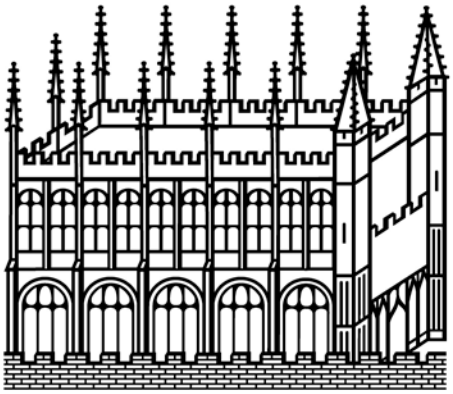

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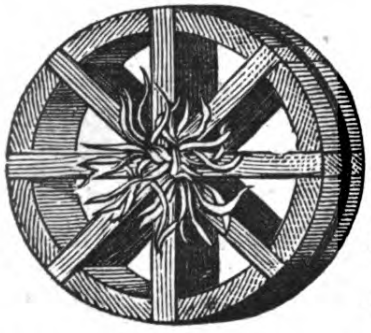

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FAMILIAR GARDEN FLOWERS.

FIGURED BY

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

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SHIRLEY HIBBERD.

"Where does the wisdom and the power divine
In a more bright and sweet reflection shine?
Where do we finer strokes and colours see
Of the Creator's real poetry,
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Upon the third day's volume of the Book?
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PREFACE.

LIGHT words are at times more serviceable than learned lines, and persuasions are often more effective than arguments. This is especially the case in respect of subjects that are adapted for universal enjoyment, and that appeal to feeling first and afterwards arouse curiosity and set the mind to work. Garden flowers give more delight, perhaps, to those who study their history and cultivation and uses, than to such as admire them but in a casual way, and who may be said to smile and pass on. But in either case the gratification, which is one of sentiment in the first instance, becomes an intellectual exercise, and may be aided by one given to gossiping, and with a little knowledge to flavour his words. It is with some such purpose the following papers have been penned to accompany a series of pictures adapted to awaken and sustain an interest in "familiar garden flowers."

S. H.

SYNOPSIS.

THE subjoined notes will be useful to readers who desire more information of a scientific and technical nature than is embodied in the sketches that accompany the plates. To arrange them otherwise than in accordance with the arrangement of subjects in the body of the work would appear an incongruity; and as each note is complete in itself, the lack of scientific sequence is probably of no consequence. It is impossible, indeed, in such a work as the present, to follow any system, unless it be that of the butterfly, which probably knows but little of botany, but appears to be perfectly happy in going from flower to flower.

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

LILIUM, from *leirion*, or from the Celtic *li*, white. N.O., *Liliaceæ*. LINNÆAN: 6, *Hexandria;* 1, *Monogynia*.—The lilyworts are endogenous plants widely scattered over the globe, and comprehending the dracænas, yuccas, aloes, and asparagus, as well as the true lilies, which for the most part produce fleshy bulbs of annual duration. The leaves are always simple and undivided, and usually have the veins running straight from the base to the apex, but in some dracænas they diverge from the midrib to the margin. The flower consists of six

perianth pieces, six stamens with anthers opening inwards, and a superior three-celled ovary changing to a three-celled fruit. The true lilies have a longitudinal nectariferous furrow at the base of each petal or perianth piece, an undivided style, a capitate stigma, and flat seeds. The colour of the flowers is white, yellow, or red.

WALLFLOWER, or **CHEIRANTHUS.** The English name refers to the habit of the plant as an inhabitant of walls and rocks; the Latin name implies that it is in an especial manner a nosegay or "hand" flower. N.O., *Cruciferæ*. LINNÆAN: 15, *Tetradynamia*. —The cruciferous order is one of the most natural as well as most important of the great families of the vegetable kingdom, as it includes the cabbages, cauliflowers, cresses, mustards, turnips, colzas, horseradish, sea-kale, and an immense number of ornamental plants, of which the candytuft, stock, wallflower, and arabis are familiar examples. Many of the plants of this order are characterised by a volatile acridity and a pungent flavour; they are stimulant and antiscorbutic; none of them are poisonous. Most of them are annual or biennial herbs; some are perennial and sub-shrubby; all have alternate leaves without stipules; the flowers are hermaphrodite, regular, and consist of a calyx of four pieces and a corolla of four petals clawed at the base and arranged opposite each other in the form of a cross; hence the term "cruciferous." The stamens are six in number, four of which are longer than the other two. The stigma is two-lobed. The ovary is superior, with two cells separated by a partition to which the ovules are attached. The fruit is a silique, or a silicle, dry, one or many seeded, and usually opening in two valves. The seeds are without albumen, but in many instances contain oil, which is removed by expression for commercial purposes.

ACONITUM, most probably from *Aconæ*, the place where it was first found. N.O., *Ranunculaceæ*. LINNÆAN: 13, *Polyandria*; 3, *Trigynia*. —The ranunculus or crowfoot family consists of herbaceous and half-shrubby plants, with leaves alternate, divided, and widened at the base, where they form a sheath round the stem. The flowers vary much in their disposition, having sometimes a whorl of three leaves close to them or at some distance below. The calyx consists of three to six pieces; the corolla contains petals that have a distinct numerical relation to the leaves of the calyx, being equal, double, or triple. Thus the buttercups have usually a calyx of five leaves and a corolla of five petals; but the pilewort, or lesser celandine, has usually three sepals and nine petals; while the peony has five sepals and five to ten petals. The stamens are generally numerous, distinct, and situated under the ovary. The carpels, or seed-vessels, are sometimes one-seeded and collected in a head or capitule; or many-seeded and combined in a whorl; or are compressed so as to form a many-celled pistil. All the ranunculaceous plants have watery juices, and are more or less acrid and poisonous, and the roots are often more decidedly poisonous than the stems and leaves. But the poisonous principle is destroyed by boiling or drying; hence some of these plants are used for food when cooked, and the poisonous crowfoots of our meadows, which are never touched by cattle, become wholesome fodder when dried in the form of hay. The aconite may be distinguished from all other

members of the ranunculus family by the fact that the large uppermost segment of its calyx overhangs the petals and other parts in the form of a helmet.

SWEET PEA, or **LATHYRUS,** from Greek intensive prefix *la,* and *thouros,* raging, the seeds being supposed to promote excitement if eaten. N.O., *Fabaceæ,* or *Leguminiferæ.* LINNÆAN: 17, *Diadelphia;* 4, *Decandria.*—The "papilionaceous" or butterfly flowers represent an enormous natural order, comprising herbs, shrubs, and trees, from the wayside trefoil to the climbing wistaria and the stately acacia, and the useful peas and beans of the garden. The leaves are alternate, usually compound, but sometimes simple. The flowers are irregular, with calyx of five unequal teeth; the corolla is composed of five unequal petals, of which one is larger than the rest and envelops them. This is called the *standard;* the two lateral petals are the *wings;* the two under petals, which are usually united, form what is called the *keel.* There are many deviations from this typical structure, and in some few instances the corolla consists of five equal petals, stamens generally ten. The fruit is always a pod, generally dry, many-seeded, opening in two valves, or unopening, as in sophora. The seeds of many plants of this order are well known for their uses as food, but some of them are poisonous, and the order includes plants that produce powerful drugs.

POLYANTHUS, or **PRIMULA,** from Greek *polus,* many, and *anthos,* a flower; the flowers being in umbels on the summit of a common stem, as distinguished from those of the primrose, which appear singly on separate stems. The generic name primula is from *primulus,* the beginning, referring to the early appearance of the flowers in spring. N.O., *Primulaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—Annual or perennial herbs with radical leaves and regular flowers. Calyx usually with five divisions or lobes; corolla in one piece, with usually five lobes; stamens equal to the number of the lobes, and opposite to them; style and stigma simple; fruit one-celled, many-seeded. A comparatively unimportant family, best known for the beautiful flowers it contributes to our fields and gardens.

CAMPANULA, from Lat. *campana,* a little bell. N.O., *Campanulaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—This order consists for the most part of leafy herbs with alternate leaves, which sometimes contain a milky juice. The flowers are hermaphrodite and regular, consisting of a persistent calyx, usually of five divisions, but sometimes of three or eight. Corolla inserted in the summit of the tube of the calyx, usually five-lobed, and bell or saucer shaped; stamens five, inserted in the summit of the tube of the calyx; ovary inferior, with two, three, or five many-ovuled seeds; fruit a capsule containing many seeds attached to a central placenta. A comparatively unimportant order, the members of which are esteemed for their beauty.

CRASSULA, from Lat. *crassus,* thick, in allusion to the succulent leaves. N.O., *Crassulaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—The crassula or stonecrop family comprises plants that are herbaceous,

woody, and succulent. The leaves are alternate or opposite, sometimes ternate or unequally pinnate, without stipules; flowers hermaphrodite, regular; the calyx with five lobes usually, but sometimes with as many as twenty; corolla consisting of petals equal in number to the lobes of the calyx; stamens five to ten; ovaries free, equal in number to the petals; fruit composed of many-sided carpels, to the inner sutures of which the seeds are attached. In echeveria the corolla is in one piece, deeply divided, and the stamens are united to it. A quite unimportant order, though renowned for the beauty of its flowers.

MIMULUS, from Lat. *mimus*, a mimic, an ape, in reference to the gaping mouth formed by the under petal; hence the familiar name of monkey flower. N.O., *Scrophulariaceæ*. LINNÆAN: 14, *Didynamia;* 2, *Angiospermia*.—The order consists of herbs or shrubs, with leaves usually opposite, sometimes alternate; flowers hermaphrodite, irregular, in spikes or clusters; the calyx is permanent, with four or five unequal divisions; the corolla is subject to great variation, but is usually four-divided, and gaping; stamens four; ovary two-celled, many-ovuled; style simple with two-lobed stigma; fruit a two-celled capsule; seeds with a straight cylindrical embryo. A large and very natural order, comprising the calceolaria, verbascum, antirrhinum, diplacus, digitalis, veronica, bartsia, rhinanthus, &c. The species are scattered all over the world, but are most abundant in the warmer temperate regions. Their properties are various, but few of them are available as food; many produce powerful drugs, and all are more or less suspicious.

ESCHSCHOLTZIA. Named in honour of Dr. Eschscholtz, an eminent botanist. N.O., *Papaveraceæ*. LINNÆAN: 13, *Polyandria;* 4, *Tetragynia*.—The poppyworts are mostly herbs, but a few are subshrubby; all contain a milky narcotic or acrid juice. The leaves are alternate, more or less divided, usually widened at the base, and half clasping the stem; flowers hermaphrodite, usually regular; calyx with two or three pieces, which fall as the flower expands; corolla of four or five petals, much crumpled before expanding; stamens indefinite in number; ovary distinct; fruit a dry, many-seeded, spherical, or cylindrical capsule, or an elongated pod opening by two membranous valves. A small but important order, comprising the poppy, great celandine, bocconia, sanguinaria, platystemon, &c. Most of the members of this order possess decided chemical properties, and are more or less poisonous. The poppy is the most renowned in this respect from its production of the powerful narcotic opium, a great blessing and also by misuse a great curse to the human family.

SAXIFRAGA, from Lat. *saxum*, a stone, and *frango*, to break, in allusion to certain supposed medical properties. But as these plants often grow amongst rocks, and their expanding and ramifying roots tend to rend them asunder, the name may quite as fitly represent their occasional occupation as stone-breakers. N.O., *Saxifragaceæ*. LINNÆAN: 10, *Decandria;* 2, *Digynia*.—This order comprises herbs, shrubs, and trees. Leaves alternate or opposite, sometimes in whorls; flowers hermaphrodite, regular; calyx usually with five lobes, which

are sometimes united and adherent to the ovary; corolla of five petals; stamens five or ten, inserted with the petals on the tube of the calyx; fruit a capsule, many-seeded, often terminated with two small horns. A small order, comprising the exquisitely beautiful family of saxifrages, the hydrangea, chrysosplenium, and heuchera. The very common and much admired Astilbe Japonica, commonly called "Spiræa Japonica," is a member of the saxifrage family, and is therefore not a spiræa, for all the true spiræas are allied to the family of roses.

