden it will be well to ensure a goodly proportion of the single scarlet and pink varieties, for these make a double display, their red berries being fully as ornamental in autumn as their beautiful flowers are in the early summer. Moreover, where there are plenty of haws there will usually be plenty of birds, and the glorious song of the thrush is as much to be desired in a garden as any of its other delights. Of the splendour of the double varieties there can be no question at all, but they produce no berries, and the individual flowers are, in our opinion, far less beautiful than the single kinds. But tastes differ; and on that point we shall say no more, as we shall find matters of fact enough to fill out our pages.

A selection having to be made for the borders and shrubberies, it will be proper to suggest that the Glastonbury thorn should be included in it. This is the variety that is said to flower on Old Christmas Day, and we have actually seen it in flower on the 6th of January on our cold land in the Valley of the Lea; but it has happened only *once* in the course of nearly thirty years. At Glastonbury and elsewhere in the west of England the event may be looked for whenever mild weather occurs at midwinter, and in that is to be found one of the points of interest attaching to this variety. Amongst other points of interest must be noted the fact that this variety produces a brilliant show of large golden-green leaves long before any other

thorn shows the faintest glimmer of greenness. Therefore if there is a sheltered nook near the house in which a thorn may be planted with propriety, then the Glastonbury thorn is the very tree for that nook, because it will make a cheerful object in the view from the windows in those early spring days when new leaves and flowers are eagerly looked for as spiritual food to revive us from the depressions of the winter. The true story of the Glastonbury thorn, as told in the *Gardener's Magazine* for Dec. 21st, 1878, is much more wonderful than the legendary nonsense that is retailed in guide-books, and makes it appear that the tree came originally from the East, and established itself at Glastonbury in a natural way and without the help of any miracle.

> " Gives not the hawthorn bush a sweeter shade
> To shepherds looking on their silly sheep,
> Than doth a rich embroider'd canopy
> To kings, that fear their subjects' treachery ?"

LABURNUM.

THE LABURNUM.

Cytisus laburnum.

FAMILIARITY does not breed contempt when merit and appreciation accompany it. Who could be so profane as to regard with contempt the laburnum when flowering gaily in the merry month of May—as the Laureate puts it, "dropping wells of fire"? One might think fountains of gold a better figure; but it is too dreadful to propose any improvement in the lines of such a bard, and we already feel as though guilty of a runaway knock.

The common laburnum, like the common thorn, is well able to brave the smoke of a city and subsist on the worn-out, sooty soil of the most dejected London garden. In the squares and open places we see fine trees that flower gloriously; but occasionally we meet with pretty good examples in dirty holes and corners that seem to be utterly unfit for any kind of tree-life. But when we have seen these, and been

thankful that such bits of sunshine, as they seem, should drop down into nooks so needing them, and have then gone into the country and seen laburnums again, what a difference! In a really well-furnished country garden the laburnums are equal in splendour to any trees that are grown. Instead of calling them fountains we might call them mountains of gold.

The varieties of laburnum are not many, but they are interesting. The Scotch laburnum is generally regarded as a distinct species, and is named *Cytisus Alpinum;* but, in our opinion, it is a variety, and we have noticed other varieties that unite it with *C. laburnum* by a series of gradations. The most distinctive character of the Scotch laburnum is to be found in the seed-pod, which is glabrous, distinctly stalked, and winged along the upper suture.

The most remarkable variety is the one named *Cytisus Adami*, or *Laburnum Adami*. It is regarded as a hybrid between the yellow and the purple laburnum. If plants be allowed to have any sort of ideas of their own, we should say that Adam's laburnum belongs to the class of people who can never make up their minds what course to take in life, and so you can never calculate what they will do next. True it is that if this variety be grafted on the common laburnum the compound structure becomes the most ridiculous thing under the sun. In one part of the tree we shall see flowers of a good purple, in another part flowers of a dirty purple, and again in another part flowers of a bright yellow, and sometimes the three sorts are all closely associated and make a most absurd mixture. If we mark a branch that bears purple flowers, and watch it the next season, we may chance to find it then producing yellow flowers, and *vice versâ;* and the vagaries of the graft run

down into the stock, just as a man's giddy thoughts run to his heels and make him dance.

An equally curious but by no means ridiculous variety is the golden-leaved laburnum. This is a splendid tree, with leaves of the brightest orange-yellow colour, and makes a most conspicuous feature in the woodlands all the summer through. This is propagated by grafting it on the common laburnum, and when the graft takes and grows there is a good tree formed, and, however we may admire it, we are not called upon to arouse the organ of wonder. But it is a different case when the graft does not take. You must know that out of a given number of grafts inserted on suitable stocks a certain proportion will perish. It is with grafts as with seeds—they do not all "come up." Now, generally speaking, when a graft fails there is an end of it, and if the stock is left alone it will usually sprout in time and grow in its own way, whatever that way may be. But it is otherwise in this case, for the common green-leaved laburnum stock, from which the graft has been removed by violence or death, will produce golden leaves of its own—a case of genuine inoculation. There is a golden-leaved jasmine that exercises some such influence when grafted on the green-leaved jasmine; but the cases are not quite parallel.

There are in cultivation about twenty varieties of laburnum, but none are more beautiful than the common one that may be found in every garden. The pendulous variety (*L. pendulum*) is one of the most distinct, and the sweet-scented (*L. odora*) and the white-flowered (*L. flore albo*) are worth the attention of those who have a taste for interesting trees.

It should never be forgotten that the seeds of the

laburnum are poisonous, and occasionally prove deadly to children and cattle; therefore it is not well that a laburnum should overhang a grass field, or have a place in a school-garden or near any playground. Hares and rabbits are so partial to this tree that it may be turned to account for the protection of plantations. A certain proportion of laburnums being sown, the ground-game will eat them down in the course of the winter; but the trees will be renewed from the roots in the spring, and thus, by supplying food at times when the animals are hard-pressed, may tend to the preservation of more valuable timber.

ROSE CAMPION.

ROSE CAMPION.

Lychnis coronaria.

PLANT may be common and yet have an uncommon appearance, as may be seen in the example before us. The rose campion, which is now classed as a lychnis, but may with propriety be catalogued under its other name, *Agrostemma coronaria*, is as common as any good garden plant known. But it is peculiarly distinct, and may be recognised at any reasonable distance by its hoary leafage, its forked style of growth, the arrangement of the leaves in pairs, and the splendour of its solitary flowers. The rich purplish-crimson of these can never be imitated by the art of man, and when we see the best possible picture of them we must ask with Thomson, "Who can paint like nature?" and take the negative reply he gives. We may see in stained glass, when the sun shines through and floods the pane with fiery hues, a near approach to the transparent and delicate but intense richness of this

flower. But there is little need for a perfect imitation when the reality is at the command of all, for in the spring season the huckster florists sell rose campions at a penny each; they will grow almost anywhere, and whoever would despise them for their cheapness would deserve to see no more flowers in this world, whatever he might see in the other.

A small story may be worth telling, and here is a very small one of which this plant is the subject. A few years ago we visited a millionaire in a famous centre of manufacturing industry. The gardens were reputed to contain four acres of glass, devoted for the most part to grapes, pines, and peaches. The residence was a castle of high renown for political influence and princely hospitality. In making the tour of the gardens, and passing from begonias to bananas, and from orange groves to houses filled with orchids, we were invited by the head man to turn aside to see something "special." This proved to be a clump of the common rose campion that had located itself near the foot of a tree and had made a tremendous growth, and was then covered with delicious flowers—a penny plant prized by the millionaire and almost worshipped by his gardeners!

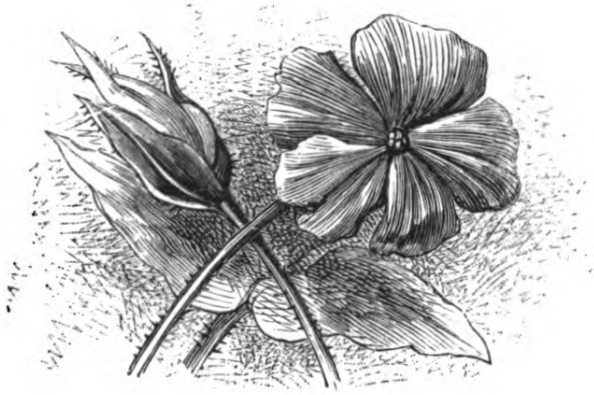
There are three forms of this plant in cultivation, comprising the single red (here figured), the single white, and the double red. John Gerarde figures the two single kinds in his usual truthful manner, and he records that in 1597 they were growing "plentifully in most gardens." He speaks of the soft leaves as being "fit to make candle weekes," and refers to the brightness of the flowers as suggesting the names by which it appears they were then known, as in English, the "gardner's delight, or gardner's eie; in

Dutch, Christes eie; in French, œillets, and œillets Dieu." It was also known as the rose of Mary and the rose of Heaven. In respect of its properties, it was classed by the herbalists with the thousand and odd plants that were considered of sovereign use against the bites of scorpions, a feature of our English writers on plants that betrays at once their indebtedness to the herbalists of Southern Europe, and their want of discretion in copying for readers utterly ignorant of scorpions, except as revealed in museums and books.

With a woolly plant before us, we may ask, "What is the use of vegetable wool?" In the arts it is comparatively valueless, but as a part of a living plant it is of considerable importance, and, *à priori*, it is fair to assume that the plant could not well do without it. The "wool," of which the common mullein affords a familiar example, consists of closely-packed jointed hairs, which are a veritable extension of the cellular tissue, and exercise a powerful influence in the life-economy of the plant. When the earth is parched and the root finds no moisture, these hairs promote a copious condensation of the night dew, which trickles down to the blade of the leaf, and thus they serve as food-collectors, as do the tentacles of an anemone or the cilia of an animalcule. But when the dry heat of the day returns, they serve to protect the sensitive leaf-surface from which they spring; and, in fact, the "wool" is to the plant a protector at all seasons against extreme conditions. We meet with hairy and woolly plants in all kinds of situations; but they appear to be in a special manner adapted to the mountains and the deserts, where keen frost, copious dews, and great heat and drought are characteristics of the average con-

ditions of plant-life. The plants that sting are rendered offensive by the poison glands that accompany the hairs with which their leaves are beset; these are brittle, and at a touch they part from their attachment and burst and diffuse their acrid secretions. The most terrible of all stinging plants is the devil's leaf (*Urtica urentissima*), which sometimes causes death by tetanus.

Amongst the plants nearest allied to the rose campion we must name the corn cockle (*Agrostemma githago*), a fine thing as a wilding, and occasionally seen in gardens. Better, however, than this are the scarlet lychnis of China (*L. grandiflora*); the shaggy lychnis (*L. Haageana*), the petals of which are curiously horned; Siebold's lychnis (*L. Sieboldi*), with terminal heads of beautiful white flowers; and the German catchfly (*L. viscaria*). These are worth a place in the very choicest selection of hardy plants.



COREOPSIS.

THE COREOPSIS.

Coreopsis lanceolata.

COMPOSITE plants so abound in all parts of the earth, and more especially in temperate and sub-tropical zones, that it is impossible to regard them collectively without experiencing a tendency to speculate on the beginnings of things. Are they the radiata of the vegetable kingdom, and therefore somewhat primitive in the chronological sequence of vegetable development? Are they primordial? No; we will get away from such questions, and for the present rest content in saying that there are 9,000 species of composite plants known to botanists, and they constitute about a twelfth part of the entire vegetable kingdom. Considering their number, the proportion of useful plants amongst them is small, but in respect of their usefulness there is just the same sort of family likeness that we discover in the cross-worts and the grasses. As in the crucifers a whole-

some pungency is the predominant property, and in the grasses there is an almost complete absence of medicinal virtue, but a prodigious power of producing food, so the composite plants are characterised by the production of a tonic stimulant, and the fragrance of the camomile is in many ways repeated in this vast group of plants. But we shall not seek in vain for useful plants among the composites, for the lettuce, endive, salsify, artichoke, and sunflower are composites; and if we can for once put the *dulce* before the *utile*, we shall find an immense assemblage of these plants adorning our gardens. The dahlia is one of the number; the coreopsis is another. Between the two how great and glorious is the floral throng!

The coreopsis, or calliopsis, is one of the first among garden plants to make an impression on the young amateur florist. It is sure to be included in his first purchase of garden seeds, along with the Virginia stock, ten-week stock, sweet-pea, and mignonette; and as these are all good things, we may congratulate him that he begins the world well in floriculture, and deserves to prosper. And our plant belongs to that happy-go-lucky family of flowers, the seeds of which may be sown where they are to remain in almost any kind of soil, and will come to gladness rather than grief, even with very bad gardening. Short of taking them up every two or three days to see how they are getting on, they will bear almost any amount of mistaken kindness, such as watering too much or not watering at all; being left as "thick as thieves," instead of being thinned betimes, and in being located in a shady place instead of the full sunshine. One of our sages has remarked that "Nature never did betray the heart that loved her;" but it seems Nature goes out of her way to encourage and

accommodate the hearts that love her "not wisely," but she does not know of those who love her "too well."

The seedsmen's catalogues will show that there are many sorts of coreopsis in cultivation. They are all good, and therefore all worth growing. They are mostly adapted by their height for the second or third row in the border, and as they are rather late in flowering, they should be sown as early in March as may be convenient.

The coreopsis takes its name from the resemblance of its seeds to a *koris*, or bug; but the name might by the fanciful, who care nothing for philology, be derived from *korus*, a helmet, because that word has grown so as to cover anything that glitters; and a bunch of coreopsis may be properly spoken of as a floral coruscation. And it is not a long way round to derive a coruscation from a helmet, because a few thousands of bright helmets moving in a mass make a glitter worthy of a grand name. In North's "Plutarch" (p. 395) we read of the Thracians and Macedonians, that "the glistering of their harness, so richly trimmed and set forth with gold and silver, the colours of their arming coats upon their curaces, after the fashion of the Medes and Scythians, mingled with the bright glistering steel and shining copper, gave such a show as they went and removed too and fro, that made a light as clear as if all had been on a very fire, a fearfull thing to look upon." Having digressed so far upon the hint of a fanciful derivation, and knowing it to be as nice to be hung for a sheep as a lamb, we subjoin an extract from More's "Psychathanasis" (II. 2, 16), in which occurs a quaint illustration of the possibilities of speech :—

"But oft when the weak body's worn and wasted,
And farr shrunk in, the nimble phantasie

(So far shee's from being withered and blasted)
More largely worketh, and more glitterandly
Displays her spreaden forms, and chearfully
Pursues her sports."

The other generic name by which these plants are known, *Calliopsis*, means "beautiful flower," or "lovely eye;" or it may be regarded as a reminder of Calliope, the first of the nine muses, who was not only lovely to look upon, but had an enchanting voice.

All the species of coreopsis are natives of the New World, where they range from far north to the hottest of the West Indian islands. It is usual to speak of the genus as consisting wholly of yellow-flowered plants, but *C. alba* has white flowers; *C. diversifolia*, crimson; *C. rosea*, red; and *C. atropurpurea*, dark purple. Several species are in repute as dye-plants on the American continent. *C. tinctoria* is so called on account of its value to the dyer; but perhaps *C. tricolor* is of more importance—at all events, it is not the least of its kindred in its economical relations. Although the flowers of these dye-plants may be yellow, the dye obtained from them is red.

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." Phanocles 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.

YORK & LANCASTER ROSE.

YORK AND LANCASTER ROSE.

Rosa Damascena.