MALCOMIA. Named after W. Malcom, mentioned by Ray. N.O., *Cruciferæ.* LINNÆAN: 15, *Tetradynamia.*—See notes under "Wallflower," page viii.

HYPERICUM, possibly from Greek *hyper,* over, and *ereike,* heath, a plant growing on a heath. The name is certainly from the *Yperikon* of Dioscorides and Hippocrates, who were acquainted with *Hypericum crispum* and *H. empetrifolium,* and advised their employment in complaints of the chest. N.O., *Hypericaceæ.* LINNÆAN: 18, *Polyadelphia;* 2, *Polyandria* —The plants of this order are herbs, shrubs, and trees, the best known amongst them being the tutsan of the hedgerows. Leaves simple, entire, opposite, full of pellucid and black dots; flowers hermaphrodite, regular; calyx usually of five pieces, the two outer smaller than the three inner; corolla of five petals; stamens indefinite, united at their base into bundles; ovary free, globular; fruit a dry or fleshy capsule of many valves; seeds small, tapering, with an inferior radicle. A small and unimportant order, comprising St. John's wort, parnassia, elodea, and the gum gutta, or American gamboge.

ASTER, from Greek *aster,* a star. N.O., *Compositæ,* or *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*—The composite plants have a strong family likeness, and yet, owing to the breadth and fewness of the ray florets in the flowers of some kinds, the beginner may occasionally fail to recognise them. They are herbaceous plants, or small trees, with leaves opposite or in whorls, entire or divided. Flowers hermaphrodite or unisexual, sometimes in single heads or capitules, sometimes in compound umbels or corymbs. The "composite" character is revealed when we examine one of the capitules or stars. This is found to consist of a number of separate flowers, varying in structure, packed together on a common receptacle. The following may be accepted a general statement of a very difficult case:—Every head of flowers, or florets, as they are technically named, has a central part, or disc, and a circumference, or ray; of these florets some are regularly tubular, with their limb cut into four or five segments; others are slit up on one side, opened flat, and turned towards the circumference of the head; the latter are named ligulate florets. When in a head of flowers all the florets are alike and ligulate, it belonged to the division *Cichoraceæ,* as in the dandelion; if the florets of the disc were tubular, and those of the circumference only ligulate, it was referrible to *Corymbiferæ,* as in the marigold; and when all the florets are alike tubular, both in the disc and ray, it belonged to *Cynarocephalæ,* provided the involucre was at the same time stiff and ovate, as in the

thistle. The latter character was necessary in order to distinguish *Cynarocephalæ* from those *Corymbiferæ* in which the ray is not developed, as common groundsel. To these three divisions a fourth has in later times been added under the name of *Labiatifloræ*, in consequence of the florets having distinctly two lips of unequal size. These divisions have, however, been thought objectionable on several accounts, and De Candolle, following Cassini and Lessing, has trusted more to modifications of the style, the result of which is the following arrangement of the order in eight tribes, named respectively *Vernoniaceæ*, *Eupatoriaceæ*, *Asteroideæ*, *Senecionideæ*, *Cynareæ*, *Mutisiaceæ*, *Nassauviaceæ*, *Cichoraceæ*. A very large order, the members of which are met with in every part of the world. They are mostly astringent, tonic, and aromatic, affording foods, fibres, dyes, and drugs. There is scarcely a poisonous plant in the family.

MARIGOLD, or **CALENDULA.** N.O., *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 4, *Necessaria*.

FUCHSIA. Named after Leonard Fuchs, a German botanist. N.O., *Onagraceæ*. LINNÆAN: 8, *Octandria*; 1, *Monogynia*. This small order consists of herbs or shrubs, with opposite or alternate leaves. It is a very natural order of polypetalous exogenous plants, which, in their more complete condition, are certainly known by their inferior ovary, and by all the parts of the flower being four, or a constant multiple of that number. Thus in *Jussiæa grandiflora* there are four sepals, four petals, twice four stamens, four stigmas, four cells to the ovary, and the fruit when ripe bursts into four valves. The species characterised by this peculiarity are chiefly herbaceous plants, inhabiting the more temperate parts of the world, and have white, yellow, or red flowers, such, for example, as the great genus of œnotheras, or evening primroses, and the epilobiums, or willow-herbs, which are so common as wild plants. It is only in the fuchsia, which has a succulent fruit and forms an approach to *Myrtaceæ*, that a woody structure is met with. The enchanter's nightshade (*Circæa*) is a member of this order.

POPPY, or **PAPAVER.** N.O., *Papaveraceæ*. LINNÆAN: 13, *Polyandria*; 1, *Monogynia*. See summary under "Eschscholtzia," page x.

BALSAM, or **IMPATIENS.** The word balsam explains itself, although the plant so called does not furnish any oil or balm or resin that might be so called. The term *impatiens* refers to the hasty escape of the seeds when the pod is touched. N.O., *Balsaminaceæ*. LINNÆAN: 5, *Pentandria*; 1, *Monogynia*.—The order consists chiefly of succulent herbs, with sometimes radical leaves, but more frequently caulescent leaves which are alternate or opposite; flowers irregular, issuing from the axils of the leaves; calyx with five segments, which are petal-like and unequal; corolla with five petals alternate with the segments of the calyx, the anterior petal large and concave, the two posterior united with the two small lateral ones; stamens five; fruit a capsule with five many-seeded cells beneath, but one-celled above and open-

ing in five elastic valves. A small order containing no plants of special interest or importance.

TULIP, from *tulipan,* Turkish for turban. N.O., *Liliaceæ.* LINNÆAN, 6, *Hexandria;* 1, *Monogynia.*—See summary under "Lilium," page vii.

CONVOLVULUS, from Lat. *convolvo,* to entwine. N.O., *Convolvulaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—Herbs, shrubs, and trees, all of them monopetalous exogenous plants, with bell-shaped flowers, opening or contracting beneath the influence of light, a plaited æstivation of the corolla, five stamens, and a fruit with two or three cells, in which one or two ovules stand erect. The embryo is crumpled up in the midst of very firm albumen. The common bindweeds of the hedges, the *Ipomœa* and *Convolvuli* of the garden, offer illustrations of the ordinary state of this order, the species of which have purgative roots; and in the case of scammony, yielded by *Convolvulus Scammonia,* and of jalap, produced by various species of *Ipomœa,* are of great medicinal importance. Occasionally the purgative principle is so much diffused among the fæcula of the root as to be almost inappreciable, as is the case in the *Convolvulus Batatas,* or sweet potato of America, which was the forerunner of the common potato, and gave it its name, and which is still cultivated in the south of Spain and France.

JESSAMINE, or **JASMINE.** For name see page 85. N.O., *Jasminaceæ.* LINNÆAN: 2, *Diandria;* 1, *Monogynia.*—Climbing shrubs or miniature trees, with leaves opposite or alternate; trifoliate or unequally pinnate, without stipules; flowers hermaphrodite, regular; calyx of five to eight lobes; corolla with five to eight lobes; stamens two; ovary two-celled; fruit a double berry or duplex capsule. A small order, the members of which are met with in tropical and warm temperate climates. In many instances the flowers abound in a fragrant essential oil.

SNAPDRAGON, or **ANTIRRHINUM.** For the names see page 89. N.O., *Scrophulariaceæ.* LINNÆAN: 14, *Tetradynamia;* 2, *Angiospermia.*—See summary under "Mimulus," page x.

IRIS, from *iris,* the rainbow. N.O., *Iridaceæ.* LINNÆAN: 3, *Triandria;* 1, *Monogynia.*—This order consists entirely of herbs that have fibrous, tuberous, or bulbous roots; but the "bulbs" of this order are not formed of scales like those of lilies, but are woody, and multiply by a new growth at the summit, which true bulbs never do; hence the bulb-like roots of these plants are called corms. The order comprehends the iris and crocus of the northern hemisphere, and the gladiolus and ixia of the southern hemisphere. All are furnished with sword-shaped or sickle-shaped leaves; the flowers are hermaphrodite, regular and irregular, enclosed before opening in a sheath; the perianth has six divisions arranged in two series; there are three stamens; the fruit is a three-celled capsule. There are several

edible plants in the order, and a few that furnish aromatic drugs, and all the species are highly ornamental. Though a comparatively unimportant order it comprises fifty-three genera and 550 species.

CROCUS, from Greek *crocus,* saffron. Holinshed ("England," c. 8), says that "a certain young gentleman named *Crocus* went to plaie at coits in the field with Mercurie, and being heedlesse of himselfe, Mercurie's coit happened by mishap to hit him on the head," &c. &c. The coit killed him, and saffron sprung from the ground whereon he had bled, and was called crocus in commemoration of the event. N.O., *Iridaceæ.* LINNÆAN: 3, *Triandria;* 1, *Monogynia.*

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

LAVENDER, from Latin *lavo,* to wash. N.O., *Lamiaceæ,* or *Labiatæ.* LINNÆAN: 14, *Didynamia;* 1, *Gymnospermia.*—The labiate order is marked with strong characters, and constitutes a distinct though extremely large group. The members of it are mostly herbs and low shrubs with square stems, opposite leaves, and aromatic juices; the flowers are singularly formed; the calyx is bell-shaped with five teeth; the corolla tubular, irregular, two-lipped, the upper one very short and sometimes wanting; stamens four; ovary four-lobed; stigma two-cleft; fruit composed of four one-seeded nuts enclosed in the interior of the permanent calyx. A large proportion of the most useful aromatic herbs belong to this order, such as sage, thyme, marjoram, mint, betony, ground-ivy, &c. About 1,714 species are known, of which over 1,000 belong to the eastern hemisphere. The temperate and warm temperate parts of the earth are largely occupied with labiates; there are but few in the Equinoctial regions, and still fewer are Arctic.

PETUNIA, from *petun,* the Brazilian name for tobacco. N.O., *Solanaceæ.* LINNÆAN: 5, *Pentandria;* 1, *Monogynia.*—This order is composed of herbs or shrubs, rarely of arborescent plants, with colourless juices, round or irregularly angled stems or branches, sometimes armed with thorns or prickles; their leaves alternate, simple, entire, or lobed; the inflorescence is variable, mostly axillary, sometimes terminal; the flowers regular and united; the calyx is five-parted, persistent; corolla monopetalous, five-cleft or four-cleft, regular, deciduous; stamens inserted upon the corolla, as many as the segments of the limb, and alternate with them; ovary two or four-celled, stigma simple; fruit either a capsule or a berry; seeds numerous. A large and somewhat anomalous order, comprehending many useful and many noxious plants, as, for example, the potato, tomato, nightshade, egg-plant, capsicum, henbane, and tobacco. Between the flower of

the potato and that of the petunia what a difference, and yet we are to regard them as somewhat nearly related!

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

CHRYSANTHEMUM, from Greek *chrysos*, gold, and *anthos*, a flower. N.O., *Asteraceæ*. LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*—For summary see under "Aster," page xi.

PENTSTEMON, from *pente*, five, and *stemon*, a stamen. N.O., *Scrophulariaceæ*. LINNÆAN: 14, *Didynamia;* 2, *Angiospermia.*—For notes on the order see under "Mimulus," page x.

MICHAELMAS DAISY. See under "Aster," page xi.

SINGLE FUCHSIA. See under "Fuchsia," page xii.

DOUBLE STOCK. See under "Wallflower," page viii.

ORIENTAL POPPY. See under "Eschscholtzia," page x.

ABUTILON. From the Greek for mulberry-tree, which the larger kinds of abutilon resemble; or from the Arabic for mallow. N.O., *Malvaceæ*. LINNÆAN: 16, *Monadelphia;* 8, *Polyandria.*—The malvaceous order comprises herbs, shrubs, and trees, with regular showy flowers, usually with five divisions, but sometimes with three or four. The petals are spirally twisted before the flowers open, and they are united by their claws to the base of the tube formed by the union of the filaments, so that the corolla falls off entire. The stamens are curiously united by their filaments into a tube, within which is the style. The ovary consists of numerous carpels arranged in a whorl. The fruit is a cluster of seed-vessels arranged around a central axis.

In this order we find the mallow, hibiscus, sida, the cotton-plant, or gossypium, and the abutilon.

WINTER ACONITE. See under "Aconitum," page viii.

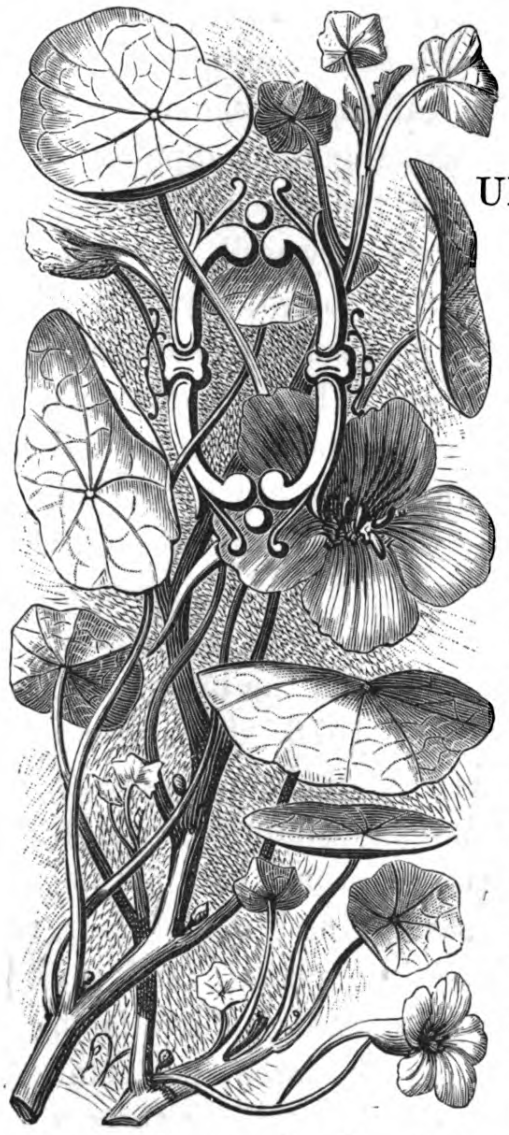
CHRISTMAS ROSE, or **HELLEBORUS.** The familiar name needs no explanation. Helleborus is from the Greek *helein*, to kill, and *bora*, food, implying a poisonous plant, which this certainly is. N.O., *Ranunculaceæ*. LINNÆAN: 13, *Polyandria*; 6, *Polygynia*. See under "Aconitum," page viii.

MARIGOLD. See under "Aster," page xi.

I will not praise the often-flattered rose,
Or, virgin-like, with blushing charms half seen,
Or when, in dazzling splendour, like a queen,
All her magnificence of state she shows;
No, nor that nun-like lily which but blows
Beneath the valley's cool and shady screen,
Nor yet the sun-flower, that, with warrior mien,
Still eyes the orb of glory where it glows;
But thou, neglected wallflower! to my breast
And muse art dearest, wildest, sweetest flower!
To whom alone the privilege is given
Proudly to root thyself above the rest,
As Genius does, and, from thy rocky tower,
Lend fragrance to the purest breath of heaven.

INDIAN CRESS.

FAMILIAR
GARDEN FLOWERS.



THE INDIAN CRESS.

Tropæolum majus and *T. minus.*

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

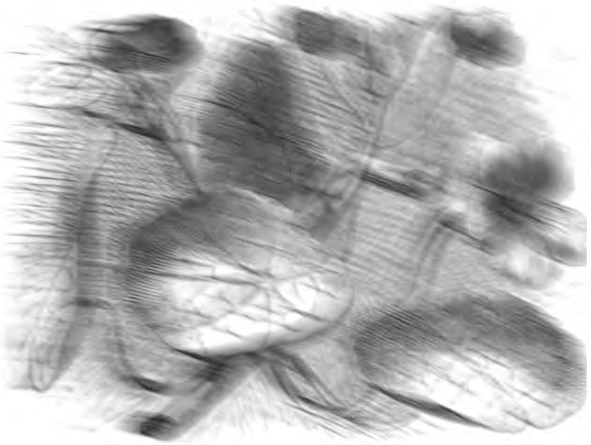
India, whereas it is a native of Peru, whence it was introduced in 1596—a date full of suggestions to the reader who can surround it with a circle of great names and important events.

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

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

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

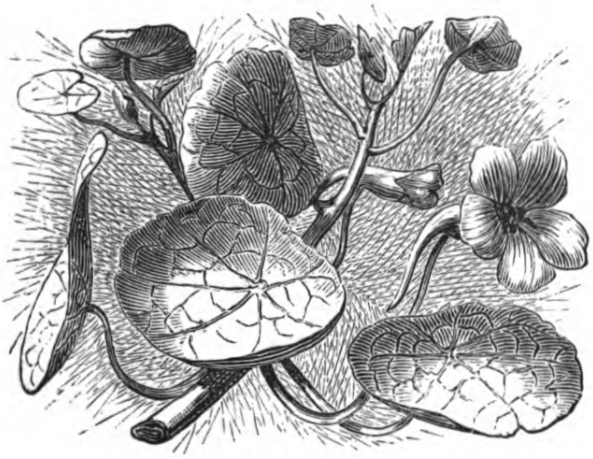
There is a beautiful class of double *tropæolums* in cultivation that are justly prized for the decoration of the conservatory during the winter. These and other kinds required for winter flowers should be propagated by cuttings in July and August, and the flower-buds that first appear



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

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

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



WHITE LILY.

THE WHITE LILY.

Lilium candidum.

THE common white lily is one of the noblest as well as commonest flowers of the English garden, and a *beau idéal* of the tenantry of the terrestrial paradise of the delectable Lady Corisande. Its manner is that of a wilding, for if a few scales broken from a bulb are scattered about a garden, some of them will become true lilies in time; and wherever it is planted and left alone for a few years, it justifies the confidence reposed in it by flowering freely, and increasing by the formation of new bulbs, so that small clumps become large clumps, and may be periodically divided. But it is not a wilding here, and is but rarely met with as an escape from the garden. It is a native of the interesting country called the Levant, and as the Levant includes Palestine, it is by no means improper to consider this as the "lily of the field" referred to by our Lord in the Sermon on the Mount (Matthew vi. 28). If, however, we seek for a distinct flower as *the* lily of the Holy Land, we must take note of Canticles vi. 2, where the lily is

associated with spices, and this lily has a powerful and spicy odour that exactly answers to the suggestion of the text. Thus the white lily may be the lily of Solomon, because of its powerful fragrance, but the Gospel lily need not be scented, but must be glorious in apparel, comparable with this splendid monarch. It happens then that the Martagon Lily (*L. chalcedonieum*), which is almost devoid of odour, but produces flowers of the most brilliant scarlet, like the robes of Solomon, grows in profusion in the Levant, and is especially abundant about the Lake of Gennesaret, on the plains of Galilee, and the pastures on the borders of the desert. But it must also be borne in mind that the *shushan*, or lily of Scripture, may be rendered "rose" or "violet" with propriety, and probably had a very broad meaning, so that we might read, "Behold the flowers of the field, how they grow," without in the slightest degree misrepresenting the purpose of our Lord. The word "lily" is of unknown origin, and in all its older forms is of general application, and therefore we cannot hope to identify with certainty any flower so called in ancient and especially Eastern documents. It is none the less interesting, however, to note how admirably these two lilies answer to the two references cited, so that we may, without resorting to invention, regard the scarlet martagon and the common white as *par excellence* the lilies of Scripture.

It is a question of some interest why the white lily was dedicated by the Romish Church to Mary the mother of Jesus, and hence employed on the 2nd of July in connection with the celebration of the Visitation of the Blessed Virgin. The delicate whiteness of the flower renders it in this respect appropriate; but it is worth considering, too, that it is the only flower distinctly mentioned by the Founder of

the Christian faith, for, notwithstanding the comprehensive meaning of the word as it comes to us in the text, it has been, as a matter of fact, generally restricted to a particular flower. This dedication of the lily to the Virgin has certainly contributed in a very material degree to the diffusion and popularity of the plant; and the traveller in Ireland will, in the season of lilies, soon learn to distinguish the houses of Romanists and Protestants by the lilies in the gardens, for while the first plant the white lily as an emblem of their faith, the second plant the orange lily for a similar purpose, although the last is in reality much more of a political than a religious emblem.

The white lily will thrive in any fairly good soil, but to ensure a free growth and an abundance of flowers the soil should be rich and deep and moist. It is a good practice, therefore, to prepare for the plants suitable stations, and, having planted them, the next best thing to do with them is to leave them undisturbed for several years. It is often thought that lilies love the shade, but that is a mistake; they love the sun and a free circulation of air about them. In cold and exposed places the white lily often fails to flower, owing to the destruction of the incipient flower-buds by frost, in the month of May. Hence shelter from the keen east winds is an aid in lily culture, as is also a plentiful supply of water during the month of June, when the stems are rising. In respect of taste, the white lily should be so planted that its shabby stems may be concealed, for when wild it grows amongst tall grasses, and hence it is that as the flowers expand the leaves below them usually wither. The dashing Tritoma and the quiet Agapanthus are good plants to associate with lilies, for they agree in character, and supply ample and elegant green leafage.

It is not generally known that the common white lily may be grown to perfection in pots, and is well adapted for forcing. Its great decorative value, and its emblematic character, enhance its importance as a plant adapted for culture under glass, to supply its charming flowers at an earlier season than they customarily appear in the open garden. When grown for this purpose, the bulbs should be potted in August, in a compost consisting of about three parts mellow turfy loam, and one part each of rotten hot-bed manure and sharp sand. Frame culture should suffice until the end of February, when the plants may be removed into a light airy greenhouse, and should never have a temperature higher than the average of greenhouse plants. This, with full exposure to light, and abundant ventilation, will ensure an early and a vigorous bloom.

WALL FLOWER.

Ben George Lon.

THE WALLFLOWER.

Cheiranthus Cheiri.

THE wallflower is a prominent member of the cheerful family of "old-fashioned" flowers, and obviously takes its name from the circumstance that it thrives on walls, which, indeed, it often adorns in a most extravagant and delightful manner, making them mountains of perfume and beacons of fire. I was much struck with the glow of an old bastion at Amiens in April last, as the sunshine streamed through its ruddy bloom of wallflowers, and I very gladly remembered, in connection with the charming spectacle, the lines of Bernard Barton, in reference to the wallflowers of Leiston Abbey—

"And where my favourite abbey rears on high
Its crumbling ruins, on their loftiest crest,
Ye wallflowers, shed your tints of golden dye,
On which the morning sunbeams love to rest,—
On which, when glory fills the glowing west,

The parting splendours of the day's decline,
With fascination to the heart address'd,
So tenderly and beautifully shine,
As if reluctant still to leave that hoary shrine."