WHY, it may be asked, is this old favourite of the English garden presented as a rose of Damascus? The reason is that the true York and Lancaster rose is a variety of *Rosa Damascena;* and if in this little work we recognise Latin names at all, we must be as nearly correct as possible. There are several distinct roses known as representing the two great families and the healing of their feuds, one of the best known being a variety of *Rosa Gallica.* But the "proper" symbolic flower is a striped damask rose, with green branches and pubescent leaves, and the habit of the old monthly roses.

As Shakespeare tells the tale it makes a profound impression. We see the foundations of the feud laid in the success of Bolingbroke and the cruel murder of the king as the curtain falls on the fine historical tragedy of "Richard II." We see it ripen in the first part of "King Henry VI." in the famous scene in the Temple

Gardens, where the white and red roses are defiantly plucked as party badges :—

"*Plantagenet.* Since you are tongue-tied, and so loath to speak,
In dumb significants proclaim your thoughts:
Let him that is a true-born gentleman,
And stands upon the honour of his birth,
If he suppose that I have pleaded truth,
From off this brier pluck a white rose with me.
"*Somerset.* Let him that is no coward, nor no flatterer,
But dare maintain the party of the truth,
Pluck a red rose from off this thorn with me.
"*Warwick.* I love no colours; and, without all colour
Of base insinuating flattery,
I pluck this white rose with Plantagenet.
"*Suffolk.* I pluck this red rose with young Somerset;
And say withal, I think he held the right."

Most fittingly the scene closes with the prophecy of Warwick—

"This brawl to-day,
Grown to this faction, in the Temple garden,
Shall send, between the red rose and the white,
A thousand souls to death and deadly night."

One of the most penetrating and pathetic passages in the historical plays of our great poet occurs in the third part of "Henry VI." (act ii., sc. 4), where the king on the wasted field beholds first a son that has killed his father, and next a father that has killed his son, and exclaims in painful soliloquy over the dead boy—

"Woe above woe! grief more than common grief!
O, that my death would stay these ruthful deeds!
O, pity, pity, gentle Heaven, pity!
The red rose and the white are on his face,
The fatal colours of our striving houses:
The one, his purple blood right well resembles;
The other, his pale cheeks, methinks, presenteth:
Wither one rose, and let the other flourish;
If you contend, a thousand lives must wither."

It is with a sense of immense relief that we see in the death of Richard III. the end of the sanguinary struggle, and most happily does that tremendous work close with the healing words of Henry VII., when upon Bosworth Field he declares—

> "The day is ours, the bloody dog is dead!"

and crowns the victory with an act of clemency and an expression of pious hope—

> "Proclaim a pardon to the soldiers fled,
> That in submission will return to us;
> And then, as we have ta'en the sacrament,
> We will unite the white rose and the red.
> Smile, Heaven, upon this fair conjunction,
> That long hath frown'd upon their enmity!
> What traitor hears me, and says not Amen?"

Returning to our flower, it will be observed that we have wandered far away from it, for the Wars of the Roses were represented by a white rose for Lancaster and a red rose for York. And what may they have been? In Shakespeare's time there were probably many kinds of roses in the Temple Gardens, but it was not so in the days of the Plantagenets. Then, in all probability, the only roses known in gardens were the wild roses of the woods. Supposing the scene which Shakespeare has so filled with the reality of life to be, not a creation of his own, but a scrap of genuine history, then we can find no other roses for the partisans than those described by Chaucer as—

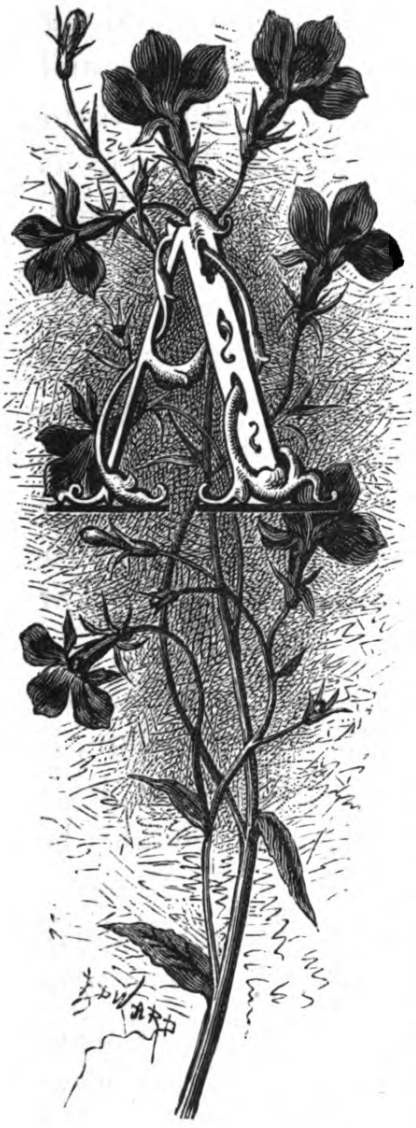
> "The bramble flour that bereth the red hepe;"

that is, the dog rose, the "canker of the hedge," which gives in one thicket flowers of the most delicate rosy-pink hue, and in another flowers of the purest white. They

had also the sweet-brier rose, with its elegant carmine-coloured flowers, and the downy rose, with its neat white flowers; the emblems of the pending strife were not wanting, but no one can now say what they were.

As remarked above, there are two roses that represent the desire of Richmond to "unite the white rose and the red." The true York and Lancaster we believe to be a striped damask rose; but there is another that often bears the name, the proper name of which is *Rosa mundi*, and its alliance is with the French rose (*Rosa Gallica*). These are not the only striped roses known to cultivators, for in truth there are many; but not one of the throng has ever been much prized by critical enthusiasts—that is to say, by rosarians, for that is the fashionable designation of the modern rosomaniacs—to which excitable and exacting fraternity the writer humbly confesses his attachment.

LOBELIA.



BLUE LOBELIA.

Lobelia erinus.

A PLANT so well known as the little blue lobelia may appear capable of telling its own story, but it is not so; and there is so much in the story that we must be business-like, and avoid sentiment and gossiping. It represents a pretty group of dwarf-growing, wiry-habited, free-flowering plants, the flowers of which are mostly of some shade of blue, but occasionally white, rosy purple, and pucy pink. They are all annuals or perennials, according to the treatment they receive and the kind of season they have passed through. In a hot dry summer they produce an abundance of seed, and become exhausted. In this case the old plants are likely to die during the winter, however much care may be taken of them. After a wet cool summer the old plants are likely to survive the winter, if potted and housed sufficiently early in the autumn.

In the cultivation of these dwarf lobelias, the saving

of old plants is resorted to only for the purpose of supplying cuttings in spring, annual renewals of the plants being absolutely needful if a free growth and an abundant bloom be desired. A quick way of making stock is to tear the plants to pieces in the autumn, and pot the little rooted tufts in sandy soil and store them away in a greenhouse or pit. The section known as "pumila," consisting of very dwarf cushion-like plants, may be very well propagated by this method, but the more wiry ones, such as ramosa and elegans, are best grown from cuttings. They may all be most easily grown from seeds sown in pans in February or March, and afterwards pricked out to become strong in time for bedding, or the seed may be sown in April where the plants are to remain to flower, and if thinned in good time the plants will do very well, although, of course, they will flower somewhat late.

All the lobelias, including the grand "cardinalis" section, require a deep, rich, moist soil, and therefore, if the soil of the garden is dry and poor, plenty of leaf-mould, rotten turf, and old hotbed manure should be dug in where the lobelias are to be planted. None of them are quite hardy, but none of them are particularly tender, therefore moderate protection in a cool house or pit will in general suffice for their preservation during winter, but long-continued frosts will certainly prove fatal to them. As they are a thirsty lot, an overdose of water at any time will scarcely trouble them; and if, amongst the arrangements for bedding plants, any house or pit proves too damp for geraniums, it will probably happen that lobelias may be wintered there with perfect safety.

The genus was named by Linnæus in honour of a remarkable man, who was one of the true founders of botanical science. Matthias de Lobel was born at Lisle in 1538, and was trained to the medical profession, under the physician Rondelet, in whose honour the fragrant rondeletia was named. Lobel, according to the good custom of his time, prepared himself for the business of life by travel, and in his wanderings he picked up a lot of knowledge about plants. He settled as a physician at Antwerp, but soon after went to Delft, where he was appointed physician to William Prince of Orange. Some time after this, but at what date no one can tell, he came to England, and published in London, in 1570, his "Novum Stirpium Adversaria," the object of which was to investigate the botany and materia medica of the ancients. Now it is of the utmost importance, in connection with the history of plants, to bear in mind that this work contains the germ, and a large and good germ, of the natural system. Lobel grouped the plants into tribes and families by their affinities, which is the essence of the natural system; and it is somewhat surprising that Linnæus did not work on this basis instead of framing his own artificial system, which, with all its ingenuity, is comparatively valueless even as an aid to the memory, although it becomes useful in spite of its inherent weakness of principle when it happens to agree with the natural system in the case of such groups as the grasses and the composites.

Lobel was an industrious author and a consistent worker in the garden. Under the patronage of Lord Zouch he established a physic garden at Hackney, and in due time was appointed king's botanist by James I., but

probably without a salary, and with but few official duties. In 1576 he published his "Observationes," wherein may be found the sources of much of the information embodied in Parkinson's "Theatrum Botanicum" and other works of the time that now surprise us by their erudition, their comprehensiveness, and the delightful accuracy of their engravings.

The lobelias are widely scattered, but there are not many of them. There are two British species, namely, *L. urens*, a very rare plant, found on heaths near Axminster, and *L. Dortmanna*, a rather showy water-plant with blue flowers. The "erinus" section are natives of the Cape of Good Hope, and comprise *L. bicolor* and *L. campanulata*, from which many of the garden varieties have been bred. The splendid plants of the "herbaceous" section, comprising *L. cardinalis*, *L. splendens*, and *L. fulgens*, are natives of Mexico.

SINGLE STOCK.

THE SINGLE STOCK.

Mathiola annua.

GILLYFLOWERS are of several kinds, and the stock is one of the number. A gillyflower may be a stock, or a wallflower, or a clove, or a carnation. The word is often regarded as a modification of July flower, or of the French *giroflée;* but it has deeper and older roots, being a corruption of the Indian *caryophyllon,** the odour of which resembles that of the clove-pink. The illustrative passages cited by Dr. Richardson indicate the probability of its being a vagrant sort of word; for in Douglas's translation of Virgil it is spelt *jereflouris;* in Holland's "Plinie," *gillofre;* in Spenser's "Shepherd's Calender," *gilliflower;* and in Burrow, *gillyflower.* In Parkinson's "Paradisus" we find descriptions of "gillowflowers" of many kinds, the chief being carnations, dame's violets, and stocks. The second in this list is the purple rocket (*Hesperis*), which is closely allied to the stock. There is a fine subject

* Greek, Καρυο φυλλον.

for a learned discourse in the word gillyflower, but the pith of it is now before you; all that really remains is amplification. And amid a thousand passages that might be quoted by one who should have no better employ than to hunt for them, the mention of the flower by Shakespeare in the "Winter's Tale" would scarcely be equalled for interest:—

"*Perdita.* Sir, the year growing ancient,—
Not yet on summer's death, nor on the birth
Of trembling winter,—the fairest flowers o' the season
Are our carnations, and streak'd gillyflowers,
Which some call nature's bastards: of that kind
Our rustic garden 's barren; and I care not
To get slips of them.
"*Polixenes.* Wherefore, gentle maiden,
Do you neglect them?
"*Per.* For I have heard it said,
There is an art, which, in their piedness, shares
With great creating nature.
"*Pol.* Say, there be;
Yet nature is made better by no mean,
But nature makes that mean: so, over that art,
Which, you say, adds to nature, is an art
That nature makes. You see, sweet maid, we marry
A gentler scion to the wildest stock;
And make conceive a bark of baser kind
By bud of nobler race: this is an art
Which does mend nature,—change it rather; but
The art itself is nature.
"*Per.* So it is.
"*Pol.* Then make your garden rich in gillyflowers,
And do not call them bastards.
"*Per.* I'll not put
The dibble in earth to set one slip of them:
No more than, were I painted, I would wish
This youth should say, 'twere well."

In the old copies it is spelt *gillyvors*, which is, no doubt, a mere contraction of gillyflowers; and it is equally beyond

a doubt that the gillyflowers Perdita cared not for were the streaked stocks figured by Parkinson at 259 of the "Paradisus," and labelled "Single stript Stock Gilloflowers."

The curious reader may be disposed to inquire why these flowers were called *stock*-gillyflowers? for from that old compound we derive the modern designation "stock." The reply is of interest, as tending the more certainly to define the range of the term "gillyflower," and so make an end of controversy. They were called stock-gillyflowers to distinguish them from others that were not stocky; for the stock has a distinct stem, and is tree-like in growth, some of the kinds forming bushes two to three feet high, whereas the "clove gillyflowers" are grass-like rather than tree-like in their growth, and these last were the gillyflowers, or gillyvors, *par excellence*.

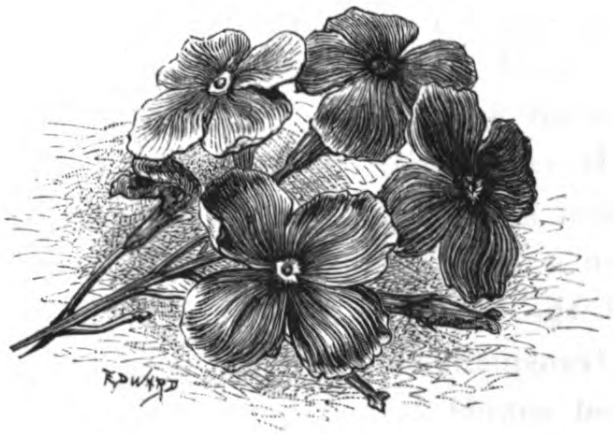
Single stocks are not thought much of by the florists, but when seen in large clumps they are as cheerful as any flowers in the garden, and their spicy odour is very refreshing. The annual or ten-week stocks should be treated as half-hardy to insure a good bloom, and the following is as good a code of cultivation as we can devise for them.

Sow the seed in pans filled with light rich soil in March and April. Keep the pans under glass until the plants are stout and strong, and then plant them out in a frame. If you cannot do this, wait until the weather becomes warm and settled, and put the pans out of doors, giving them a little protection for the first two or three nights. If the seedlings are put into the frame you will be able to transplant them to the beds with nice tufts of roots; if you cannot bring them on in this careful way, you must transplant into the beds from the seed-pans, but for this you must wait for summery weather.

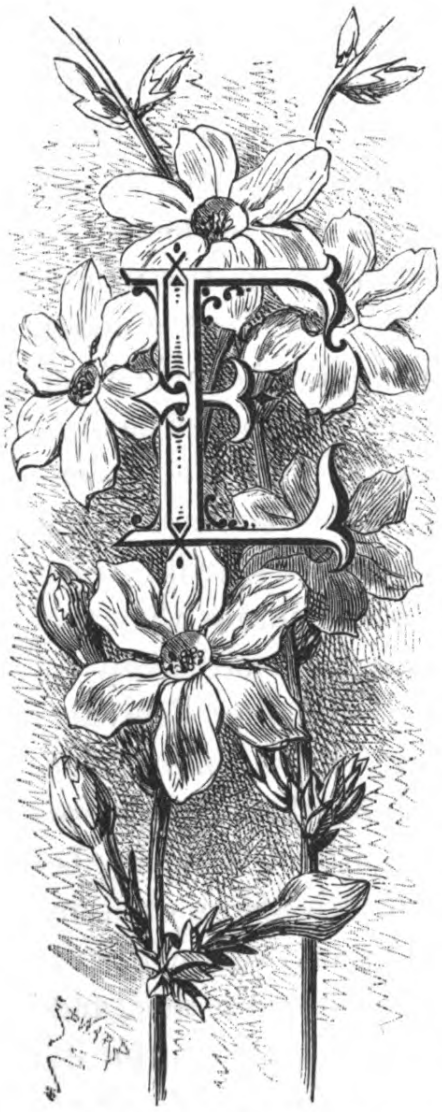
Annual stocks will flower fairly well in any garden soil, but if a rich and long-lasting bloom is desired a bed of rich soil should be prepared, for of all the flowers in the garden, stocks require and deserve good cultivation, which includes providing them with a rich soil and giving them plenty of water during dry, hot weather.

For early flowering in pots the seed should be sown in August, and as soon as the plants are large enough to handle they should be planted out on a bed of light but good soil in a brick-pit, or be pricked out into pans and wintered in the greenhouse. Soon after the turn of the year they should be potted singly in five-inch pots in rich soil, and have a warm berth to bring them on for flowering. A more simple and by no means despicable procedure would be to pot them from the seed-pans in autumn, putting three plants in a five-inch pot.

The *East Lothian Stock* is a great favourite in Scotland. The seed is sown on a mild hotbed in February, and the plants are nursed with care, and put out in rich beds in the month of May.



WINTER JASMINE



THE WINTER JASMINE.

Jasminum nudiflorum.

EVERY known jasmine is worth growing if space can be found for it and taste inclines to it. We cannot expect everybody to grow everything, and therefore we deprecate the earnestness of those writers in horticultural papers who devote their fine energies to the abuse of people who grow what suits themselves in defiance of the dictates of their egotistical critics. The jasmine now under consideration is not adapted for any great variety of uses, but it is a pretty thing to grow on a wall near doors and windows, because in the dark days of winter it will be all alive and full of golden light with its generous display of yellow flowers. As these appear when the plant is as yet without a leaf, it is called the naked flowering jasmine (*Jasminum nudiflorum*).

This jasmine was introduced from China by the late Mr. Robert Fortune, as one of the results of his memorable

and successful expedition on behalf of the Royal Horticultural Society, in the years 1843 to 1846. It is a hardy deciduous shrub—so hardy, that although we have had some half-dozen terrible winters since it became established in the country, we have never heard of an instance of its being destroyed or even seriously injured by severe frost. Accustomed as we are to "floral surprises"—which do not cease to "surprise" even when one gets used to them—we think we were never more surprised than in the month of March, 1880, when on the first look round after about three months of the most destructive and horrible frost and fog, we found on the wall beside the garden door a delicate stippling of the yellow flowers, with an undercolour of the grass-green branches of this storm-defying and most cheerful jasmine. It was like life starting from the grave, and at all events it was an assurance that the grave had not closed over all things, as it seemed likely to do, when the twelve days' fog of the preceding February had carried both heart-break and sorrow into innumerable homes where the winter had begun with mirth and gladness. Such a plant is a pearl of great price, although it may be bought with a shilling, and will grow anywhere, even in the stuff the builders call "dirt." As any soil will suit this plant, so will any aspect. But a sheltered corner, and if possible a dry, warm, sandy soil, should be chosen for it, in order to secure its flowers in plenty in the very depth of winter. Then you have but to nail it carefully to the wall or fence, and prune it just enough to keep it tidy. To employ the knife in any way, with a view to promote the production of flowers, will prove a grave mistake. Let your tree grow in its own way, and it will flower in its own way, and that will be the best way. But you may cut a

little here and a little there to insure regularity of growth, and if any portion of the tree appears exhausted through age, cut the branch away to the base, and at the same time remove a few inches of the top soil, supplying its place with fresh turfy soil or half-rotten stable-manure. There must be no "cut-and-come-again" practice with this jasmine, or you may have to whistle for flowers, and that is a profitless pastime on a winter day when the wind already whistles too loud for any one to hear your piping.

There are several fine species of jasmine adapted for general use that are but little known. *Jasminum fruticans* is of upright habit, with dark green glossy leaves and yellow flowers. *J. humile* is like the last in general character, but more humble in growth; the flowers are yellow. *J. revolutum* makes a handsome bush, the leaves dark green, the flowers yellow and fragrant. All these are hardy, and flower during the summer. In places well favoured as to climate a few fine species that are a trifle tender may be planted, such as *J. pubigerum*, *J. Wallichianum*, and *J. heterophyllum*, which have yellow flowers; and *J. Azoricum* and *J. odoratissimum*, which have white flowers. Any good soil will suit this group, but they need dryness and warmth, and are quite too tender for the climate of London. The fruits of the jasmines are not often seen, but in hot dry seasons the common white jasmine (*J. officinale*) will in favourable localities produce quite a crop of its round berries, of the size of smallish peas, and of a dark colour.

If you happen to have any extent of walls that might with advantage be devoted to the production of winter flowers, the following may be planted with a prospect of

happy results:—*Chimonanthus fragrans*, a very fine subject when in a snug, sheltered nook; *Chimonanthus grandiflorus* and *C. luteus*; *Forsythia viridissima*, *Garrya elliptica*, and *Cydonia Japonica*. The first and the last of the list are the best, and any good soil will suit them.

"——When thy heart, in its pride, would stray
From the first pure loves of its youth away—
When the sullying breath of the world would come
O'er the flowers it brought from its childhood's home,
Think thou again of the woody glade,
And the sound by the rustling ivy made—
Think of the tree at thy father's door,
And the kindly spell shall have power once more."

HEMANS.

INDIAN PINK.

THE INDIAN PINK.

Dianthus Chinensis.

VARIABILITY is a common characteristic of garden flowers, and is the quality on which depends very much of the interest they excite in the mind of the florist. A flower that continues constant to its typical character, or but rarely manifests a capability of varying, will never attain to high popularity, no matter how splendid may be its appearance when in full dress. The Indian pink possesses the charming property of changeableness in an especial degree, and the consequence is that our gardens abound with distinct and rich varieties that in some instances are so far removed from the type that the relationship can only be determined by the trained eye of the critical botanist. The splendid forms known as *Dianthus Heddewegi, D. giganteus,* and *D. laciniatus* are all sub-sections, or "strains," of *D. Chinensis,* and it is not unlikely that if they were at this moment destroyed, they could be reproduced from the species within the lifetime of an earnest florist who should

have the good fortune to begin early and be spared to labour late in developing the variability of this gay and useful plant. In its simple, and for present purposes we may say original state, as the common Indian pink, it is surely the cheapest and most beautiful of all our hardy annuals; but in its improved condition it ranks as a florist's flower, and we name the finest examples and regard them as perennials because they are propagated from cuttings. In the books the Indian pink is a biennial, being so classed because it is usually sown in summer to flower the next summer, and having flowered, dies. But it has been our rule to sow the seed early in a frame, and put the plants out in a bed of light rich soil in the month of May, and have them gloriously in flower from July to the end of the season: thus it becomes an annual. But it does not of necessity die after the first season's flowering, for on a dry soil it will live many years, if the dead flowers are removed, so as to prevent the swelling of seed-pods: thus it becomes a perennial. A majority of so-called "biennials" may be treated as annuals or perennials at the discretion of the cultivator. Of all the common plants, the life-term of which may be thus contracted or prolonged at pleasure, the most interesting, perhaps, is the mignonette. As usually treated it is an annual; but we have had immense mignonette trees that have lived fifteen years, and become quite woody and venerable, the one secret of keeping them so long being the systematic prevention of seeding. Allow them to swell a fair crop of seeds, and away they go. Do not allow a single seed-pod to swell, and in all probability a mignonette plant would live as long as its owner, and then become an "heirloom," or more likely a "white elephant," to another possessor.

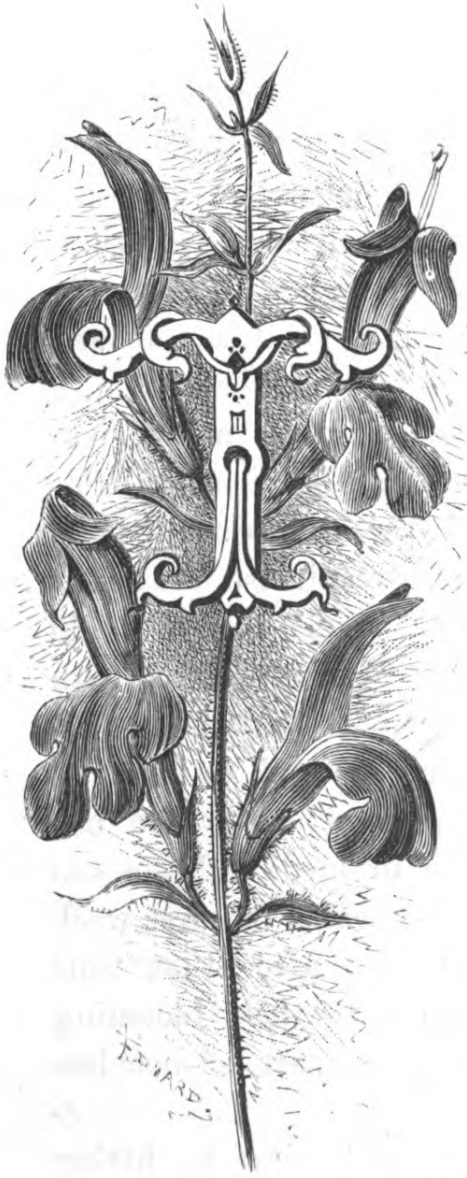
The Indian pink was introduced about 1713 by a French missionary named Bignon, and soon became a popular garden flower. The plant has a singularly frail appearance, and yet it is by no means tender in constitution. The narrow glaucous leaves, too, seem out of proportion to its large and richly-coloured flowers, a quality which may be termed "alpine," for the plants of the mountains commonly produce flowers of immense size in proportion to the herbage that sustains them. Any ordinary good soil will suit this plant, but excessive damp in winter is to be carefully avoided by the cultivator, and therefore, when grown on a heavy soil, the stock should either be wintered in pots and boxes in a frame, or in a bed in a pit, or, if in the open, a raised bed should be prepared for them consisting of good loam with a considerable proportion of sand. From this they may be transplanted in April to the beds or borders in which they are to flower. But this is beginning at the wrong end, because it presupposes the possession of plants. The very best way to obtain a stock is to sow seed in an open border or cold frame in May or June. If the plants are required to flower as early as possible the same season, sow in February or March in pots or pans, and place on a hotbed or in a warm house, and as soon as the seedlings have made a little progress, prick them out into boxes and nurse them with care, and plant out early in May.

It is singular that the word "pink" is so various in its meaning, that it may be cited as one of the wonders of philology. We talk of the "pink of perfection;" and a flower does not cease to be a pink though its colour may be white, purple, or even yellow. Whitsunday is a "pink day," but the term Pentecost does not mean either a

White Sunday or a Pink Sunday, but simply the "fiftieth." From "Pentecost," however, we have not only the name of a festival of the Church, but the name of a flower and of a colour, and of a process that has melancholy suggestions —that of "pinking." By a roundabout but not uncertain process, a pink becomes an eye, and also anything that glitters. The French term for the flower is *œillet*, an eye, or eyelet, and it is in accordance with the most common mutations of words to find that *pink* is a merely sharpened form of the older word *bink*, and this again a departure from *wink*, and, following this up, we attain to the Anglo-Saxon *wincian*, or, as we have it in common parlance, winking, a movement of the lids of the eyes. A pilot's boat is sometimes called a "pink," and the scar resulting from a wound is also called by the same name. Thus, in Cowper's expostulation, "pink'd" means marked with stabs—

> "He found thee savage, and he left thee tame;
> Taught thee to clothe thy pink'd and painted hide,
> And grace thy figure with a soldier's pride."

BLUE SAGE.



THE BLUE SAGE.

Salvia patens.

THE light of other days is faded, and the blue salvia is no longer in high renown as a wonder amongst bedding plants. It has filled as many pages of print as the crimson flax, but now the horticultural writers have nothing to say about it, and appear, indeed, to have forgotten its gay existence. It might have been famous to this day if it could but have stooped to conquer, but it was always too tall for its place, and carried its colours carelessly, as if seeking the bubble reputation were a pastime for such meaner ones as without seeking would never outwin reputation at all. But we must be wise about it, and endeavour to earn our wages.

The blue salvia is a tall-growing, loosely-branched, untidy plant that may be grown equally well in the greenhouse or the stove. For summer bloom the greenhouse suffices, and during the warmer portions of the summer

the plant will, if properly managed, flower freely in the open air. If winter flowers are required, the plant must be in the stove, where, if fairly dealt with, it will rise to a height of ten or twelve feet, and make a very delightful display of its intensely blue flowers, in which the blue of the delphinium—the rarest colour in nature, save in the vast firmament above—is developed in power and purity.

Salvia patens may be raised from seed with ease and certainty. If it is sown in sandy soil in shallow pans and boxes early in February, and placed in the stove or on a common hotbed, the plants may be grown to a sufficient size to make a good display in the flower garden the same season. It will be necessary to pot them into small pots, and keep them in a warm pit or greenhouse until the middle of May, when they should be transferred to a cold frame, and have more and more air by degrees, but with very great care in the first instance, the object of this treatment being to render them hardy enough to bear full exposure before they are finally planted out The bed should be in a sunny situation, well drained, and the soil somewhat sandy. To plant them out before the first week of June would be unwise, but as soon after that time as possible they should be consigned to their blooming quarters, and should be at a distance apart of not less than nine to twelve inches.

The plants can be kept from year to year by lifting the roots after the tops have been cut down by frost, and storing them in sand during the winter. Early in the spring these roots should be planted in boxes or pans filled with light soil, and be placed in a moderate heat to start them into growth. They will soon produce young shoots, which, when two or three inches in length, may be taken

off as cuttings, and will soon strike in a temperature of 70°. This practice may be varied by lifting and potting the plants before the frost has defaced them, in which case they must be wintered in a warm greenhouse or the cool end of the stove, and have but moderate supplies of water until they begin to grow freely in the spring. At the time of potting, superfluous shoots may be removed and struck, but the autumn is an inconvenient season for propagating this salvia.

The crimson salvia (*S. splendens*) and the small *S. coccinea* are about equally well adapted for bedding as *S. patens*, but they are all so diffuse in habit that to employ them to advantage requires more than ordinary taste and judgment. *S. coccinea* answers admirably to grow from seed as an annual, as when so managed it does not grow much more than a foot high, and it blooms freely from July to October.

For the greenhouse and conservatory the following species of salvia may be especially recommended:—The narrow-leaved (*S. angustifolia*), flowers blue, appearing in May; the light blue (*S. azurea*), flowering from August to October; the scarlet (*S. fulgens*), a fine plant, producing a grand show of scarlet flowers in August; the white patens (*S. patens alba*), a variety of the plant represented in the plate. It is useful as a greenhouse plant, but is scarcely effective as a bedder.

A remarkably fine group of salvias has been lately brought into public notice by Mr. H. Cannell, of Swanley. We recently received grand spikes of bloom of three of these, and therefore can speak of them as flowering well in the autumn. *Salvia Pitcheri* produces a profusion of flowers of the most pure and brilliant blue, and will flower

all the winter in the conservatory. *S. Betheli* has brilliant scarlet flowers; *S. splendens Bruanti* also has scarlet flowers; *S. Hoveyi* has flowers of an exquisite tone of violet or satiny purple. These four may be considered the most useful of all the salvias in cultivation.