A snapdragon might, with perfect propriety, be called a "wall" flower, and a full list of plants that commonly grow on walls would include a considerable number of dear old garden friends. The finest wallflower I have seen was a great tuft of wheat that kept company with snapdragons and stone-crops and pellitories on one of the old fruit walls within view of my bedroom windows. I watched it through the summer with ever-increasing joy, anticipating the harvesting of the crop, and the feeding of my parrots with the "golden" grains. But when they were about half-ripe I saw, as I gazed from my window, a great hand rise above the wall and grasp them, and they disappeared as in the twinkling of an eye, while a thrill of horror went through me from head to foot. It was the gardener, who had suddenly resolved to make the wall tidy.

The wallflower has no special renown in literature, and is but rarely mentioned by the poets. It is not a native of this country, and although so thoroughly at home as a wilding on ruins, it is not known as a plant of the rocks, and is not often met with remote from places that have been modified by the hand of man. Its old name was "stock-gillofer" and "wall-gilloflower." Under the last name Parkinson, in the "Paradisus," describes seven sorts: the Common Single, the Great Single, the White, the Common Double, the Pale Double, the Double Red, and the Double Yellow. The "streaked gillivors" that Perdita speaks of as "nature's bastards" were, in all probability, pinks or cloves, but the wallflower and the stock were

known by the same name, and therefore we cannot always determine with precision the flowers referred to when gillivor or gilloflower occurs in our older literature. The Latin name, *Cheiranthus*, means "hand-flower," and it is most appropriate.

The cultivation of this flower is an extremely simple affair. The seeds should be sown on a plot of newly-dug ground in the month of May; and during rainy weather in July, the plants should be transplanted into rows a foot apart, and the plants six inches apart in the rows. In September or October they should be lifted with care and be at once planted where they are to flower, and in the months of April and May following they will be gay enough. The best of the double kinds is the sulphur yellow, which may be grown into a tree of considerable size, and if planted in a dry sunny situation will last any number of years, and may, indeed, become the pride of the garden. To multiply this variety, cuttings are taken, when they are full-grown but have not become woody, and being planted firmly in sandy soil and kept shaded or covered with a hand-glass, soon make roots, and in the following spring they may be planted out. Well-grown double walls make fine pot plants for the conservatory, and with a little careful forcing may be had in bloom at the turn of the year, and will continue flowering until mid-summer. The conditions of success are to be found in the employment of a gritty and somewhat calcareous soil, and affording the plants at all times plenty of light and air. Darkness and damp are death to wallflowers.

"Flower in the crannied wall,
I pluck you out of the crannies;—
Hold you here, root and all, in my hand.

Little flower—but if I could understand
What you are, root and all, and all in all
I should know what God and man is."—TENNYSON.

The Parisian gardeners delight the public by adorning the borders of the parks and promenades with beds of wallflowers of the most lovely description. They are grown as recommended above, and are planted so as to form dense convex masses, which, during April and May, are literally solid with fiery flowers. They mix the blood-red and purple variety, and employ the yellow very sparingly. In this country the yellow kinds are the most esteemed for bedding purposes, and the favourite sorts are the Belvoir Castle Yellow and the orange-coloured Tom Thumb.

If it is desired to establish wallflowers on ruins, rocks, and walls, the seed should be sown in April or May in suitable chinks, and be covered with a little fine soil, and it may be well, if there is danger of the seeds being blown or washed away, to cover them with a brick or tile until they germinate. The single blood-red and single yellow are the best for the purpose.

WOLF BANE.

OR, MONKSHOOD.

MONKSHOOD.

Aconitum napellus.

IT may be well at times to figure and describe familiar flowers that should be rendered unfamiliar. The truly handsome and very individual monkshood of the cottage garden is of so poisonous a nature, and has actually killed so many good people, that we should be wanting in duty to our readers did we not advise the rooting out of this grand herbaceous plant, and its consignment to the rubbish-heap as a plant that will surely offend if it obtains the opportunity. We distinctly remember several instances of poisoning by the substitution of its fleshy roots for horse-radish. We confess we "don't know how" any one who has ever tasted horse-radish could eat the root of this dangerous plant in place of it, however nicely it might be scraped and dished; but the fact remains and the warning

follows. As the most excellent apricot jam may be made from carrots, and the Jerusalem artichoke, which is like a potato, is by many regarded as in no way differing from the globe artichoke, which is a fleshy flower of a kind of thistle, we must not be in haste to blame people who scrape the roots of monkshood and supply the scrapings to be eaten with beef as horse-radish; but we must indulge the hope that knowledge will prevail, and speedily render such a dangerous substitution impossible.

It is somewhat singular that the older botanists are apparently in a fog with this common and characteristic plant. Mr. John Gerarde lumps it in with a lot of larkspurs, that are certainly related, but more or less far removed. His "munkeshood" is a delphinium possessed of several virtues, such as being good against the stings of scorpions, and "so forcible that the herb only thrown before the scorpion, or any other venomous beast, causeth them to be without force or strength to hurt, insomuch that they cannot mooue or stirre vntill the herbe be taken away." (Edition 1597, page 924.) To Master Gerarde's honour we are bound to quote further that in his opinion we should hold in contempt this "with many other such trifling toies not woorth the reading."

John Parkinson figures this plant fairly well, and describes it with the most delightful minuteness at page 215 of his "Paradisus." He adds that the "fair blew colour" of the flowers "causeth it to be nourished upon gardens, that their flowers, as was usual in former times, may be laid up among green herbes in windowes and roomes for the summer time; but although their beauty may be entertained for the uses aforesaid, yet beware they come not near your tongue or lips, lest they tell

you to your cost, they are not so good as they seem to be."

It is amusing to note how these grand old masters, who produced such books as we, degenerate triflers, dare not even think of because of the years of work and the thousands of pounds we should have to expend upon them —it is amusing to note how they struggled against superstition with the right hand, and occasionally opened the door for it to enter with the left. There is a charming winter-flowering aconite that should be grown in every garden; its flowers are pale yellow, and it is known as *Eranthis hyemalis*, Parkinson's name being *Aconitum hyemale*. This is the "counter-poison monkeshood," the roots of which "are effectual not only against the poison of the poisonful helmet flower, and all others of that kind, but also against the poison of all venomous beasts, the plague or pestilence, and other infectious diseases, which raise spots, pockes, or markes in the outward skin, by expelling the poison from within, and defending the heart as a most sovereign cordial."

Apart from the consideration of its possible and actual mischievousness, the monkshood is a noble border flower. It grows to a height of three to four feet, the upper half of the strong stems being closely beset with hooded flowers of a fine dark blue colour, elegantly accompanied with leaves that are deeply and distinctly cut into narrow-pointed segments. Its name, *Aconitum napellus*, is derived from *Aconæ*,* the supposed place of its origin, and *napus*, a turnip, from the likeness of its roots to the long white

* Theophrastus so derives it, from Ἀκόναι, but Ovid derives it from ἀκόνη, as growing on sharp steep rocks. But as all the species require some depth of good soil, the reference of Ovid must be to some other plant.

turnips that were formerly grown, but are now but rarely seen in this country. Amongst the allied plants that are worth a place in the herbaceous border, and more particularly in the front of the shrubbery border, the following deserve special mention, as they are handsome and by no means likely to prove hurtful to life, as the common monkshood always is:—*Aconitum autumnale*, height three feet, flowers pale blue; *A. japonicum*, like the last, but of a fuller blue; *A. chinense*, height five feet or more, flowers brilliant blue—a splendid plant, requires a dry, warm border, and shelter; *A. lycoctonum*, height four feet, flowers creamy yellow; *A. variegatum*, height four feet, flowers blue and white, a fine plant. All these thrive in common garden soil. Those who have peat soil may add to the list *A. paniculatum* and *A. septentrionale*; the first has flowers blue and white, the second reddish lavender.

TURNCAP LILY.

OR, YELLOW MARTAGON LILY.

YELLOW MARTAGON LILY.

Lilium pomponium.

DURING the last ten years or so the cultivation of lilies has expanded and intensified into a distinct floral passion, and as the prominent leaders have a considerable following, the passion is embellished with a fringe of fashion, and consequently many people dabble in lilies who have not much real enthusiasm and still less knowledge of the subject. The introduction of the noble *Lilium auratum* may be credited with the initiation of this new taste, and, beyond doubt, that lily of lilies is the true luminous centre around which the passion near, and the fashion far off, continually revolve. It is but a necessary circumstance that mistakes have been made in the selection and cultivation of lilies, and it is now beginning to be dimly discovered that certain members of this glorious family are not worth the serious attention of

any except enlightened enthusiasts, and amongst those the best chance of success will be by fate allotted to such as have the longest purses. It was the way of Auratum, the golden-rayed lily of Japan, when the bulbs were worth from one to five guineas each, to die ignominiously instead of gladdening with its magnificent flowers the devotee who had bled for it. Now that it is cheap it lives, and the reason is that we have learned to manage it both as to the buying and the planting; for lilies have soft bulbs, and if exposed to the exhaustive action of the air for any length of time are apt to resent the ill-treatment by shuffling off their mortal coil.

Certain of the lilies are not only deserving of a place, but are very much to be desired in every garden. The best for the borders and shrubberies are the Common White (*L. candidum*), the Orange (*L. bulbiferum*), the Canadian (*L. Canadense*), the Scarlet Martagon (*L. chalcedonicum*), the Turk's-cap (*L. martagon*), the Tiger (*L. tigrinum*), the Turban, or Yellow Martagon (*L. pomponium*), here figured, and Thunberg's (*L. Thunbergianum*). All these thrive in good loamy soil; they are rather injured than benefited by the addition to the soil of strong manures, but rotted turf and leaf mould are of great service when added to a loamy staple, when the beds are prepared for them.

The sorts that thrive best in peat, and, therefore, are admirably adapted for planting in the front of rhododendron beds, are the Golden-rayed (*L. auratum*), the Carolina (*L. Carolinianum*), the Japan (*L. Japonicum*), the American *L. superbum*), the Spotted (*L. speciosum*), and the Long-flowered (*L. longiflorum*). These constitute a fine collection, and all are hardy enough for open ground cultivation in the warmer parts of the British Isles,

where the soil is well drained, and positions somewhat sheltered are selected for them. The best time to plant lilies of all kinds is when the flowering is over and the leaves are turning yellow, as the growth of a lily is like the movement of a pendulum—when the energies are expended above, new growth begins below, and when the season of fresh root-action returns, the bulbs may be transplanted with safety.

The second selection which it is proposed to plant in peat constitutes a suitable selection for pot culture. First-class lilies are valuable pot plants, and if only a few sorts can be grown in pots for the conservatory, the best, beyond doubt, amongst the cheaper kinds are Auratum, Speciosum, and Longiflorum, for their flowers are exquisitely beautiful, richly scented, and last as long as any lilies known to us. To succeed with these as pot plants it is necessary to keep in mind that they should never be distressed at the root, and should never suffer through drought, or be excessively stimulated by liquid manure. Liberal treatment they should have, and a certain amount of fresh soil every year. To supply this the ball of roots should be turned out carefully, and a lot of the old soil removed, without denuding the bulbs completely; then they should be replaced in the same (or larger) pots, and filled in with fresh soil, into which they will soon strike roots and grow with renewed vigour.

All lilies may be forced, but it should be done gently. The last-named three are the best for forcing, and perhaps Longiflorum, because of the pure ivory-white of its elegant flowers, is most to be desired as a forced plant. A fine companion plant to force with it is the Trumpet Lily, *Calla* (or *Richardia*) *Æthiopica*, which is not a lily but an arum.

These two charming plants are of about equal value for decorative purposes. Of the two the Calla is the easier to force.

The Japanese cook and eat the bulbs of lilies, those of the Common White being much esteemed when served with white sauce. Tastes differ, as do sentiments; to us the eating of lily bulbs seems as foolish a proceeding as the eating of nightingale's tongues or the dissolving of pearls in vinegar to make sauce for a leg of mutton.