A few other kinds deserve mention. *S. tricolor* is a sweet little gem, with white tube and mouth, and the upper lip purple, the lower lip scarlet—a bit of Nature's fancy work in painting that appears intended to mock the human painters of flowers. Thirty years ago we used to see in the gardens two curious salvias, named respectively *S. bracteata* and *S. horminum*, which are remarkable because their conspicuous features are their coloured bracts, the flowers of both being blue.

CRIMSON FLAX.

THE CRIMSON FLAX.

Linum grandiflorum.

WHEN Pharaoh trembled to behold the plague of hail, "and fire mingled with the hail, very grievous," he repented, and besought Moses to "intreat the Lord;" and Moses spread abroad his hands, "and the thunders and hail ceased." Then it was found "that the flax and the barley was smitten: for the barley was in the ear, and the flax was bolled." This passage establishes the cultivation of flax in Egypt 1,500 years before the Christian era, and over 500 years before the time of Homer, who speaks of it as representing an important domestic industry. Herodotus describes the Egyptian priests as wearing linen garments, as in after-times was the custom of the priests of Israel, as ordained in Exodus xxviii. The common annual flax bearing blue flowers was, in all probability, the plant grown for fibre from the earliest times in all parts of the Old World.

Whatever may be the economic relations of the crimson flax, there can be no mistake as to its rank as a garden plant. It is certainly one of the most splendid hardy annuals known, and is capable of becoming a perennial under suitable management. Its average growth is twelve to fifteen inches; the leaves are elliptic to linear, the upper ones the largest. The flowers are in a loose terminal panicle, each measuring about one and a half to two inches across, salver-shaped, the colour deep carmine or crimson, the claw of each petal streaked with white lines, and divided from the limb by a transverse mark of red-brown; the sepals have white margins. Thus it will be seen that when the flowers have been admired for their fine form and rich colour, some entertainment may be derived from a minute examination of their structure.

To grow this plant to perfection is an easy task. The first step to be taken is to insure a true sample of seed, for worthless kinds of flax are sometimes sold for it. The soil in which the plant makes the finest growth is a free, fertile, sandy loam, but any soil in which summer flowers usually thrive will suit it. The seeds should be sown in a pan in a frame in the month of March, and be carefully nursed until the plants are large enough to handle, when they should be planted out six inches apart. From the time the seedlings appear they should have plenty of air and light, for if at all drawn or weakened in the early stages the bloom will be less satisfactory. A sunny open position should be chosen for the bed, and a few waterings must be given if the weather is dry when they are newly planted out. If sowing in a frame be not convenient, the seeds may be sown where they are to remain some time in April, or if the soil be naturally dry and warm, in

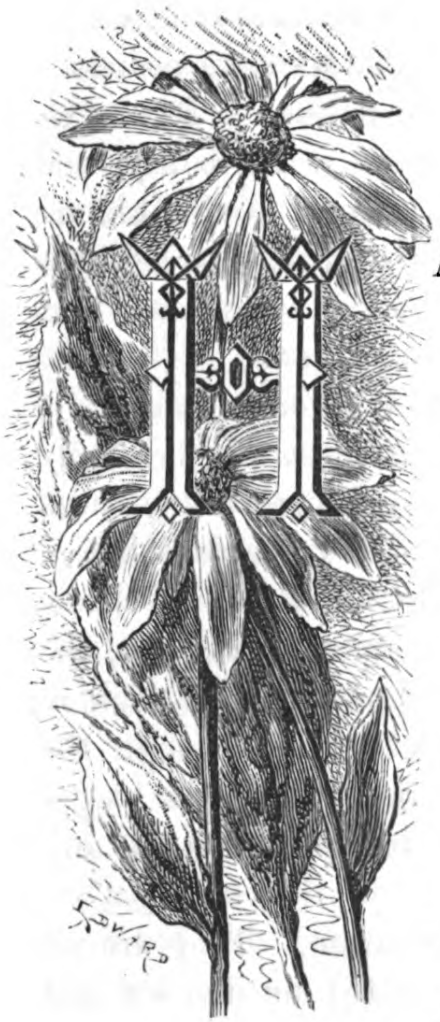
March, and in due time the plants must be thinned to six inches apart. They require no support and no special attention, and dryness with heat will do them no harm if they have been assisted in the early stages to become well established.

In common with most other plants, the crimson flax is greatly benefited by systematic removal of the flowers as their beauty declines, to prevent the growth of seed. But if seed be wanted, they must be allowed to run their course, and the round seed-pods must be gathered when nearly ripe, and be spread in the sun under cover to finish, when the seed may be shelled out, and stored away in a paper or linen bag.

The common flax (*Linum usitatissimum*), although but little prized as a garden plant, is not wanting in beauty. Its extremely light and airy style of growth, and its comparatively large salver-shaped blue or white flowers, render it an interesting if not an attractive plant. Of its uses it would be almost idle to speak here, because we could not hope in a few words to convey to the reader anything that is not already well known. However, at the risk of retailing stale news, we will briefly record that we have seen flax fibre prepared for the workers in Brussels lace, and have experienced surprise at the excessive care bestowed upon the business, while all wonder as to the high prices of the best kinds of lace was by the same experience taken away. The flax is grown with great care at Hal and Rebecque, and the retting is conducted with scrupulous nicety, to secure clean fibre of great strength. The thread for the lace is spun in rooms kept nearly dark, to discipline the eye and the fingers to the delicate task of rejecting all that is

faulty and securing a thread of exceeding fineness and great strength. As regards the strength, indeed, some samples that are as fine as the threads of a spider's web are nevertheless as strong as a metal wire. The result of all this care is that the thread is worth its weight in gold before the making of the lace begins. There is now much inferior thread used in the production of cheap laces, but certain manufacturers of Brussels maintain the high quality for which their city has long been famous, and those who care to pay the price may obtain lace of modern make, equal in every way to the best of laces that have acquired historical renown.

RUDBECKIA



THE RUDBECKIA.

Rudbeckia hirta.

HARDY herbaceous plants have been rising in public favour during the past ten years or so, but they will never so entirely engross the admiration of the English amateur as certain over-zealous advocates believe and desire. The world is tolerably wise as to what it wants, and it is useless for specialists to go crazy because the world will not implicitly follow their lead.

The truth is, the English garden is a rafter of the English household made up of good things from all parts of the world, and the pelargoniums of the Cape and the calceolarias of Peru are as worthy of a place in it as the lilies of the Levant or the fuchsias of the Falklands. People who enter upon gardening as a recreation are usually eclectic in their tastes, and are very quick in distinguishing good things from bad ones, and those who seek applause by crying up herbaceous weeds and crying down bedding plants that make the garden grandly gay

in the sunny months when gaiety is needed, will only obtain in the end the pitying smile that is bestowed on the well-meaning fanatic. The Rudbeckias illustrate this case. They are hardy herbaceous, handsome weedy things, that would be of priceless value were we possessed of only a few dozen sorts of garden flowers. But as we can command thousands we can afford to be dainty, and so it happens that two or three species of Rudbeckia are enough for any ordinary garden : the rest may be left over for those omnivorous ones who swallow everything that can be described as "herbaceous" and "hardy."

The genus to which our plant belongs takes its name from O. Rudbeck, a Swedish botanist. It is wholly American. It is noted in the "Hortus Kewensis" of Aiton that *R. laciniata* was grown by John Tradescant before 1640, and *R. triloba* by Jacob Bobart before 1699. These appear to have been the earliest introduced. *R. hirta*, the subject of the coloured plate, was grown in this country in 1714, and is pretty widely distributed, although the members of this genus have never ranked high as border flowers. They are, however, useful, being at home in any soil or situation, though preferring, if they can get it, a dry sandy loam and a sunny situation. They are all perennial plants, and may be propagated by division and seed. Being rough and gay and conspicuous at a distance, they are admirably adapted for the front line of the shrubbery, and if they do not delight the florists, they will gratify the artists, who always lean considerately towards single composite flowers, if there be some degree of dash in them, as there certainly is in the yellow and orange flowers of the Rudbeckias.

Rudbeckia Californica grows to the height of five feet,

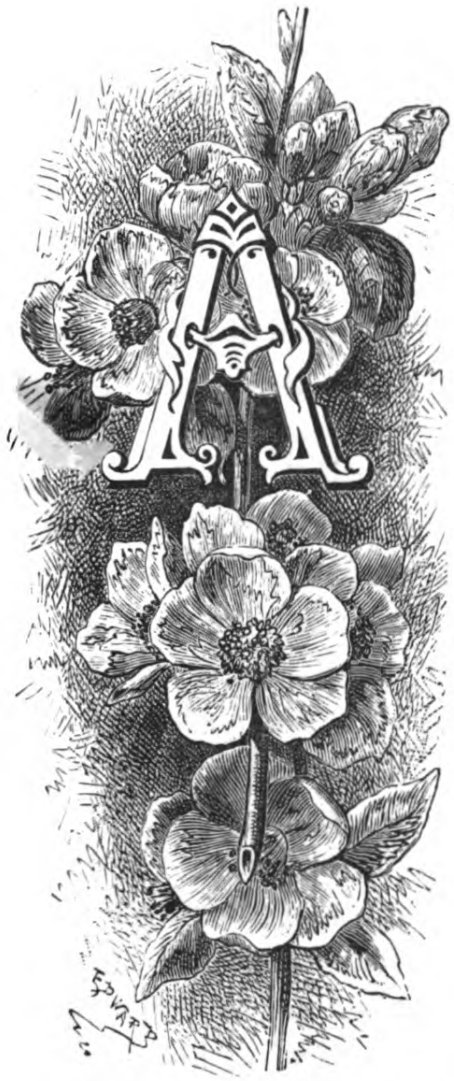
and flowers in July; the flowers are of a golden-yellow colour. *R. Drummondi* is of dwarf habit, rising only two feet, flowering from June to September, the flowers rich deep yellow with a band of purplish-brown and a curious brown centre; this is a fine plant. *R. fulgida* rises two feet; the flowers appear in July, they are orange-yellow, the disk purple; a fine plant. *R. hirta* grows two to three feet in height, the flowers appear from July to September; they are of a rich orange-yellow, the disk purplish-brown. *R. laciniata* is of compact habit, height three feet, flowers pale yellow, the leaves elegantly cut; a fine plant. *R. speciosa* is of medium growth, rarely exceeding two and a half feet in height; the flowers appear late, they are orange-yellow with blackish-purple disk. About a dozen more may be found by those who want them—at all events, their names may—but it might be difficult to obtain the plants.

The American continent is somewhat profusely sprinkled with composite plants that flower in the later summer and autumn, and prove perfectly hardy with us. We want the best of them for our gardens, and perhaps there are not many remaining to be introduced, for the botanists have not been idle on the "boundless prairies." It is the peculiar characteristic of a large majority of these plants that they flower at a season when our native plants are for the most part in a seedy state; and thus they help us through the autumn, when out-door pleasures obtain more of our attention than at any other time.

The botanist in whose honour the Rudbeckia was named by Linnæus was the son of John Rudbeck, a learned Swedish bishop, who aided very materially in the publication of the Swedish Bible, commonly called the

Bible of Gustavus Adolphus, in the year 1618, and was the author of the celebrated "Privilegia quædam Doctorum," the production of which, in the year 1636, very nearly proved his ruin. His son Olaf Rudbeck, born 1630, studied at Upsala, and in 1652 held a disputation there on the circulation of the blood, and afterwards made discoveries in anatomy which he rendered public in 1653. In this year he travelled into Holland, but soon after returned to Upsala, where he was, in the year 1658, appointed professor of medicine. As an aid in this study he had previously established a botanical garden, into which he introduced many rare plants from distant places, and thereby afforded an astonishing example of the capabilities of a northern climate.

JAPAN QUINCE.



THE JAPAN QUINCE.

Pyrus Japonica.

APPLES and pears and quinces are fully as interesting as things of beauty as they are as things to eat. But as ornamental trees it may be said their time has not yet come. Only the advanced horticulturist is aware of the exceeding beauty of *Malus floribunda* and *Pyrus spectabilis*, and we may venture to say there are dozens of trees of the same natural order equally hardy, equally beautiful, and equally unknown, though destined, we hope, to find a home ere long in many an English garden. The commonest of our orchard fruits are so beautiful when in flower, and also up to the time when the fruit is ripe, that we may very well excuse those who declare themselves content with the beauty of trees that are of undoubted usefulness, and which by their usefulness afford much gratification to the eyes of their possessors. Of the many ornamental species of pyrus that are known, the one before us is

certainly the most familiar, and it may be properly spoken of as a splendid garden tree. The name by which we bring it forward is perhaps "out of date." In modern books it is usually described as *Cydonia Japonica*, and occasionally as *Chœnómeles Japonica*. In days when county courts were administered by "commissioners," we heard a defendant repudiate a debt on the ground that his name was entered in the plaint incorrectly. "Oh!" said the presiding commissioner, "that is of no consequence; you will do; you owe the money, and you will have to pay it." And in the same way *Pyrus Japonica* will answer our purpose, for we are more concerned about its status in the garden than its name in the books.

Very soon after the "turn of the year" this handsome shrub produces its brilliant flowers. For that reason, although it is thoroughly hardy, it should be planted in a sheltered spot, and a dwarf wall suits it admirably. But it may be trained to a trellis, or to a few rough rods like an espalier; or, if it have the aid of a stake or two, it may be left without any training, and thus be allowed to form a free, informal, flowery bush.

The flowers appear before the leaves, and when the tree is in leaf there are sometimes to be found a few of the "quinces!" It is certainly not a fruitful tree, in the usual acceptance of the term; but old trees on warm walls will, in a dry hot summer, produce a few fruits, and these probably would make a good marmalade, or some other preserve. We say "probably," because we have never seen the fruit turned to any account, our own occasional crops having been given to friends as curiosities, when, perhaps, it would have been better to make the experiment of ascertaining their value as eatables. They are nearly

round, and about the size of a Tangerine orange; they ripen off a dull green colour, and are then very fragrant and as hard as flints. When cut up they are found to be packed with large dark pips, around which is a broad rim of flesh of a most uninviting character, the flavour being rough and styptic.

Within the past ten years a number of fine varieties of this pyrus have been brought into cultivation, but whether imported originally from Japan, or raised in Continental nurseries, we are not prepared to assert. But we *can* say that they are beautiful, and much to be desired as garden trees. They comprise scarlet, flesh-coloured, pink, mottled, and pure white flowers, one being semi-double, and all having the free-blooming habit of the crimson variety that may be regarded as the type. The best place, generally speaking, for these would be a warm dwarf wall; but they might be trained as cordons to make boundary lines, in a case where such things were needed, and of course as flowering shrubs for a trellis they would be equally interesting and beautiful.

This pyrus is like the rest of its family in requiring a good soil, a deep moist loam suiting it exactly. But it is not fastidious, and will generally thrive where any other crab or quince can hold its own.