The place of the lily in literature would make a charming study for a lover of books, and the botanist might help sometimes to determine the meaning of delicate similes and comparisons. We cannot even touch the fringe of the subject here, but the thought has brought to our remembrance the heart-moving story of the "Lily Maid of Astolat," whom Lancelot rudely slighted—

> "The dead,
> Steer'd by the dumb, went upward with the flood—
> In her right hand the lily, in her left
> The letter—all her bright hair streaming down."
>
> *Elaine*, 1149.

ANNUAL PEA

THE SWEET PEA.

Lathyrus odoratus.

IT is a singular circumstance that the sweet pea has been commonly regarded as a half-hardy annual, whereas it is as hardy as any pea in cultivation, and the seed may not only be sown in February in the open ground, but in November, and if the mice do not eat it the winter will not kill it, and in due time the plants will appear with the sunshine of the early spring. But this fine plant deserves extra care, and should never be grown in a careless manner. It is the custom with many gardeners to sow the seed in pots and nurse the young plants in frames, but we prefer to sow them where they are to remain, and to defer doing this until the middle of March, for if the plants come up with a flush of warm weather before the frosts are over, they are apt to be nipped, and transplanting puts them back, so that to raise them in pots for the purpose is decidedly objectionable. Thus we simplify the

ordinary cultivation, but we must urge that what is done should be done well. A piece of mellow soil in an open situation should be prepared, by being well dug and rather liberally manured, in autumn or winter, and when the seed is sown this should be dug over again and the lumps broken to make a nice seed-bed; then sow in a neat drill an inch and a half deep, and very soon after the plants appear put to them stakes of brushwood about four feet high, selecting for this purpose the neatest and most feathery pea-sticks you can find. Peas that are grown to eat may be supported roughly, but peas that are grown to be admired for their beauty should be supported in the neatest manner possible; therefore wire trellises and "rissels" made for the purpose may with advantage be employed, especially when the peas occupy a prominent situation in the garden.

In the event of dry hot weather occurring early in the summer, sweet peas should be liberally watered two or three times a week, and if the natural soil is sandy or chalky it may be advisable to mulch the rows with half-rotten stable dung, which, if needful, can be concealed with a sprinkling of earth. To keep them flowering freely to the end of the season, all the pods should be removed upon becoming visible, and the plants, being thus relieved of the tax upon their energies the swelling of the seed would entail, will maintain their vigour more completely, and flower the more freely in consequence.

The commonest sample of sweet peas, that may be bought for a penny at the nearest stall, is worth sowing and growing, and will give delight to all who see and smell the flowers. There are no bad sorts in cultivation, and so if the seed is alive, that is enough. But those who take a

pride in growing fine flowers will do well to secure seeds of some of the named varieties of sweet peas that are offered by the great seed-houses, for they are distinct and glorious, and will contribute in a most especial manner to the delights of the garden, and at a cost so small that it would be a breach of politeness in this connection to talk about money. Secure a supply of each of the sorts that are on offer, and sow them separately; you will then have only half a dozen rows at the utmost, for there are not more than as many sorts in the lists. Or—happy thought!—mix them and sow them thinly in well-made ground, and then you will be able to gather several sorts on the same spot, which will often prove a convenience. They are extremely useful for decorative purposes and large "nosegays," but must be used with caution in bouquets and button-holes.

Peas are "papilionaceous" plants—that is to say, their flowers are like butterflies.

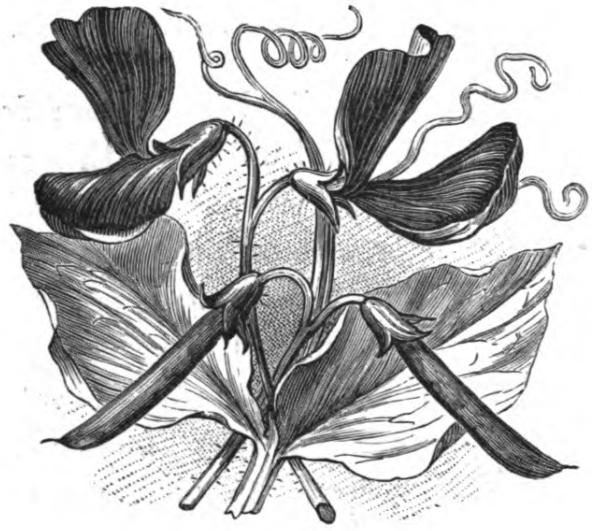
> "Here are sweet peas, on top-toe for a flight,
> With wings of gentle flush o'er delicate white."

They are also "leguminous" plants—from *legumen*, pulse—the seeds being substantial nutritive things produced in cases or pods which are sometimes like parchment, sometimes like paper, and sometimes tender and sweet, so that, as in the sugar pea, the whole thing is eaten, or, as people say, the "whole hog, skin and bristles." Poor "Bully Bottom" called upon Master Peas-blossom to scratch his head, and being thus scratched by Master Peas-blossom, he must needs have a donkey's appetite, and desire "a bottle of hay" or "a handful or two of dried peas." Nor need the donkey be ashamed of his relative, for the

choice of peas was not a bad choice, and it might be well for mankind at large, as well as for the asinine brotherhood, were peas more extensively relied upon as a kind of food likely to "stick to the ribs." As regards usefulness, the pea family is one of the wonders of creation; but as we cannot afford space to be scientific, we shall quietly quit the subject while our shoes are good.

"An early worshipper at Nature's shrine,
I loved her rudest scenes—warrens and heaths,
And yellow commons, and birch-shaded hollows,
And hedgerows bordering unfrequented lanes;
Bower'd with wild roses, and the clasping woodbine
Where purple tassels of the tangling vetch
With bittersweet, and bryony inweave,
And the dew fills the silver bindweed's cups.
I love to trace the brooks whose humid banks
Nourish the harebell, and the freckled pagil;
And stroll among o'ershadowing woods of beech,
Lending in summer, from the heats of noon,
A whispering shade, while haply there reclines
Some pensive lover of uncultured flowers."

CHARLOTTE SMITH.



POLYANTHUS.

THE POLYANTHUS.

Primula elatior.

WHAT is the difference between a primrose and a polyanthus? There is a great difference apparently, for one is catalogued as *Primula vulgaris*, and the other as *Primula elatior*. The ready answer is, that a primrose has one flower on a stalk, but a polyanthus has many. It happens, however, that primroses are produced in clusters, as polyanthuses are, but they appear to be produced singly, because the stem that carries the cluster is very short, and the secondary stem, or peduncle that carries the flower, is very long. Now and then a common primrose determines to explain the case to the young botanist, and then we see a stout stem bearing on its summit a cluster of primroses. These are called polyanthus primroses, and, generally speaking, they are scarcely so pretty as the (apparently) single

stalked common primroses. But how comes all this colour into the polyanthus, if it is but a primrose, seeing that a true primrose is always of a pale yellow colour? But, then, a true primrose is not necessarily of a pale yellow colour, for we have them of all colours, from pure white to deep yellow, and from pale rose and lavender to crimson and purple-blue. On one occasion I sat down in the park at Bicton to gossip with my old friend the late Mr. James Barnes, and the knoll of wild herbage we selected for our symposium was dotted with primroses of at least a dozen colours, some being brown or slaty, but others lively rose, full purple, red, and the most delicate lilac. Therefore, as to the growth and the colouring, it will not be difficult for the observant gardener to believe that the primrose and the polyanthus are but forms of the same species, owning a common origin in the type named by Linnæus *Primula veris*.

There are two distinct classes of polyanthuses. The bedding and border kinds have flowers characterised by gay colours; the florists' or exhibition polyanthuses have dark maroon or black grounds, and a rich gold lacing. On the roundness, smoothness, velvety texture, and sharpness of the lacing depends the relative merit of the show varieties, which are valued highly by the few florists who understand and appreciate them.

The polyanthus requires a rich loamy soil. It will thrive on clay if well managed; moisture is conducive to the health and free flowering of the plant, and it bears shade well, but if heavily shaded, and in a damp situation, becomes coarse, and the flowers are comparatively few and wanting in colour. The only way to multiply named varieties is by division, which is best accomplished in the month of

August, but may be performed with more or less success at any season. A ready mode of raising a stock is to sow seeds in pans of light rich soil, and to keep them in a frame, or a shady and rather damp place, until the plants appear. The seed is very capricious in its behaviour, for if sown when quite fresh and kept damp and dark, it will sprout up in ten or twelve days; but old seed will remain dormant for months, perhaps even for a year, and then grow freely and produce nice healthy plants. It is a point of very great importance to cover the seed with the thinnest possible dusting of fine soil, and it is advisable to cover the seed pan with a sheet of paper or a sprinkling of moss, which, of course, must be removed when the tender green herb appears.

There are some brilliant strains in cultivation as bedding plants, and they have been employed with singular effect in the London parks. These are all raised from seed, and when the flowering is over the plants are destroyed; thus it becomes necessary to save seed every year from the best plants, and to have successive batches of seedlings to maintain the annual display.

On dry sandy soils, and in hot arid situations, the polyanthus is comparatively worthless. It is a flower of the valleys, and loves comfort, but cold is never so harmful to it as heat, and in any case where the plant is tried by drought or heat it should be aided by shading and systematic watering.

The primrose, polyanthus, oxlip, and cowslip are so nearly related that it is a difficult matter to define them nicely; but the definition is of little consequence to the lover of flowers, however important it may be to such as "allium call their onions and their leeks." Let us, however, be

particular for a moment. There are three forms of *Primula* common in this country, and they are considered variations of one type, which, as remarked above, is called *Primula veris*. These three forms comprise the primrose (*Primula (vulgaris)*, the oxlip (*Primula elatior*), and the cowslip (*Primula veris*). For all practical purposes we may regard these three forms as distinct species; and it will be seen that the polyanthus is the second of the series. The oxlip differs from the cowslip in having a shorter and stouter stem, and a broader and flatter corolla—qualities that commend it to the attention of the florist, who does not fail to note also that it is delightfully variable, and when well grown will continually reward him with new colours and distinctive markings. Thomson, in his "Spring," speaks of—

"The polyanthus of unnumber'd dyes."

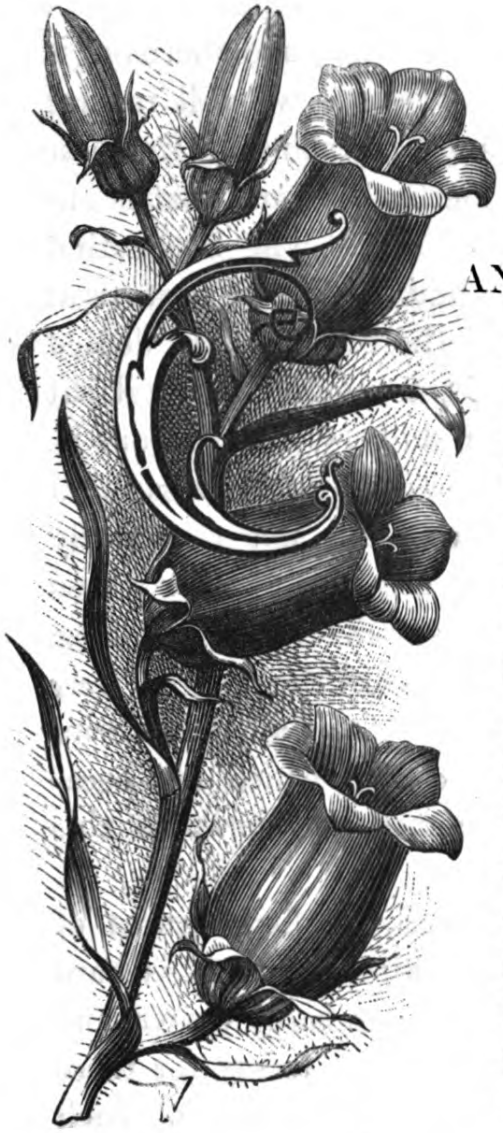
In the *Midsummer Night's Dream*, Shakespeare makes special reference to the red spots that adorn the centre of the cowslip, in the merry song "The Fairy" (act ii., sc. 1).

CANTERBURY BELL.

Ben George. Lon

THE CANTERBURY BELL.

ANTERBURY BELLS [illegible] not so [illegible] as might be [illegible] not [illegible] be [illegible] flowers [illegible] in [illegible] wh[illegible], how[illegible] of a [illegible] that [illegible] des[illegible] the [illegible]. Such [illegible] would, of course, be a [illegible] too daring; but it is a fact, and one of immense interest to the writer of [illegible] very fam[illegible] flow[illegible] that it will [illegible] some searching to discover any literary recognition. But the fact is a key to [illegible] may [illegible] one of the [illegible] world. The Canterbury [illegible]



THE CANTERBURY BELL.

Campanula medium.

CANTERBURY BELLS are not so loud in their tone as might be imagined by people who are not bookish. How easy it would be to say that this common flower is figured and described in all the books, and to one who had so committed himself, how terrible would be the shock of a rejoinder to this effect—that it is neither figured nor described in any of the books. Such a rejoinder would, of course, be a trifle too daring; but it is a fact, and one of immense interest to the writer of this, that this very familiar flower has been so rarely figured or described that it will require some searching to discover any literary recognition of it. But the fact is a key to what we may for convenience term one of the grievances of an important section of the flowery world. The Canterbury bell is a biennial, and

therefore has no right to a place in any of the books. The biennials should make a declaration against this state of things. For the sake of an hour's amusement we have ransacked our library, and found but few allusions to the plant. The botanists say it is not British, and therefore is not one of our wild flowers. *En passant*, we will remark upon this, that we once found a grand plant of the blue variety growing in Bonsal Dale, Derbyshire, and that is our only acquaintance with it as a wilding. The books that treat of annuals ignore biennials, and the books that treat of perennials do the same, and so the biennials are denied benefit of clergy, and there is left to them the final but sufficient consolation that they can do very well without it. That we may not appear heathenish, it is proper to say that the clergy, philologically considered, are not necessarily employed in a sacred office—they are learned men; men who can read and write; men possessed of skill, science, and clerkship. As Blackwood remarks, "the judges were usually created out of the sacred order; and all the inferior offices were supplied by the lower clergy, which has occasioned their successors to be denominated clerks to this day."

But here is a digression. Well, we find figures of Canterbury bells in Gerard and Parkinson, but it is hard work to make them out, because they are badly drawn and confusedly described. But it is something to say for these old masters that if we want to trace the history of such a common plant we must ask them to help us, because modern authors aim so high that their shafts fly over many common but useful and beautiful things.

It is time to say something about the cultivation of this noble campanula, and it will be consistent with the

foregoing observations that, instead of following in the wake of the blind man who made a fiddle out of his own head, we turn to the pages of a great old master for a code of instructions. In the "Abridgement" of Philip Miller's "Gardener's Dictionary," quarto, 1761, will be found the following:—

"The third sort [*Campanula medium*] is a biennial plant, which perisheth soon after it hath ripened seeds. It grows naturally in the woods of Italy and Austria, but is cultivated in the English gardens for the beauty of its flowers. Of this sort there are the following varieties, the blue, the purple, the white, the striped, and double flowering. This hath oblong, rough, hairy leaves, which are serrated on their edges; from the centre of these, a stiff, hairy, furrowed stalk arises, about two feet high, sending out several lateral branches, which are garnished with long, narrow, hairy leaves, sawed on their edges; from the setting on of these leaves come out the footstalks of the flowers, those which are on the lower part of the stalk and the branches being four or five inches long, diminishing gradually in their length upward, and thereby form a sort of pyramid. The flowers of this kind are very large, so make a fine appearance. The seeds ripen in September, and the plants decay soon after.

"It is propagated by seeds, which must be sown in spring on an open bed of common earth, and when the plants are fit to remove, they should be transplanted into the flower-nursery, in beds six inches asunder, and the following autumn they should be transplanted into the borders of the flower-garden. As these plants decay the second year, there should be annually young ones raised to succeed them."

A note on campanulas in general may be useful. The best of them are hardy border flowers, that need no particular care, and thrive well in any ordinary good soil, but cannot endure to be starved or over-much shaded. In planting a border, preference in the first instance should be given to such sorts as *C. latifolia, C. trachelium, C. glomerata, C. nobilis, C. persicifolia.* For the rockery, the most important, to begin with, are *C. carpathica, C. garganica, C. pumila,* and *C. rotundifolia.* The last-named is the "harebell" of the hedgerow and the roadside and the woodland waste, which we have met with near Hayfield, in Derbyshire, in many shades of blue, white, and pink, but the plants and seeds we saved of the curious varieties lost their distinguishing characters when removed, so that when planted out on raised banks of sandy soil in the garden they all produced blue flowers.

CRASSULA

THE CRASSULA.

Crassula coccinea.

THIS is one of the handsomest and most useful plants of its class, and, in common with many other garden favourites, it presents us with several variations, the results of the manipulations of the florists. The reader who does not happen to know the plant may be advised to look first in the central avenue of Covent Garden Market in June and July. The accompanying portrait will certainly assist in the identification, but the chances are that the attention will be arrested by a batch of plants having the style of growth indicated by the plate, but with crowning corymbs of flowers of an intensely vivid carmine-scarlet colour. Now it may be proper to say that in nearly all botanical and horticultural inquiries and criticisms, colour is the last quality to be thought of, while form is the first. The splendid scarlet crassulas that will probably be seen in the market, and that one might imagine

to be floral emblems of fire-worship, are examples of the typical, or specific, or normal, or original *Crassula coccinea*, while the one here figured is one of its variations, for the plant gives us a choice of scarlet, crimson, carmine, and white flowers; but in every case the form and the habit of growth are the same.

There is not a plant in the country more worthy of the attention of the amateur florist than this. To grow it well a heated plant-house is absolutely necessary; but given that, the rest is easy. The first requisite to success is to raise a few young plants from cuttings, the best time for this being July. These, being rooted in three-inch pots, may be wintered in the greenhouse, where they must have plenty of light, and be safe from frost and drip. Give them the warmest and driest place in the house, and let them have sufficient water to keep the leaves plump, for if the leaves shrivel, the plants will be weakened.

As soon as they begin to grow in spring, shift them into five-inch pots. Hitherto they have been allowed to grow without check, but as soon as they are nicely established they should be stopped by nipping out the point of each. The plants must be kept rather dry for a day or so after this is done, because of the risk of the fleshy stem decaying. As the object in promoting the production of side-shoots is to secure a foundation upon which to build the specimen, the side-shoots must be tied out regularly, and pulled down a little, but not quite horizontally. They should also be allowed to grow unchecked until they are quite six inches in length, because a cluster of laterals round the main stem is not so much to be desired as a framework of stout side-shoots. As a rule, they require to be stopped twice the first season, and it is good practice

to shift them after the second stopping immediately the young shoots are about an inch in length.

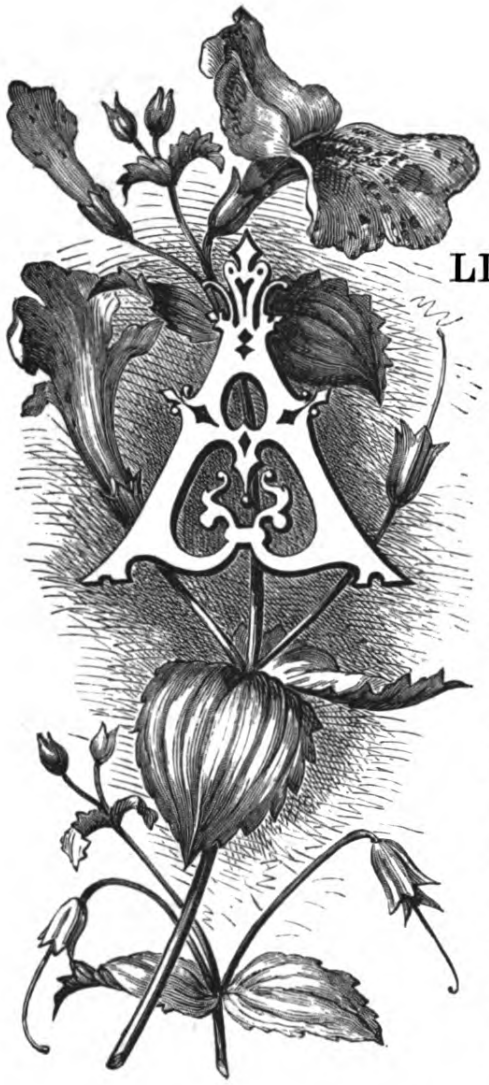
They should have during the second winter quarters similar to those occupied during the first, for a light position and comparative dryness at the roots are the main essentials in keeping them in good health during the winter. Early in the spring following, shift into eight-inch pots, and if it is not intended to flower them in the course of the summer, all the principal shoots should have the points nipped out shortly afterwards. The young stock ought not to be allowed to bloom until they assume their proper form, and this will not be the case until the third season from the cutting pot. If the growth made during the summer is satisfactory, they will require a second shift early in August, ten-inch pots being the most suitable for them at this stage; and after the re-potting the shoots must be tied out a sufficient distance apart, to admit of each receiving its fair share of light and air, and to ensure its being thoroughly matured.

They will require no further attention beyond the regulation of the growth, and supplying them with water, until after they have flowered, and then they will need pruning. As soon as the flowers fade, proceed to prune all the shoots moderately back—say, to within two inches of the base of each. When they have begun to grow again, turn them out of the pots, prune the long roots, and put them in pots of the same size again. Place in a cold frame, and keep the soil just moist until the roots have taken possession of it. The water supply can be increased moderately. After they have started fairly into growth, ventilate the frame freely, and when the young shoots are an inch or so in length, thin them out if there is any danger of over-

crowding; but, as the plants should attain a larger size each year, the young growth must not be thinned excessively, but as they progress be tied out neatly, to afford each a fair amount of space for its development. The same system of management must be adopted in subsequent years, so that it is not necessary to allude to it further. The compost should consist of three parts of good turfy loam, and a part each of leaf-mould, powdery manure, and grit. In training specimens, the cultivator should aim at producing a solid head of bloom, convex in outline, and not unlike that of a specimen show pelargonium.

Those who do not care to take so much trouble may allow their plants to flower naturally in the first summer, in which case it will be advisable to strike a few cuttings from them and then throw them away, for unless they are well managed they become long-legged unsightly things. But for the grand culture they are grand indeed.

MIMULUS



MIMULUS.

Mimulus luteus.

ALL the species of mimulus, or monkey flower, as it is very often called, of which there are about twenty known, are natives of the New World, and for the most part of its western coasts, their range being from Columbia in the north, to Chili, south of the equator. They are all moisture-loving plants, and therefore in cultivating them that must be considered. They are, however, so accommodating that almost any kind of soil will suit them, if supplemented by the water-pot; but they like good living, nevertheless, and fine specimens cannot be grown without the aid of rich loamy soil. The plant before us may be treated as a hardy perennial, and left out to take care of itself in the open border; or it may be treated as an annual, and will flower the same season if the seed is sown in March. But better still is to treat it as a greenhouse plant, raising a fresh stock every year

by seeds sown in heat, and flowering them early in a warm greenhouse. By this treatment, with the plentiful use of water, very fine plants may be produced. We have seen them so grown for Covent Garden Market, and a house containing a few thousand of the plants in flower presented a very pretty appearance, the brilliant green leafage being agreeably varied by the gay flowers, which have a yellow ground and are grotesquely spotted.