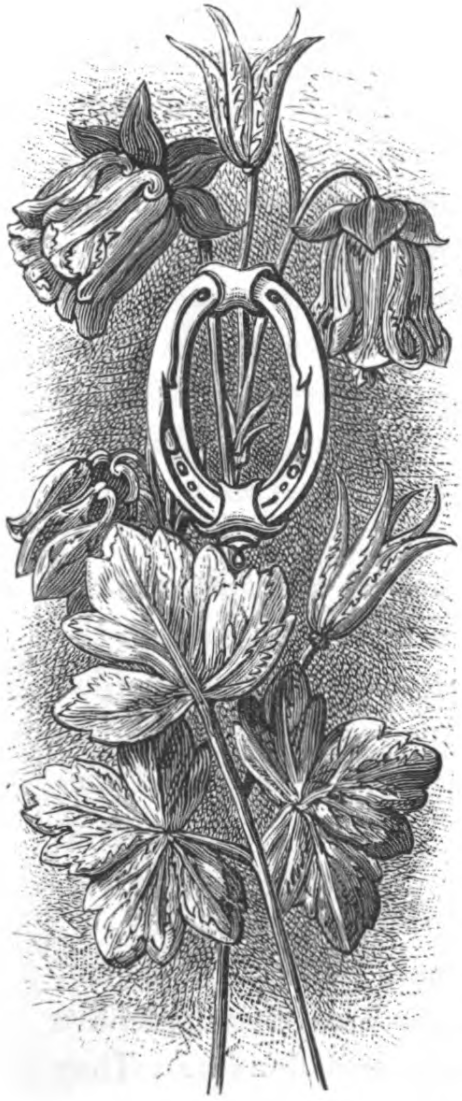
Having named *Pyrus spectabilis* and *Malus floribunda* as beautiful hardy trees, it may be well to add the names of other species that have similar claims to attention for their ornamental qualities. *Pyrus prunifolia* is the Siberian crab, a charming tree for the knoll or woodland, the fruits of which make a delicious preserve; *Pyrus coronaria* is the American crab; *Pyrus baccata* is the cherry crab. *Pyrus aria*, the white beam tree, is a splendid

object when its fruits are ripe. *Pyrus aucuparia* is the well-known "mountain ash," the exceeding beauty of which is never revealed near a town as it is in the country, and more especially on the margins of woods in mountainous districts.

Quince marmalade is one of the most delicious sweetmeats that may be inquired for in a country house. To prepare it is an easy matter, provided you have the quinces. They are to be pared, quartered, and the cores removed; then the fruit and the pips are to be put into a stewpan with a liberal allowance of loaf-sugar and a very little water, and kept boiling over a clear fire until the fruit is quite tender. It is then to be mashed with a spoon, and put into jars and tied down for use in the same way as any other preserve. About three-quarters of a pound of sugar to every pound of the fruit is usually enough, but equal weights of each are sometimes taken.

The common quince will thrive almost anywhere, but is well adapted to plant in a damp spot. It should never be pruned, but be left to grow in its own way.

COLUMBINE.



THE COLUMBINE.

Aquilegia vulgaris

ONCE more we have to discourse upon an "old-fashioned" garden flower that everybody knows and loves, and yet very few make it the subject of any special care in cultivation. It is astonishing how well it can take care of itself, as indeed do all the aquilegias, for they scatter their seeds freely and appear in all sorts of places, and it requires a rough hand and hard heart to root them out and call them "weeds." According to the derivation of the word from the Latin *columbina*, a columbine should bear a likeness in some way or other to a dove or pigeon. If there be any resemblance, however, it is of a round-about sort. The nectaries are rather peculiar, and may be likened to the heads of pigeons. The Latin name *aquilegia* means "like an eagle," and so in both languages the flower suggests the existence of a bird.

The common columbine is a British plant, by no

means common, though in a few places plentiful, its favourite haunts being woods and coppices. When grown in the garden border it scatters its seeds plentifully, and thus renews itself without any care. But fine flowers are not often obtained from the plants thus naturalised in the garden. There must be careful selection and good cultivation to insure the establishment of a good strain, and none but the best should ever be allowed to remain after the first flowers have been seen. The double kinds are certainly handsomer than the single, and as they do not produce seed, or at all events but little, they must be multiplied by division. Any good soil will suit them, and they bear partial shade without injury.

The economy of the reproduction of this flower is deserving of study. The nectaries, that may be likened to the heads of birds, secrete a syrup that appears to be needed to promote the growth of the stamens. These are produced in a series of circles which have been perfected successively from within outwards, each series changing from a recurved to an erect attitude to discharge its pollen, the result being a very abundant production of seed.

The hardy species of columbines that may be met with in gardens where choice plants are cherished have no place in the catalogue of "familiar" flowers. They are, however, extremely beautiful and intensely interesting. The most useful of all is the noble blue and white *Aquilegia glandulosa*, which rises to a foot in height, and produces a profusion of flowers. *Aquilegia cærulea* is the most beautiful of all, though it is certainly not showy; its large and singular flowers—blue and white, and tipped with green, and as it were twisted

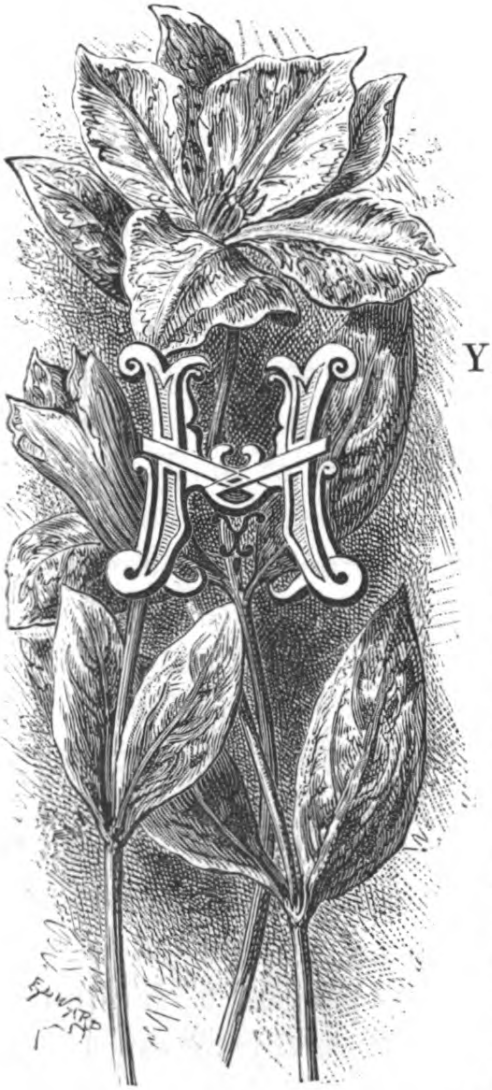
together—are rare and delicate, but make no appeal to the casual eye. The showiest of the series are *Aquilegia Skinneri*, a bold plant, rising a yard high, with red and yellow flowers; and *Aquilegia truncata*, about the same height, the flowers bright orange-scarlet. The Alpine columbine (*A. Alpina*) is a charming plant, the height about a foot, the flowers wholly blue, or with white centre. Although some of these are comparatively new, they belong properly to the "old-fashioned" class, and are of the kind Clare had in his mind when he wove a garland such as the heart will not willingly let die.

"The shining pansy, trimmed with golden lace;
The tall topped lark-heels, feathered thick with flowers;
The woodbine, climbing o'er the door in bowers;
The London tufts of many a mottled hue;
The pale pink pea, and monkshood darkly blue;
The white and purple gillyflowers, that stay
Lingering in blossom summer half away;
The single blood walls, of a luscious smell,
Old-fashioned flowers which housewives love so well;
The columbines, stone blue, or deep night brown,
Their honey-comb like blossoms hanging down;
Each cottage garden's fond adopted child,
Though heaths still claim them, where they yet grow wild;
With marjoram knots, sweet brier, and ribbon grass,
And lavender, the choice of every lass."

During the past two or three years a new and very welcome delight has been given to the flower-loving public in the exhibition of new varieties of columbines, by those eminent collectors and cultivators of rare plants, Messrs. Veitch and Son of Chelsea. At festival meetings of the Royal Horticultural and Royal Botanic Societies these new types have been presented in large groups, tastefully arranged, and have taken captive the eyes of many visitors, who

have found it hard to believe that such exquisitely beautiful subjects might be grown to perfection in any open garden with the aid of sunshine and fresh air. It is customary for the first agreeable impression of a new plant or flower to be accompanied by the thought that it must be of exotic production, requiring hothouse cultivation, and so of course these new aquilegias were regarded as rare and tender, whereas they may be grown by the thousand and the ten thousand from seed costing but a small sum, and what is called a "common garden border" will suffice for all their needs. The raiser of these charming varieties was Mr. James Douglas, the gardener at Loxford Hall.

PURPLE CLEMATIS.



THE PURPLE CLEMATIS.

Clematis rubro-violacea.

HYBRIDS of the more showy species of clematis are now so numerous as to constitute a distinct and large class of garden flowers. The parents of these many splendid varieties, of which *Clematis patens*, *C. lanuginosa*, *C. viticella*, and *C. Fortunei* may be named as having afforded the strongest characters, are for the most part traceable in them by the eye of an expert; but it happens that in a majority of instances the pedigrees have been preserved, and therefore a collection of clematis may be studied with advantage by the scientific botanist, as they may be by the lover of flowers, for the sake of their beauty only. The variety figured is one of the most interesting in the scientific and historical view of the subject. In the year 1835 Mr. Henderson, of the Pine Apple Nursery, London, raised a new hybrid, which was named in his honour *Clematis Hendersoni*. It was believed to be the result of a cross between *C. viticella* and *C. integrifolia*.

This "Henderson's clematis" is a fine climber, running ten to fifteen feet, and producing an abundant display of large handsome flowers of a purplish-blue colour. One of the grandest natural species (as distinguished from garden varieties) is *Clematis lanuginosa*. This produces flowers of immense size, the colour a soft lavender-blue or lilac-tinted grey, which is enriched with a tuft of reddish anthers. This plant does not flower so freely or so continuously as to satisfy the exigent florists, and the question has arisen, What can we do to improve it?

In the year 1858 Mr. George Jackman, of the Woking Nurseries, made an endeavour to meet that question, and extraordinary results have followed therefrom. He crossed *C. lanuginosa* with *C. Hendersoni*, and obtained two new and splendid varieties, producing flowers remarkable for their richness of colouring, their excessive profusion, and their long continuance. Rarely in the history of practical floriculture have we seen so great a triumph accomplished at one bound. The two new sorts were named respectively *C. Jackmanni* and *C. rubro-violacea*. The first-named is certainly one of the most popular garden flowers known. The other, of which we present a faithful portrait, is less popular, but not less worthy of esteem; for its flowers are exquisitely coloured and lustrous, and are produced in the most prodigal profusion—in fact, a verandah well clothed with this clematis will present during the later summer months a display of colour of the most surprising and delightful character.

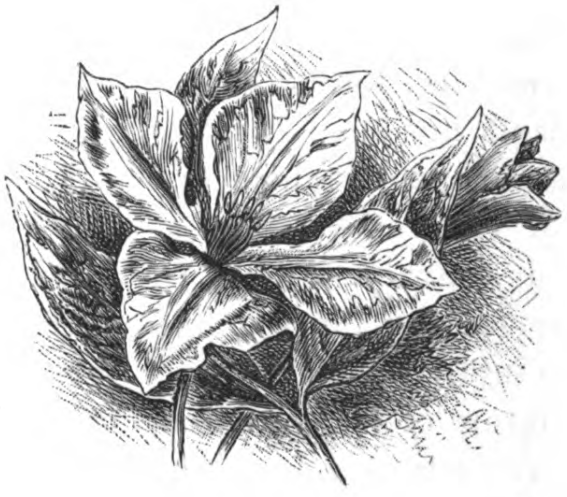
These two varieties have in their turn produced innumerable seedlings; and from other crosses, effected by various cultivators, there have been secured valuable additions to the list of garden forms of this hardy and

useful flower. The free-growing sorts are amenable to the simplest treatment; but it should be said that they flower so freely that they must be well fed, or they will actually die out and give no account of themselves at all. They should be planted in well-prepared soil, consisting of good loam, liberally enriched with half-rotten manure—in fact, such a bed as would be prepared for climbing roses or wistarias; for plants that grow fast and far need to be well sustained at the root. These clematis, being planted in the spring, will probably run ten or twelve feet the same season, and will flower fairly well. The second year they will make a most vigorous growth and flower profusely. The third year they may be expected to do still greater things, and *then* they must have fresh food, or they will begin to travel down hill. If left alone they will still flower freely; but the flowers will become smaller year by year, and the plants will be bare of leaves except at the top. If still left without help they will dwindle away, and die at last through sheer exhaustion, unless indeed they happen to be peculiarly circumstanced as regards the food their roots can reach.

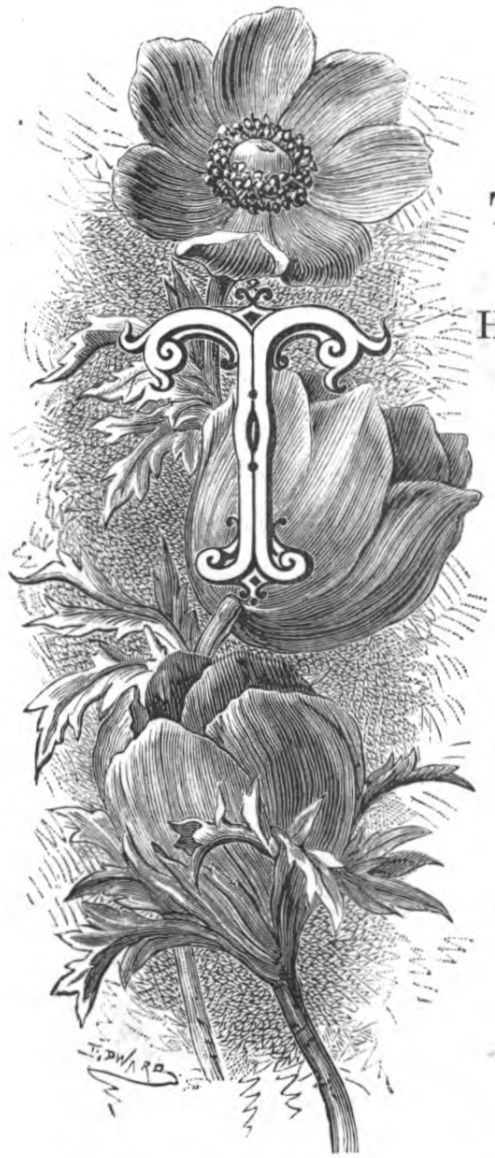
Thus we reach the second chapter in the management. When the plants are becoming "leggy" and the flowers small, they should be cut down to within eighteen inches of the ground. This may be best done at the end of the year, or early in January. Some time in February, or early in March, remove the top soil from over the roots, but taking care to injure them as little as possible, and put in its place a mixture of half-rotten manure and fresh turfy loam; at the same time take out a trench two feet deep and one foot wide at a distance of two feet from the stem of each, and fill this with a similar mixture. Then spread

over all a coat of fat stable manure, and leave the rest to nature, and you will be well rewarded in due time.

It is a matter of interest that hybrid clematis may be grown in beds, and in this case require to be trained over hoops to form a low convex shield-shaped mass of green leaves and gorgeous flowers. For this purpose the best are *Jackmanni*, with violet-purple flowers; *Rubro-violacea*, with maroon-purple flowers; *Alexandra*, reddish-violet; *Magnifica*, purple and red; *Rubella*, deep claret; *Star of India*, reddish-plum with red stripe; *Tunbridgense*, reddish-lilac with mauve stripe. Another use for them is as pillar plants, both in the garden and the conservatory; but when so grown out of doors, measures must be taken to prevent birds lodging on the tops of the pillars: sharp spikes will generally accomplish the purpose. Finally, when grown as round-headed bushes in tubs and pots they are superb adornments for the conservatory, the entrance hall, and the public exhibition.



POPPY-ANEMONE.



THE POPPY ANEMONE.