There are in cultivation several distinct varieties of this mimulus, differing chiefly in the colour of the flowers. And there are several other species equally worthy the attention of the amateur florist, both because of their beauty and the extreme simplicity of the cultivation they require, the point of chief importance being to indulge their love of moisture. *M. variegatus* has flowers curiously painted purple and yellow; *M. roseus* has flowers of a bright rose, in some degree resembling the newer kinds of begonia; *M. cardinalis* has scarlet flowers; and *M. cupreus* is of the colour of copper when just acquiring the dulness that follows soon after polishing. All these ripen seed in plenty, and may be most easily multiplied; but they may also be propagated from cuttings, or by division of the somewhat fleshy roots.

The best known of the family is the odorous musk plant (*M. moschatus*), a delightful occupant of the cottage window, and a most important plant at a cottagers' flower show. This is but rarely seen in the garden, but it is a good plant to occupy part of a border near a summer-house, in company with such things as the lily of the valley and the woodruff, to diffuse a delightful perfume. In common with these favourites, the musk has but to be left alone and it will reappear with them in the spring, and grow

thriftily, provided only it can obtain enough moisture. For growing in pots, the old-fashioned common musk is not now good enough, a variety with larger flowers and a finer habit of growth having been introduced through Messrs. Harrison, of Leicester. This is as fragrant as the original, and immensely superior in all other respects. This sort is known as "Harrison's musk."

The generic name mimulus refers to the gaping mouth of the flower, which may be likened to that of an ape—hence its more homely name of monkey flower. The figworts, to which order it belongs, are invariably characterised by the irregularity of the corolla, of which we have interesting examples in the mullein and the calceolaria. It will be observed in the figure that the calyx is also irregular, one of the toothed lobes being longer than the rest. All the species are remarkable for the irritability of the stigma. The two lobes lie rather wide of each other when not irritated, but if touched with a bristle they instantly close. This movement is, no doubt, connected with the process of fertilisation, and is a parallel to that of the berberis flower, the stamens of which suddenly clasp the stigma when touched at the base of the filaments with a bristle or needle.

The yellow mimulus is used in Peru as a pot-herb, and probably all the species are capable of a similar appropriation. The figwort family, however, is not to be hastily looked to for the supply of edible vegetables, for here we find the nauseous and narcotic foxglove, the bitter snapdragon, and the astringent speedwell—

> "That lifts its eye of the softest blue
> To the younger sky of the selfsame hue."

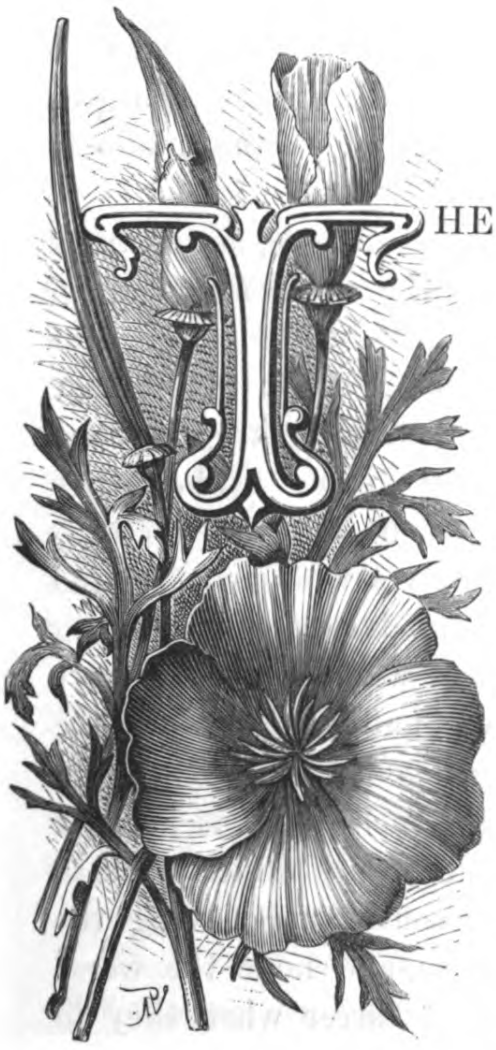
But if we do not get much food for the body out of the

figworts, they do not lack in food for the soul, very many of the genera being renowned for beauty, whether as wayside weeds or as valued occupants of the garden.

The following lines by Mr. W. Roscoe may suitably follow these remarks :—

"God of the changeful year!—amidst the glow
Of strength and beauty and transcendant grace,
Which on the mountain heights, or deep below
In sheltered vales, and each sequestered place,
Thy forms of vegetable life assume;
—Whether thy pines, with giant arms displayed,
Brave the cold north, or wrapt in eastern gloom,
Thy trackless forests sweep a world of shade;—
Or whether, scenting ocean's heaving breast,
Thy odoriferous isles innumerous rise,
Or under various lighter forms imprest,
Of fruits and flowers, Thy works delight our eyes;—
God of all life! whatever those forms may be,
O may they all unite in praising Thee!"

ESCHSCHOLTZIA



THE ESCHSCHOLTZIA.

Eschscholtzia Californica.

THE profane manner in which his name would be uttered and execrated for its inherent ugliness, and the perversity of writers and printers in spelling it, could never by any chance have occurred to Dr. Eschscholtz, happy in the midst of his flowers. Peace to his dust, honour to his memory, and may his name, as having a place in the roll of devotees of the goddess Flora, be henceforth and for ever spelt correctly.

This is a curious and interesting plant, and so nearly related to the genus papaver, that it may with propriety be called the yellow Californian poppy. The leaves are of a glaucous green, and much divided into narrow linear segments. The flower-bud is an elongated spiral cone, covered with an extinguisher-like calyx, which is pushed off upwards as the petals expand, and the flower rests on a fleshy

receptacle with a dilated margin, which has been, or might be, copied in many works of art. The seed-vessel is a long striated pod, altogether differing in appearance from the globular or urn-shaped pod of a true poppy, and it opens by two valves. For a study of plant structure this is a capital subject, and the young botanist will do well to grow a few tufts of Eschscholtzias in the garden, and give close heed to them in all their stages from the cradle to the grave.

The Eschscholtzias are classed as annuals, and may be grown as such, because they flower the first season if sown in February or March, or still better in the autumn, as advised in the paper on the Virginian stock. But they are true perennials, with persistent fleshy roots, and have but to be left alone to last many years. When they have become established in a garden it is not an easy matter to get rid of them, for they sow their seeds and spread as wildings, and as summer advances we see their gay flowers in all sorts of odd places where the plants have found suitable nooks for themselves, and have escaped the scratch of the weed-exterminating hoe of the gardener. In such cases what is to be done? Well, there is an easy way out of every difficulty, and the only difficulty is to know the way. In this case it consists in leaving the plants alone, for weeds they may be, and none the worse for that—why cut short their bright career when they do not even so much as cry, "Please, please give me a drop of water?"

The species and varieties of Eschscholtzias in cultivation are all worth growing, and do not amount to many. *E. Californica* produces flowers of a bright yellow colour, the petals blotched at the base with orange. *E. crocea*

differs from it only in having flowers of a saffron colour, and a receptacle rather more dilated. *E. compacta* has smallish flowers of yellow and orange, the margin of the receptacle almost flat. *E. tenuifolia* is very distinct, the leaves crowded, flowers numerous, colour yellow, the receptacle tubular, the margin very slightly dilated; a very gay and interesting plant.

The plants now under notice were amongst the splendid botanical acquisitions of David Douglas, one of the most capable and renowned collectors employed by the Horticultural Society. His principal explorations of the country watered by the Columbia river, and of California, were accomplished in the years 1825–6–7, and the results are to be seen in every garden and every catalogue of plants. He obtained many of the annuals that are now the most popular, also the curious tribe of lilies named Calochortus, some fine species of Ribes, and many more good things, not the least amongst them either in magnitude or importance being the magnificent Columbian fir (*Abies Douglasi*), which in its native country attains a height of 300 feet, and if we may judge by the noble specimen in the grounds at Dropmore, is likely to attain a similar stature in this country if enabled to hold its own against the storms of heaven and the destructive propensities of man.

The life of David Douglas was largely chequered with misfortunes. In a journal he sent, with collections of seeds, insects, birds, &c., from Western America, he relates that he had pursued his explorations when his knee was disabled by an accident, and his sight was so dim that he could hardly use his gun. And he humorously tells of an old chief at Oak Point named Tha-a-muxci, who had a profound yearning for the luxury of being shaved, and was

gratified by Mr. Douglas using his razor upon his face, in return for which kindness he accompanied the botanist "all along the coast and sixty miles up the Cheecheetin river." When he met with the giant fir that has been named in remembrance of him, he makes note in his journal that "new or strange things seldom fail to make great impressions, and we are often at first liable to overrate them;" and further on he remarks, "lest I should never see my friends to tell them verbally of these most beautiful and extremely large trees."

The career of Douglas was as brief as it was brilliant. At the age of 36, being then engaged in botanical explorations in the Sandwich Islands, he fell into a pit that had been designed as a trap for buffaloes, and wherein one had been already caught. The infuriated beast killed the intruder, but not without a struggle, for the unhappy man fought hard for his life. This occurred July 12, 1834.

LONDON PRIDE

LONDON PRIDE.

Saxifraga umbrosa.

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

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

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

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

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

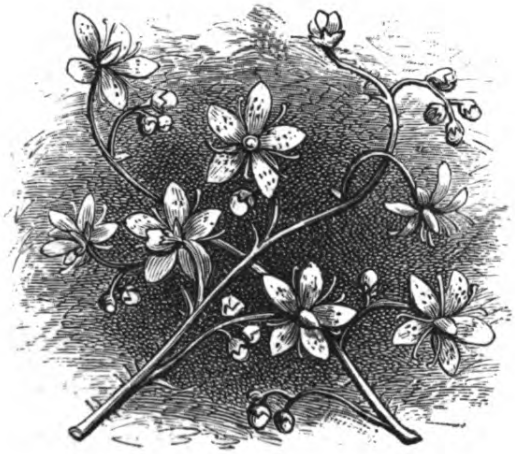
For a hint of the truth in respect of the plant before us we are indebted to Dr. Prior's "Popular Names of British Plants." He says:—"It is understood, upon apparently good authority—that of Mr. R. Howard, in the *Gardener's*

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

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

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

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



VIRGINIAN STOCK

THE VIRGINIA STOCK.

Malcomia maritima.

SO humble a flower is this that we should despair of making a sufficient vindication to justify the picture, but, happily, it is a representative of a very important class of garden flowers — the hardy annuals—with which most amateurs make an agreeable beginning in garden experiences. It is a cruciferous or cross-flowered plant, and in that respect might claim a lot of attention; for the wallflower, the stock, the aubrietia, the rocket, and the cabbage are cruciferous, and have some striking properties in common.

Hardy annuals are the cheapest flowers in the world; many of them are gay, and last long, and are delightfully fragrant, and all of them are interesting and pleasing more or less. It is usual to sow the seeds of these flowers in the month of March in patches along the borders, and the customary practice answers very well. The weak point in the practice, for the most part, consists in sowing too many

seeds and leaving too many plants in a clump, for, being crowded, they never acquire a proper degree of strength; and hence, if they flower freely, the flowers are small and are soon over. When walking round the kitchen garden, you will sometimes see a stray plant of parsley in the cabbage or onion plot, and it is sure to be robust and handsome, so that a punnet may be filled with its beautiful leaves, and still leave the plant looking pretty well. The reason this stray plant is so strong, while the parsley sown in the row next the walk is quite lean as compared with it, is that it has enjoyed plenty of air and light, as is the way of vagabonds; and hence their rude health and easy endurance of circumstances that would kill the pampered ones right away. Now and then a stray plant of Virginia stock may be seen in like manner, and then what a plant it is! We have met with single plants measuring six to nine inches across—a dense mass of healthy herbage, completely smothered with flowers half as large again as those produced on the thin, wiry plants where they are crowded in clumps on the regulation pattern. And yet this lesson, so obvious and so forcibly taught by nature, amateur gardeners are very slow to learn, and they will go on sowing Virginia stock and mignonette as if they would pave the ground with the seed; and, when the plants are up, will throw away the second chance of success by refusing to thin the plants, as they should, to from three to six inches apart.