Anemone coronaria.

THE familiar name of this fine border flower is admirably descriptive, especially for the large crimson and scarlet varieties with black centres that very closely resemble poppies, but show themselves six weeks or more in advance of any true poppy either in field or garden. And the flower is not far removed from the poppy in its essential characters, although in the books the dillenias, the magnolias, the berberries, and the water-lilies come between them. In his "Vegetable Kingdom," Dr. Lindley, speaking of the order of poppies, says:—"The greatest affinities are with the crowfoots, from which it is sometimes extremely difficult to know this order without ascertaining that the juice is milky and narcotic." All the crowfoots, comprising the ranunculus, anemone, clematis, hellebore, and aconite, have watery and acrid juices, while the poppies are characterised by milky and narcotic juices.

Garden anemones may be readily separated into two classes. In one class we have the poppy anemones (*A. coronaria*), natives of the mysterious country called the Levant, as also of many regions that fringe the Mediterranean on its very irregular northern boundaries. In the other class we have the star anemones (*A. hortensis*), in which occurs that splendour of the spring garden, *Anemone fulgens*, a very fiery star, and one that never fails to surprise us when we see its first flowers in the forward spring. These are garden anemones *par excellence*, and one cannot have too many of them if life is to be made endurable in these hyperborean regions. As for other anemones, their name is not legion; but there are many that may properly demand a place in the rockery, and, while the opportunity occurs, it may be proper to offer the reader a list of the "indispensables." *Anemone Alpina* comes near to *A. coronaria;* the flowers are white and sulphur-yellow, growth vigorous. *Anemone angulosa* is our sweet old friend the blue hepatica; plant it anywhere on rockery or border, and take care not to disturb it for at least ten years. *Anemone apennina*, a lovely starry blue flower that appears at the same time as the early daffodils. *Anemone hepatica*, the common hepatica, with flowers of many colours; it requires a deep, strong, loamy soil, and to be left alone, for if moved often there will soon come a time when there remains nothing to move. *Anemone Japonica*, of which there are two varieties, the red and the white, both grand border plants for autumn flowering. *Anemone nemorosa* is our own wild wood anemone, one of the loveliest flowers in the whole world. The double variety makes an exquisitely beautiful rock plant. Have as many more as you like, but you must have the foregoing,

because they are distinct and good; but the word "good" is very poor in this connection. The anemone now before us is a "florist's flower," consequently you may, if you choose, form a collection to name; and time was when the named sorts realised prices running into gold, and at least two figures. But times are changed, and it is no longer necessary to have a deep purse to enjoy fine flowers.

The poppy or garland anemone appears to have been introduced in 1596, just in time to be included and faithfully figured in Johnson's Gerarde and other of the grand old books on floriculture. Parkinson enumerates sixty sorts of anemones, but these include plants that are far removed from *A. coronaria*. Mr. Carey Tysoe, of Wallingford, published some twenty-five years ago a treatise on this flower, with a list of the best varieties; and this must be regarded as the latest authentic work on the subject from the florists' point of view.

The poppy anemone varies in colour immensely, but its structural characters are constant. Experience has taught the writer exactly why the named varieties are not much cared for, and it is that seedlings can be easily raised, and will give abundant variety and fine quality, provided only that the seed is taken from first-class flowers. Now here comes in the argument for the florists' named sorts, however costly. In the subject now under consideration the cost is of no consequence, because named anemones are extremely cheap. But as florists' flowers are now much decried by people who know nothing about them, we feel bound to say that they serve the purpose of thorough-bred horses in stud stables, and of Duchess Shorthorns, and pedigree Jerseys, and Jonas Webb's fleecy lords of the flock. To the amateur who would

raise a nice lot of poppy anemones our advice is, begin with a collection of named varieties, save seed from these, and *then* go on gradually improving your specimens.

This anemone requires a rich, deep, well-drained, loamy soil. When raised from seed, sow in large pans or boxes in February, using rich, light soil, and place the seed-pans on a gentle hotbed. As the season advances give them more and more air, and let them finish their growth in full exposure. In September plant the roots in beds of light, rich loam in an open place, and wait for the result. It will gladden you in any case—it may even surprise you. When the leaves die, lift the roots, store them in paper bags or in boxes with dry sand, and every year plant in September, and every year raise a fresh batch of seedlings.

GLADIOLUS.

THE GLADIOLUS.

Gladiolus gandavensis.

IT is a mere compliance with custom to label this flower *Gladiolus gandavensis*, for that is the name of an early hybrid between *G. cardinalis* and *G. psittacinus*, raised many years ago in a Belgian garden. But it is scarcely worth while to discuss technicalities or draw fine lines, and we prefer to talk about the gladiolus as a beauty to be wooed in the pleasant days of the after-summer.

The florist's varieties constitute a large and separate class, and are usually designated "hybrids of gandavensis," although they owe their origin to several species and to many and repeated crossings. To grow these well requires some care; but they are worthy of all attention, so various and splendid are their flowers. In the first place, then, it must be said that they are not hardy, and therefore it will not do to leave them in the ground all the winter. We have

tried this many times, and although many roots survived the ordeal, they were rendered worthless by it. Nor is it well to plant them in February or March, as advised in some of the books; for if the spring is wet and cold they rot in the ground, and if it is dry and warm they grow too soon, and their tender green tops are liable to be cut off by frost in April and May. Keep the corms or roots in sand, in a dry, cool place, until about the middle of March, and then pot them singly in thumb-pots, or in three-inch pots at the utmost. First cover the hole in the pot with a convex potsherd, hollow side downwards, or with two or three small pieces of coke or cinder. Then put in compost to the depth of about two inches; on this place the corm, and fill in, and press a little firm all round, and finally cover to within a quarter of an inch of the rim of the pot. The compost may, with advantage, consist of equal parts of mellow loam, leaf-mould, very old rotten hotbed soil, and silver-sand. But this precise formula need not be followed, because any light compost will answer the purpose, if sweet and nourishing. Pack the pots in a frame, or under the stage of a greenhouse, give them one watering, and leave them untouched for a fortnight at least. By that time, probably, the growth will be spearing through. In such case they must have light and air, and a very suitable place for them will be the stage of a cool greenhouse, or to continue in the frame, and to have regular attention in respect of watering and air-giving. Be careful to avoid extremes. Keen east winds, sharp frost, very much moisture, continued cold and damp, are all more or less to be feared as dangerous. It is but little they will require; the matter of main importance is to keep a watch on them.

You must now prepare for planting out. The bed should be in an open, sunny, though sheltered situation, and the soil should be deep and mellow, and rich in humus. A heavy, pasty, or lumpy soil will not do. Gladioli will grow finely in peat, and still more finely in a hazelly loam, continuing abundance of rotted turf, and a moderate amount of old hotbed soil. Many natural soils which may be described as sandy loam will grow them well without any aid whatever; but we have noticed that the most successful growers prepare the ground with care, and put in a pretty liberal dressing of well-rotted farm-yard manure.

The best time to plant out is just when the pots are full of roots, and will turn out without breaking. Then make your plantation, and if the weather be dry give water every evening for a week, after which discontinue watering for a week or so, unless the weather sets in unusually dry and hot, in which case the water-pot must be kept going. In a run of ten years, during which we flowered all the varieties, we managed to do well without often resorting to the water-pot. We had our plants nicely rooted in small pots, and put them out in showery weather, and did little more for them than to keep the ground clear of weeds and afford aid as required in staking and tying; and the bloom was always of good average quality, and sometimes more than that.

In respect of taking up the corms, it is very important to remark that you may incur serious loss by waiting until the leaves die down, for in a mild, moist autumn they will keep green until near Christmas; meanwhile, perhaps, the roots, being moist when they ought to be dry, become diseased, and this is manifested in the next season in

various unpleasant ways. Therefore, when there comes over the plantation a certain amount of yellowness, and the leaves look as if they would die if they could, and are only prevented by reason of the "growing weather," hesitate no longer, but lift them, and lay them in lots of a sort in a dry shed, with as much earth about them as adheres naturally, and in the course of a week afterwards clean them by removing leaves and roots, and store in sand.

It is a delightful task to raise gladioli from seeds. To obtain the seeds is an easy matter, but artificial fertilisation should be practised to render the work complete. Sow the seed in spring in shallow pans, which should be placed in a moderate heat. When the grass appears, give air cautiously; and when the season is sufficiently advanced, place them out of doors, and let them finish the first season's growth in the seed-pans. Put these away untouched in a dry place for the winter. In the month of March following sift the soil and separate the corms, and plant these in pans, and treat them as described above for the flowering corms. At the end of May plant them out.

BROWALLIA.

THE BROWALLIA.

Browallia elata.

DO not little things possess a special value of their own, as great or even exceeding the value of larger things? Pearls, rubies, emeralds, diamonds, and forget-me-nots, for instance, which are certainly small as compared with cabbages, cauliflowers, and pumpkins. And having mentioned forget-me-nots, we are tempted to speak of this Browallia as the American, or more properly, perhaps, the Occidental forget-me-not, for it comes from the tropical parts of the western continent, which nobody ever thinks of when America is mentioned, the northern parts thereof having a monopoly of our attention. There is another and nearly allied species called *B. demissa*, but it is not much grown, for the simple reason that it is not so good a plant as *elata*, of which there are two varieties—the blue, which is here figured, and the white, which differs only in the colour of the flowers.

To grow this pretty annual it is necessary to sow the

seed in light, rich soil in the month of March, and put the pan containing the seeds on a mild hotbed or in a warm greenhouse. When the plants are somewhat forward they should be pricked out into pans or pots, and have another term of culture in a warm house, and having been hardened by careful exposure to the air, be planted out where they are to flower. The rough treatment that suits some half-hardy annuals will simply fail to produce a fair bloom of this pretty plant, for it requires a long season of growth before flowering, and is decidedly tender in constitution. When well grown, however, it is replete with refined beauty, owing to the profusion and delicacy of its tiny slaty-blue flowers, and so we recommend the diligent amateur who can care for little things to grow a few nice specimens in pots. Having raised the plants on a moderate hotbed, prick them out to strengthen as already advised, and instead of planting them out to flower, put them in eight-inch pots, about four plants to a pot, using rich, light soil, and grow them on in the greenhouse, training them up with care, and keeping them near the glass and well ventilated.

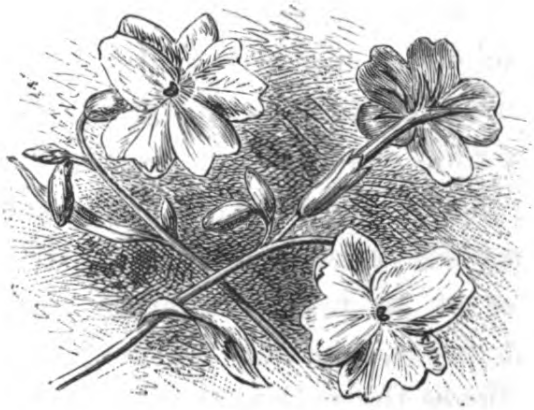
The elegant *Schizanthus pinnatus*, *S. porrigens*, *S. Grahami*, and *S. retusus* are closely allied to the Browallia, and may be grown in the same way, but are less in need of heat, as they are hardier. At all events, the two first-named are hardy enough to be sown on the open border, but are good enough to repay the trouble of growing them well in pots, for they make most charming specimens; and the better if sown in autumn, so as to have a long season of growth before flowering.

These flowers belong to the important order *Scrophularineæ*, in which we find not only the Browallia and schizanthus, but the calceolaria, verbascum, antirrhinum,

the pentstemon, and the mimulus, with many more garden favourites that to the casual eye have but few traces of a family likeness.

The Browallia was so named by Linnæus in remembrance of J. Browallius, Bishop of Abo, which was formerly the seat of government in Swedish Finland, and still is the seat of a Lutheran archbishopric, although now it is a Russian and not a Swedish city, having passed over with the whole of Finland at the peace of Frederickshamm in 1809. Finland was a botanical playground to Linnæus, and its capital Abo was to him the most important, because it was the nearest centre of learning and liberal thought. Commemorative names of plants are in many respects objectionable, but there is something to be said in their favour, and in any case the names that Linnæus bestowed on plants "the world will not willingly let die." Of one flower in particular may this be said, for the delicate two-flowered Linnæa, the *Linnœa borealis* of the botanist, he named after himself. It is a humble creeping shrub of the cold morasses of the north, producing exquisitely beautiful though unattractive miniature bell-flowers in pairs. The great botanist, remembering his own humble origin, and conscious of a merit that then had not been generally recognised, chose this flower for the emblem of his own career, and described it as "a little northern plant, flowering early, depressed, abject, and long overlooked." It may not be too wide a departure from the course set before us to remark that in those few words we have a great poem, wanting neither verse, nor rhyme, nor music to indicate the pathos that cannot be concealed. Linnæus was indeed a poet, though he was and is properly ranked among the soldiers of science.

The Browallias may be advantageously employed to embellish the greenhouse and conservatory during the summer. For this purpose we have not so great a variety of flowers as may appear from a casual consideration of the subject, because a large proportion of decorative plants thrive so much better when planted out than when kept in pots and flowered under glass. These little tropical forget-me-nots enjoy the shelter and comparatively uniform temperature of the greenhouse during the summer, and in places where the climate is usually unfavourable to tender plants in the open ground it is advisable not to plant them out, but to grow fine pot specimens for flowering in-doors. Then it will be found that the two varieties of *B. elata*, giving flowers white and blue; with *B. pulchella*, with flowers rosy purple; *B. grandiflora*, with flowers yellow; and *B. Jamesoni*, with flowers orange—will make an interesting collection. Associate with them a few fine pot specimens of the delicate schizanthus, and the conservatory will not lack interest and beauty.



HONEYSUCKLE.

THE HONEYSUCKLE.

Lonicera caprifolium.

EVERY plant has its place, as every dog has its day, and the very place for this honeysuckle is the wall of a comfortable English cottage, whereon it appears more at home than anywhere else in all the world, not forgetting the woods in the south of Europe, wherein it plays the reveller, and perfumes the breeze. We call it British, and may find it occasionally in a wild state; but it is a doubtful native, although well adapted for naturalisation in woods and thickets and the wilder parts of garden scenes. The smaller and ever-welcome woodbine (*Lonicera periclymenum*) is beyond doubt indigenous, and is one of the most widely-diffused of our woodland vines, and worthy of its renown in song and story. Titania, addressing the ridiculous weaver of Athens, says:—

> "I will wind thee in my arms.
> So doth the woodbine the sweet honeysuckle
> Gently entwist."

But this passage, perhaps, we should not have quoted, because of the grave question arising out of the distinction implied between the "woodbine" and the "sweet honeysuckle." However, we will meet the difficulty, because it is one of great interest. The explanation is that there is in English poetry more than one woodbine, but there is only one honeysuckle. The woodbine of Shakespeare was, in all probability, the convolvulus. Gifford pointed out the true meaning of the passage in his note upon a parallel passage in Ben Jonson :—

> "Behold
> How the blue bindweed doth itself enfold
> With honeysuckle, and both these entwine
> Themselves with briony and jessamine."

Readers of the "divine bard" may remember that a certain hostess (2 "King Henry IV.," ii. 1) denounces the mighty Falstaff as a "honeysuckle villain" and a "honeyseed rogue," by which, perhaps, we may understand that she thought his fair words and winning ways made him doubly dangerous as a creditor and a cheat. It is agreeable to turn from the theatrical weaver and the stout knight to the invitation of Hero in "Much Ado about Nothing" (iii. 1) to

> "Steal into the pleachèd bower,
> Where honeysuckles, ripen'd by the sun,
> Forbid the sun to enter; like favourites
> Made proud by princes, that advance their pride
> Against that power that bred it."

Now to turn from poetry to the garden itself. There are from eighty to a hundred species of Lonicera adapted for the English garden, but only half a dozen or so have hitherto obtained much attention. The peculiar "perfoliate" character of *L. caprifolium* is displayed in the illus-

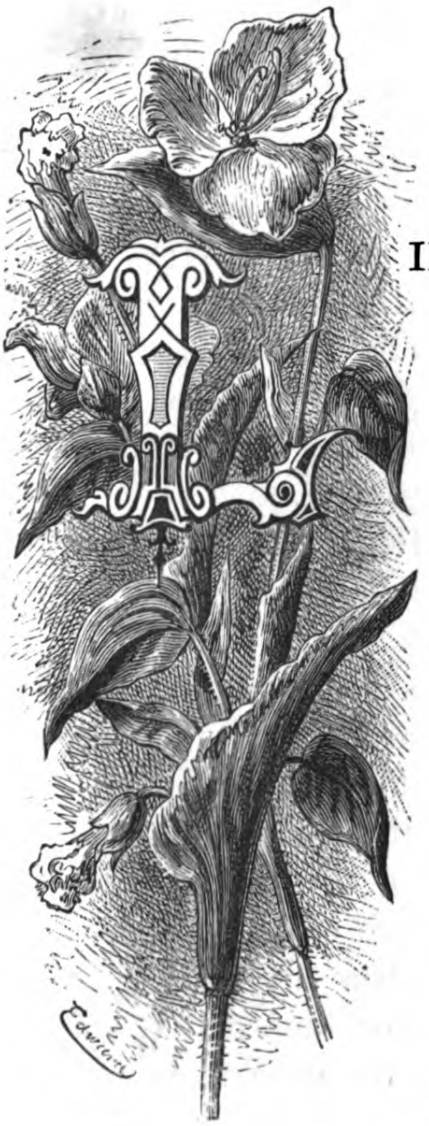
tration, this style of leafage being called by the botanists "connate." Of the common *L. periclymenum* there are several varieties known—Dutch, Belgian, oak-leaved, late-red, &c., all of which have some degree of special merit; but the variegated-leaved variety is worthless. One of the very best for a good place in the garden is *L. sempervirens*, the trumpet honeysuckle, an American species, with bold heads of scarlet flowers, which are inodorous. Under the name *Lonicera brachypoda* we may group half a dozen garden varieties, such as *L. Chinensis* and *L. Japonica;* and here we find one of the most beautiful of the family in that called *Aureo-reticulata*, which is exquisitely rich in its leafage, and well worth attentive observation. It will be noticed that at one time the leaves are lobed like those of the oak-tree, and at another time they are simply ovate or elliptical, without lobes, for they alter in form as they grow, and they are always richly painted with bright-green lines on a ground of gold-yellow or full deep orange, which acquires rich tinges of red when the chills of autumn check the growth. Wherever this plant can be accommodated with a trellis, or can be carried by an arch over a walk, or have careful training up a wall to a height of ten to twenty feet, it should be allowed "a chance." It will grow grandly and flower sweetly, and if it happens to be the only plant of Japan you possess, it will compel you to cherish agreeable thoughts of that interesting country, from which we have derived a very large proportion of our most valued garden flowers.

The winter-flowering honeysuckle (*L. fragrantissima*) is an extremely useful but altogether unattractive shrub. It grows in a style similar to a lilac, and does not climb or riot at all. Its light green leafage is agreeable in summer;

in fact, it is quite a respectable border shrub. But its best quality is its production very early in the year—even in January if the winter be a mild one—of an abundance of small white flowers that are very sweet-scented.

The genus Lonicera is named in honour of Adam Lonicer, a physician and naturalist, born at Marpurg in 1528. He studied at Mentz, took the degree of doctor in 1554, and soon after settled at Frankfort, where he practised as a physician. He wrote many books, but one only appears to have acquired a lasting renown; this is the "Naturalis Historiæ Opus novum," in two parts, first published in 1551 and 1555. In the second part there is much curious information about plants, and particularly those that grow near Frankfort; and it contains a list of plants in various languages to which the student of botanical terminology may refer with advantage.

COMMELINA.



THE COMMELINA.

Commelina cælestis.

LIKES and dislikes, as regards flowers and plants, are not very easy to explain, and we shall not now attempt to say why it is that many people dislike the Commelina and the Tradescantia and the rest of the "spiderworts." However, it may not be improper to remark that in proportion as taste is influenced by knowledge it becomes universal. Large-minded and generous-hearted people discover beauties and points of peculiar interest in all the works of nature, and we may reasonably expect to find the wise ones of this generation unencumbered with prejudices in their observation of the wonders that spring up around them.

The Commelina takes its name from the Dutch botanists, J. and G. Commelin, whom it thus keeps in remembrance, just as its near ally, the Tradescantia, is named after John Tradescant, gardener to Charles I., a man who contributed in an eminent degree to advance the botany

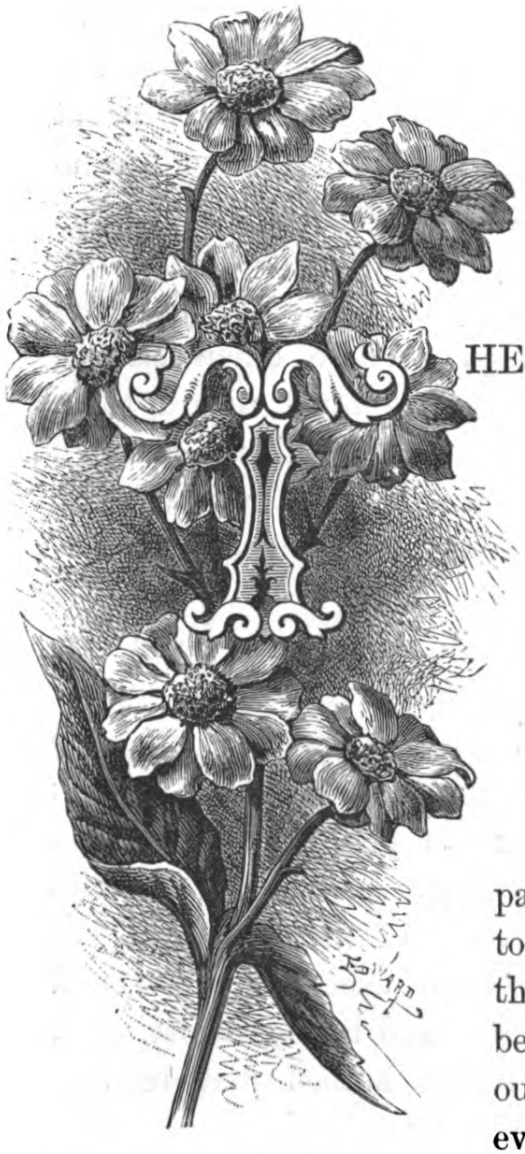
and horticulture of his day, which were not altogether favourable to science. The genus has a wide geographical range, but a majority of the species are American. The plant figured is the best known of all, and is certainly a very charming subject for pot or border culture. Although a perennial, it may be grown as an annual by sowing the seeds in heat and nursing the plants under glass until May, when they should be carefully hardened by gradual exposure to the free air, and be planted out towards the end of the month. The tuberous roots may be preserved in the same way as dahlia roots, but should never be quite dry; the best way to keep them is to take them up early in October, and, having removed the stems, pack them in moist sand in a large flower-pot, and put this under the greenhouse stage where no damp will reach it, for if the roots get wet in winter they will rot. As it is such an easy matter to raise a stock from seed, there is no great inducement to keep the roots. Nevertheless, they are useful to the cultivator who cannot conveniently raise early seedlings, because he may sow the seed in the open border at the end of May and take up good roots in October, and by keeping these make sure of a good bloom in the season following. If the tubers are planted at the end of May they will begin to grow immediately and make fine plants; but a better way is to start them into growth in pots in a frame or greenhouse first, and defer planting until the early part of June. Supposing there is no need to save the roots, they may still be turned to account; when boiled in salt and water and served with white sauce they constitute an agreeable table vegetable, and thus the flower garden may in this respect be made subservient to the dinner table.

All the species of Commelina require a light, rich soil and a sunny situation, but they will bear a certain amount of shade. There are a few hardy species with blue flowers, the best of which are *C. erecta*, *C. fasciculata*, and *C. Virginica;* but these are only known in botanic gardens, and the amateur will in most cases have to content himself with the charming blue-flowered plant which is the subject of the accompanying figure, and its two beautiful varieties. One of these (*Commelina cælestis alba*) has white flowers, and the other (*C. cælestis variegata*) has variegated leaves.

The Virginian spiderwort (*Tradescantia Virginica*) is a capital border plant, for it will grow in almost any soil, and gives plenty of flowers all the summer through. We have had it thriving amazingly in a wet clay, the varieties being at least a dozen in number, and we have seen it scarcely less happy in old worn-out garden loam or sandy peat. The deep violet blue, which is considered the typical form, is extremely beautiful in the contrast of its golden anthers with the violet satin of its petals. The white variety also is extremely beautiful. Those who want more than these two will have no difficulty in obtaining the blue and white, the double blue, the single red, and the single blue. They have but to be planted and left alone, and they will do their duty. They are not out of place on a rockery, but are not good enough for a really choice rockery, for, though curious and beautiful, there is a weedy and common tone about them, and a rockery must be extensive to admit such things. Propagation is best effected by division in spring, and those who are unaccustomed to propagate plants may be advised to avoid minute division, being content to divide a clump into two or three good-sized pieces rather than make of it as many as possible.

The best figure of the plant that we have met with in any botanical work is in Sweet's "British Flower Garden" (*t.* 3). It is also figured in the *Botanical Magazine* (*t.* 1659) as *C. tuberosa,* which Sweet regards as a mistake; for, he says, this has "smooth leaves and hairy peduncles, whereas *C. tuberosa* has hairy leaves and smooth peduncles." The very broad views that now prevail in respect of the characters of species would sanction the opinion that these two "species" are but two forms of the same plant; but we must not encumber these pages with the heavy arguments that might be needful to establish exact identity. Certain it is that "species" are now more boldly separated than in the days of Sweet and Herbert and Haworth. After all, more depends perhaps on words than ideas—that is, in respect of these verbal distinctions. What one regards as a species, another may regard as a mere variety, and the difference of terminology will not matter much in the end, provided all behold the truth as nature presents it to our notice.

CINERARIA.



THE CINERARIA.

Cineraria cruenta

THE origin of the cinerarias, that are so highly esteemed by the florists, cannot be determined with certainty, but their prevailing characteristics point to *C. cruenta* as undoubtedly one of the parents, and *C. populifolia* is probably another. It matters little to the amateur florist, perhaps, what was the particular wilding that gave rise to a race so well established as the one represented in the figure before us, but the parentage of our pets should be traced in every instance if possible, for when we would make "a new departure" in cross-breeding, it is of primary importance to know something of the lineage of the plants whose characters we propose to change.

The cineraria is a tender plant, and a troublesome plant, and a plant that often disappoints the experts; therefore it is bound sometimes to disappoint the beginner

in floriculture. It is not particularly tender, and really will not endure a high temperature for any length of time. On the other hand, frost, damp, a cold wind, a dry air, or long-continued sunshine may prove fatal to it, or at least injurious. Its wants are few, but it can endure no extremes; and, when the circumstances are unfavourable, it becomes infested with green-fly, or red-spider, or thrips, or mildew, or some other plague, or it simply dies, and tells no tale of the reason why. Where cinerarias are seen in good condition, therefore, we must regard them as representing careful, if not skilful cultivation, for a blunderer will never do any good with them, nor will one that is inconstant or impatient, or too trustful in rough-and-ready methods.

The best cinerarias are grown in cold frames, or in pits heated only to a sufficient point to keep out frost. They should never be placed on wooden stages, or in large houses, except when in flower and required for display; all the growing should be done in pits or frames on a groundwork of clean coal-ashes or gravel, and at all times the plants should have abundance of air and light, but be protected from frost and from excessively powerful sunshine. The soil should be rich and light, consisting of turfy loam, leaf-mould, very rotten hotbed manure, and sharp sand, the turfy loam always predominating. The compost should be prepared long before it is needed, and should be several times turned and mixed, to free it from vermin, and render it perfectly sweet and mellow. It should be broken down to a fine texture, but should not be sifted—in fact, as a rule, sifted soil is worthless.

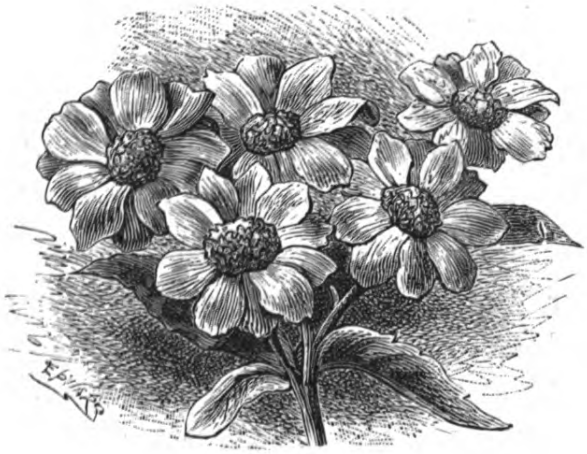
The cineraria is increased by seeds and offsets. For all ordinary purposes seeds are to be preferred, and it is

therefore advisable to destroy all the plants that have served their purpose as decorative objects. The seed should be sown as soon as ripe, or as soon after as possible. It will, however, keep to the following spring, but after a year has passed from the time of gathering it is worthless. It should be sown in shallow pans filled with light, sandy soil, and should be very slightly covered. In places where great numbers of cinerarias are grown to produce seed for sale, no trouble is taken to sow seeds for ordinary stock. The handsome plants are kept in pits on a flooring of clean coal-ashes, and in the course of gathering the seed, a certain quantity falls, or is blown about and lost for a season. But the loss is soon compensated for by the appearance of innumerable seedling plants on the ground amongst the pots, and these are lifted when large enough, and then receive the needful care to render them worthy to maintain the stock.

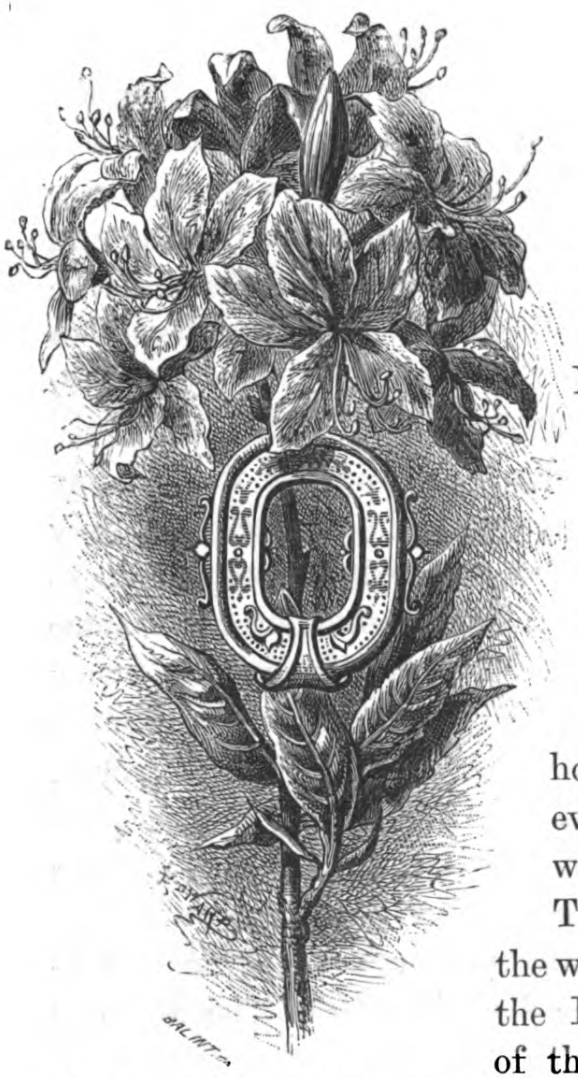
When offsets are wanted, the flower-stems must be cut down, and the plants must be put out-of-doors and taken care of; and when the offsets appear they must be carefully removed, and should have the same kind of nursing as seedling plants. We have obtained offsets in great plenty by planting the selected specimens in beds of light, rich soil, in an airy pit. They are turned out without damage, and the fresh soil promotes production of offsets.

The magnificent specimen plants that are seen at the spring flower shows are invariably grown from offsets. There are, at least, two reasons for this course of procedure. In the first place the grower knows what sort of flowers he will have, and may select according to taste and knowledge; whereas when we grow seedling plants we do not know what the flowers will be until they actually appear.

Another reason is that offsets make better plants than seedlings. They are more compact in growth, and produce more even heads of bloom. And there is yet a third reason for preferring offsets for specimen culture: it is that three of them may be placed in one pot to present the appearance of one plant, a thing impossible—or at all events ludicrous—in the case of seedlings, because when the head of bloom is produced, it should be of one kind in every separate specimen. The usual practice is to pot the offsets singly into small pots, and when they have become well rooted, they are transferred in threes to five-inch pots, and in due time shifted from these to the larger pots in which they are to flower. Great care must be taken to keep all the sorts correctly labelled, when this system of potting them in threes is practised; for if more than one sort is used to make up a group of three, the specimen will be useless for exhibition. It must be repeated, however, that for all ordinary purposes it is best to grow cinerarias from seed, and care must be taken to secure seed of the best quality.



PONTIC AZALIA.



THE PONTIC AZALEA.

Azalea Pontica.

ONE of the many striking incidents of the retreat of the ten thousand, as told by Xenophon in his "Anabasis," is that of the poisoning of many of the soldiers who had eaten of honey in the neighbourhood of Trebizonde. The event occurred soon after that wondrous cry, "Thalatta! Thalatta!" which arose from the weary host at the first sight of the Euxine under the guidance of the servant of the Governor of Gymnias, and it heightens the dramatic effect of the situation. The Colchians had refused them permission to pass through their country, and Xenophon had said, "These alone stand between us and our native land; let us eat them alive." Then the Colchians learned somewhat of the Greek manner of fighting, and they fled in dismay, leaving the soldiers masters of their deserted villages. Then occurred the last of their adventures, which is thus

described by Sir Alexander Grant in the volume on Xenophon, contributed to Blackwood's "Ancient Classics" —"It consisted in their finding a quantity of bee-hives, from which they ate the honey abundantly. But the honey was of a kind common to this day in Asia Minor, made from a species of rhododendron, or from the common rose laurel (*Nerium oleander*), and having intoxicating and poisonous qualities. From the effects of this honey large numbers of the soldiers fell stupefied or maddened to the ground, and for two or three days they were *hors de combat*, but at the end of that time all recovered."

Remarking on this occurrence, the author of the essay on the "Honey Bee," reprinted from the *Quarterly Review*, says:—"The soldiers suffered in proportion to the quantity they had eaten: some seemed drunken, some mad, and some all but died. This quality in the honey has been referred by Pliny and others to the poisonous nature of the rhododendron which abounds in those parts; but from inquiries which we have made at Dropmore, and other spots abounding with this shrub, we cannot learn that any difference is perceived in the honey of those districts, or, indeed, that the common bee is ever seen to settle on its flowers. If the *Kalmia latifolia* be a native of Pontus, the danger is more likely to have arisen from that source, the honey derived from which has been known to prove fatal in several instances in America."

It is pretty generally agreed, both by scholars and naturalists, that the plant from which the poisonous honey was derived was the one now before us, the Pontic azalea; but Sir A. Grant's suggestion of the oleander is reasonable, while the suggestion of the *Kalmia*, in the second of the above quotations, is unreasonable, because the plant is

unknown to the old world. It will not be expected that any attempt should be made in these pages to solve a problem that has perplexed the learned. But having failed to find any traces of poison in honey gathered in districts where rhododendrons and azaleas abound, we have sometimes considered it as not improbable that the Colchians poisoned their wells before they abandoned their villages, and that thus the usually exact writer of the "Anabasis" may have been mistaken. The eating of honey promotes thirst, and honey eaten in haste, and in excess, would prove dangerous without the aid of poison. But if we accept Xenophon's statement without any qualification, then we incline to the opinion that the azalea was not the offending plant, but the more decidedly dangerous *Nerium oleander*.

The azaleas that are represented by *A. Pontica* are of the greatest value in the English garden, being perfectly hardy, immensely showy when in flower, and peculiarly pleasing when their leaves acquire the ruddy tints of autumn previous to their fall. They are often mixed with rhododendrons, but usually that mode of disposing of them appears less effective than grouping together in large beds, or scattering them about the borders with other deciduous trees and shrubs. The intensely brilliant golden-green of their new leafage in the spring seems to make a discord when we see patches of it amongst the sombre green of the rhododendrons; but in separate groups, and associated with other deciduous trees, they are as gay and various as any of the flowering trees known to us.

The Pontic azalea is a native of Asia Minor, and in many respects distinct from the hardy azaleas that are natives of North America, such as *A. calendulacea*,

A. nudiflora, and *A. viscosa*. Its nearest ally is *A. Sinensis*, a native of China, whence also we have the gorgeous *A. Indica*, which in the dawn of our summer renders the conservatories and flower shows resplendent with its many-coloured blooms. These last two are scarcely hardy, and therefore must be grown under glass during at least a portion of the year. But the series first named need no protection at any time, and they will thrive in any soil that is of a sweet mellow texture and free from calcareous matter. It is customary to plant them in peat, and they certainly thrive in such a soil; but in turfy loam, or any soil of a loamy character, and especially if sandy, they will generally prosper and give an abundant reward for the most ordinary care.

The hardy species have been freely crossed, and the result is innumerable varieties, producing flowers of all colours, very many of them "flame-like" in their shades of yellow, orange, red, crimson, and intermediate tints.

EVERLASTING PEA

THE EVERLASTING PEA.

Lathyrus latifolius.

NONE of the old-fashioned flowers, as it is the new fashion to call them, can fairly stand before the half-dozen sorts of everlasting peas that may be met with in gardens where fashion is unknown and beauty is pre-eminent. When they have held their ground a few years, and have made great bosses of rampant growth, crowned and crowded with flowers, they are altogether glorious. They are a little too riotous in temper, too exuberant in spreading themselves about, for the very trim garden where straight lines prevail and the knife and shears are kept constantly at work; and yet it must need a curious frame of mind in any one who, having seen a clump of everlasting peas in flower, should after that desire to limit their growth or put them out of the garden altogether.

The rambling botanist who cares not for garden flowers will scarcely turn aside from these, for they will remind him of some of the glorious wildings of the pea tribe he

has met with in his wanderings, such as *Vicia cracca* and *Lathyrus sylvestris*, which are apt to throw their arms about as if the hedgerows belonged to them, and boundaries and rights had never been heard of in the land. And it is worthy of remark that these splendid wildings may be easily introduced into the garden by simply gathering the ripe seeds (of which the plants produce plenty), and sowing them where they are to remain, taking care, however, to give them a reasonable chance of struggling up into the light in positions similar to those they find for themselves in their vast domain of no-man's-land. As a rule, a sandy soil suits them best, as may be known by their frequency in sandy districts; but they like good living, and starving land will not produce many vetches, whether wild or cultivated. In like manner all our cultivated species of *lathyrus*, *orobus*, and *astragalus* do best on a deep sandy loam. But they are not very particular, provided they have a good soil of some sort, and are left alone for a few years to become well established in it. Indeed, nine-tenths of the best of our hardy flowers only ask to be left alone to find delight in doing their duty. If they are transplanted about from place to place—as it is the way of beginners to treat all their plants—they take the sulks and refuse to flower, or they take themselves off, and so teach a lasting though disagreeable lesson.

The round-leaved pea (*Lathyrus rotundifolius*) grows to a height of about two feet, and flowers in August. The flowers are produced in long loose clusters of a bright rosy purple colour. It is a native of the Caucasus, and thoroughly hardy. Its low growth precludes its employment to cover arbours and trellises; but it is a good rockery plant, and may with advantage be planted where it can

run amongst low shrubs, and find a little support for its delicate stems.

The broad-leaved pea (*L. latifolius*) is no doubt a variety of our woodland pea (*L. sylvestris*). It will run to a height of six to eight feet, and flowers somewhat early in the summer, the flowers being of a rich rose colour. It has been found growing wild in several districts far removed from each other; but has always been regarded as an escape from gardens rather than as an indigenous plant.

The white everlasting pea is a variety of the last-named. Its distinguishing characteristic is seen in its pure white flowers, which blossom in prodigal profusion; for the plant produces but few seeds, and thus reserves its energy for display. While other kinds of everlasting peas are easily multiplied by sowing seeds, this must be increased by division of the roots or by striking cuttings. Happily, there is no difficulty in either practice. The proper time to strike cuttings is when the new growth is rising in the spring, when the young shoots, being planted on a moderate hotbed, will make roots in the course of a few days, and soon after begin to grow vigorously.

This fine plant may be employed in a variety of ways in the garden. It is one of the finest of its class to train to the walls of an artificial ruin or about any quaint, rustic edifice that needs the embellishment of delicate but riotous vegetation. And it makes a fine bedding plant, being regularly dotted all over a large bed, and assisted to diffuse its growth by means of light brushwood laid amongst it. The folks who have succeeded in making grand beds of the new varieties of clematis will find the white everlasting pea a fine companion subject for them.

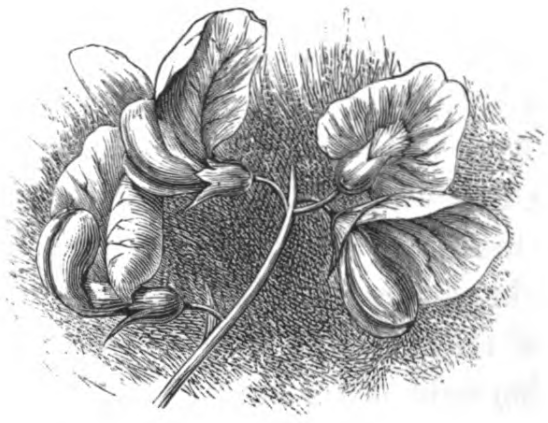
The marsh vetchling (*L. palustris*) grows two to three

feet high, and produces rather small clusters of bluish-purple flowers early in the summer. It is a bog plant, and when planted in the garden, therefore, a damp situation will suit it best.

The large-flowered pea (*L. grandiflorus*) is a fine plant, with hairy herbage and large rosy flowers, produced in clusters of two or three. It runs about four feet, and requires a warm sandy or light loamy soil. It is a capital plant for the front of a rockery.

The Californian pea (*L. Californicus*) runs about four feet; the flowers are light purple and white, extremely pleasing. This also is a good rockery plant, being allowed to fall over and make festoons in its own way.

The tuberous pea (*L. tuberosa*) is of low growth, rarely running more than three feet, and generally less. The flowers appear early, and are of a pleasing rose colour. It is a good rock and border plant. The tuberous root is edible, and has been sometimes spoken of as a likely substitute for the potato. But there is no substitute for the potato, unless it be bread—which is like saying the best substitute for silver is gold.



CRIMSON PETUNIA

THE CRIMSON PETUNIA.

Petunia phœnicea.

PLANTS of the new world often lack interest through sheer meagreness of "associations," and the petunia is a trite ex-example of this. Its usefulness as a garden flower rests on its beauty first, and next on the ease with which it may be adapted to a variety of circumstances for decorative effect. At page 110 of the First Series will be found some remarks upon the name and character of the plant, and we shall therefore now speak of its cultivation only.

The flower before us, which for convenience sake we name *Petunia phœnicea*, is a garden variety, therefore not to be regarded as typical for botanical purposes. Indeed, we can scarcely speak of it as a proper hybrid, but rather a cross, no one knows how many times removed, from *P. violacea*, *P. nyctaginiflora*, *P. phœnicea*,

and others that have been bred from in gardens, and so often crossed that it is in vain to look for distinct specific characters in the named varieties that now find favour. The seed-growers select certain showy types, taking care to insure plants of good habit, and they allow them to seed in a wild sort of way, the bees being free to cross them as they will, and the customers who buy and grow the seed being equally free to select from their seedling plants such as they consider worth a better fate than to be disposed of as annuals, which are here to-day and gone to-morrow.

Garden petunias may be classed under three heads: unnamed seedlings of various colours, named single varieties, and named double varieties. The cheapest of all modes of obtaining a fine lot is to sow the seed thinly on a well-made sunny border about the middle of April. As soon as the plants are furnished with three or four leaves, those that are crowded should be drawn out and transplanted to a similarly favourable spot, but as many as possible should be allowed to remain to flower where sown. When they are in flower the best should be marked; and if it is desired to perpetuate them, cuttings should be struck in August, five or six together in five-inch pots in sandy loam, and in these pots they should remain, having the shelter of a frame or greenhouse during the winter months. Thus you will have secured for flowering a second time, and indeed for as many years thereafter as may suit your pleasure or convenience, the best of the kinds that were in the first instance produced from purchased seed.

Now, if you have in you the spirit of a florist you will regard this little lot of selected sorts as the traditional half-

crown that the enterprising lad starts from home with when destined to marry his master's daughter and become Lord Mayor of London. The way to make your floral fortune is to plant them, let them run to seed, and thereby begin the world anew by means of seed of your own saving. You will sow, and grow, and select as before; and there is in truth no knowing to what glorious pitch of perfection you may eventually, by patience and skill, bring the petunia or any other flower that you may deal with in the same way.

We began on a cheap plan; but there is a better. It consists in buying plants of the best named varieties, and raising seeds from these, thus securing all that has been done by a thousand florists at the first start. But you are not bound to raise seedlings at all. If you want to have the best possible petunias for the least possible trouble, you have but to purchase the named sorts and grow them well, and there is an end of the matter.

To grow nice pot specimens of petunias is evidently not an easy matter, because we meet with very many at exhibitions that are not nice. The general fault consists in the growth being prolonged and rusty, suggesting to the critical observer that the plants have been crowded and far from the glass, and in some degree neglected as regards watering. The petunia is a very accommodating plant; it is very nearly hardy, and therefore should have plenty of air when growing freely. A light, rich, sandy soil should be employed in the growth of pot specimens, and the shoots should be pinched back in a slight degree in the early stages to promote a dwarf, bushy habit; and of course the training to neat stakes should proceed with every advance in the growth of the plants.

When kept under glass during the summer, the petunia soon becomes infested with green-fly, the only mode of removing which is to fumigate with tobacco smoke at night, when the plants are quite dry, and early the next day to give them a slight cleansing shower of clean water with the syringe. All plants that are nearly hardy will thrive better in frames than in greenhouses from May to October, as they can be fully exposed to light, air, and dew, and may be protected at any time from storm and frost.