Annuals are occasionally grown in first-rate style, and if well selected are, in the early part of the summer, remarkably effective. There is almost only one point of importance in the practice, and it consists in sowing the seeds *in the autumn*.

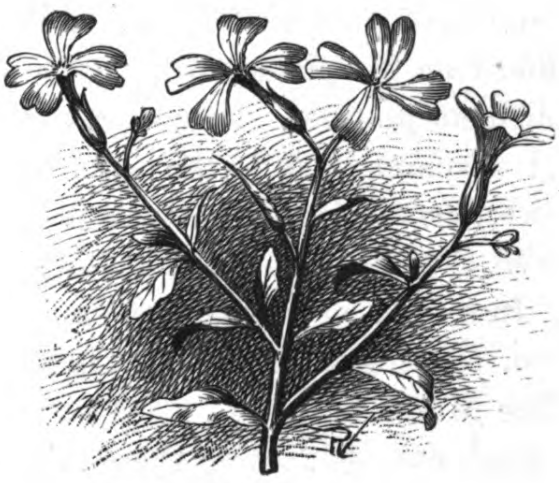
Let us now address ourselves to this subject. When annuals are sown in autumn, it should be on poor, dry ground. The object is to build up the plant slowly, as a mountaineer that is thinly fed becomes sturdy through constant exposure to all the airs of heaven more than by the aid of such nourishments as are strewn in the lap of luxury. The time of sowing must be regulated by the latitude and local circumstances: in the far north, the end of July is none too soon; in the midlands, the middle of August is soon enough; in the south, the sowing may be prudently delayed until September; and in the far south, where geraniums often live through the winter, October is soon enough. The object of sowing in autumn is to give the plant the longest possible time to accumulate the substance requisite to the production of flowers. But if we sow too early for the district, the plants may become stout and succulent before the winter frost occurs, and when the frost comes it may kill them. Hence the necessity of in some degree adapting the season of sowing to the averages of the local climate.

The safest mode of procedure is to sow in an open spot, on poor soil, and thin the plants to about two inches apart before they touch one another. In spring, when the weather is favourable, transplant them to the spots whereon they are required to flower, and do this as early as possible, that they may become well established before they begin to throw up their flowers. In a mild, open season the middle of February is none too soon for this work; but it should anywhere be completed before March is out.

In places much exposed, where there might be a risk of losing the stock in the winter, the seed may be sown on beds made up for the purpose in turf pits. In this case

they must have plenty of air to keep them short in stature and hardy in constitution.

The following are the most useful sorts of annuals for sowing in autumn:—*Calandrinia grandiflora*, rich purple, twelve inches in height; *C. speciosa*, purple, twelve inches; *Calliopsis bicolor*, golden yellow, three feet; *Clarkia elegans*, lilac, two feet; *C. pulchella*, rose-purple, eighteen inches; *Collinsia bicolor*, purple and white, twelve inches; *C. multicolor*, crimson and white, twelve inches; *C. verna*, blue shaded, twelve inches; *Erysimum Peroffskianum*, orange-yellow, exceedingly showy, eighteen inches; *Eschscholtzia crocea*, orange, twelve inches; *Gilia tricolor*, white and purple, twelve inches; *Godetia Lady Albemarle*, brilliant crimson; *G. rubicunda splendens*, purple, eighteen inches; *Iberis umbellata*, in variety, ten inches; *Nemophila insignis*, blue, six inches; *Platystemon californicum*, sulphur-yellow, six inches; *Saponaria calabrica*, deep rose-pink, twelve inches; *Silene pendula*, pink, fifteen inches; *Viscaria oculata*, rose-purple, eighteen inches.



ROSE OF SHARON

THE ROSE OF SHARON.

Hypericum calycinum.

"I AM the rose of Sharon, and the lily of the valleys. As the lily among thorns, so is my love among the daughters. As the apple tree among the trees of the wood, so is my beloved among the sons. I sat down under his shadow with great delight, and his fruit was sweet to my taste." Thus, in the "Song of Songs, which is Solomon's," the rose of Sharon associates with luxurious vegetation, a happy frame of mind, an expectation satisfied, and is the symbol of a blissful inspiration. Sharon is all that country west of Jordan that lies between the mountains of Central Palestine and the Mediterranean—a country comprising the pastures whereon David's cattle grazed—a country, too, of woods and waters, which might with propriety have been named Goshen, the Flowery Land. The rose of Sharon, therefore, must be a flower

renowned for beauty, or fragrance, or some special quality that would command the attention of a writer of holy song when his imagination sought for emblems wherewith to strew the banqueting house that was adorned with the banner of love. It is impossible for any one to determine what particular flower the text refers to. There are at least half a dozen species of wild roses in Palestine, and the cabbage and damask roses are, and for any length of time past have been, cultivated there. But the difficulty is for the lexicographers and the travellers first, and the botanists afterwards. The mallow produces gorgeous masses of colour in the plains of Sharon, and may be the "rose" that Solomon has so charmingly dignified. But the lily and the narcissus also abound there; and the word rendered "rose" in the English version is of such general application that it might in some cases be translated half a dozen different ways without any perversion of the spiritual or poetical purport of the text. Its association with the "lily of the valleys" suggests something different to either the rose or the *hypericum*, such as some shade-loving bulbous plant. Mr. George Grove indicates his belief that the rose of Sharon was the "tall, graceful, and striking squill."

It was the opinion of Linnæus, in which he was supported by observant travellers, that a species of cistus is the real rose of Sharon. Our pretty *Helianthemum vulgare*, which produces most elegant yellow flowers, and thus forms rich carpets of gold on ledges of rock in limestone districts—notably in Bonsal Dale, Derbyshire—is the best representative, probably, we have of this view of the case. The particular plant, however, which Linnæus elected to the honour is *Cistus roseus*, a plant more

abundant in the eastern mountainous districts of Sharon than are any of the true roses, or than our rock-rose is on the limestone ranges of the midland and northern counties.

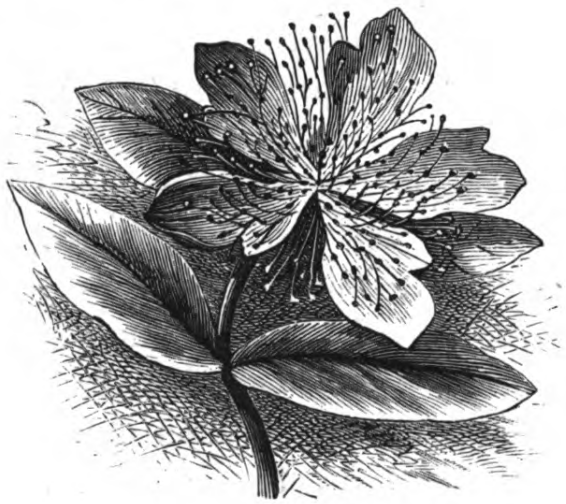
Thus we have got far away from the plant figured, although in gardens it is known as the "Rose of Sharon" and as "Aaron's Beard." Its claims to be called by the first of these two names are not entirely disposed of by the considerations already entertained. It is a woodland plant, and thrives under the shade of trees. It is not wanting in the flora of the Holy Land, and in Syria occur several species of *hypericum*.

As a garden plant, *Hypericum calycinum* is especially serviceable to clothe banks and borders that are shaded by trees, as it spreads over the ground somewhat rapidly, and forms a rich surfacing of glossy leaves of a full green colour, which, in the later days of summer, are overspread by large, handsome, yellow flowers, with very many beard-like stamens. This plant will thrive in any good soil, and it is scarcely less healthy in the smoky town than in the country garden.

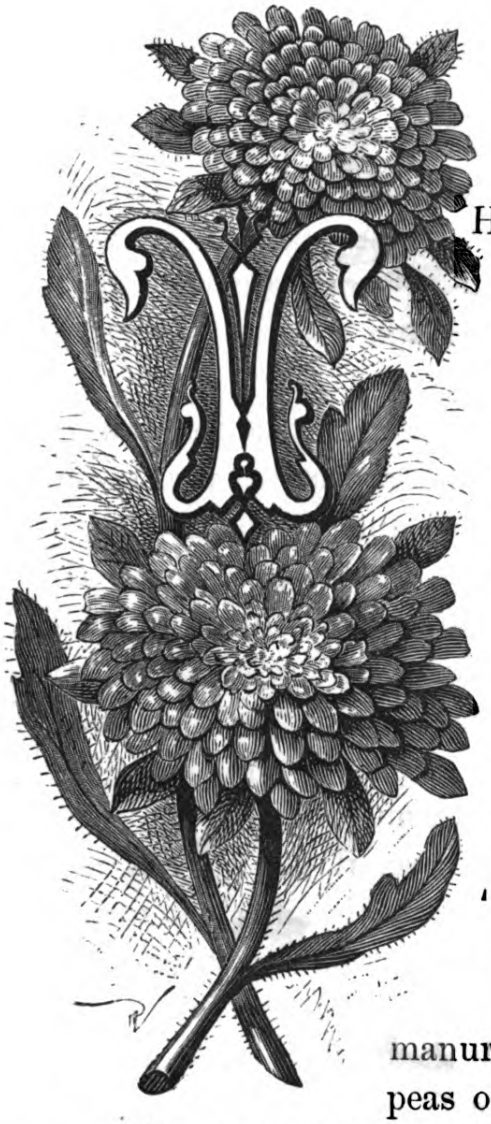
The common St. John's wort was a Druidical plant, and is still looked upon with superstitious reverence in many rural districts, as peculiarly fitted for a spell or charm. Many curious ceremonies are still performed in villages on Midsummer Eve and the succeeding morning, distinguished as the day dedicated to St. John. These performances have a peculiar interest to young maidens and bachelors, and like those of Halloween, in Scotland, are believed by the superstitious observers to lift the veil of futurity for the coming year, and enable the inquirers to prognosticate their lot for married or single life. These practices still prevail in many parts of the Continent.

In Lower Saxony the young girls gather sprigs of St. John's wort on the eve of St. John, and secretly suspend them on the walls of their chambers, with certain mysterious ceremonies. The state of the plant on the following morning indicates their future fate. If fresh and undrooping, it foretells a prosperous marriage; if fading and dying, the reverse. The plant is influenced by the condition in which it is placed, and those who have damp walls are the more likely to have prosperous marriages than those whose walls are as dry as they should be. There is wisdom in this; the sooner the former are married and comfortably housed, the safer are they from attacks of rheumatism. There is a pretty German legend of this superstition, the first six lines of which indicate its tone:—

"The young maid stole through the cottage door,
And blushed as she sought the plant of power.
'Thou silver glow-worm, oh, lend me thy light;
I must gather the mystic St. John's wort to-night:
The wonderful herb whose leaf will decide
If the coming year shall make me a bride.'"



ASTER



THE ASTER.

Callistemma hortensis.

THIS charming flower, which ranks with the balsam in importance as an annual, has no history, and is nothing unless well grown; therefore the best employment of the space at our command will be to frame a compact essay on the cultivation of the aster in first-rate style, with a view to the production of flowers good enough for exhibition.

It is impossible to grow good asters in a poor soil, and the water supply should be constant and plentiful. If grown in the same bed every year, it should be regularly well dug and tolerably manured, as if intended for a crop of peas or cauliflowers. But finer flowers may be secured by growing them every year in fresh soil that has not carried asters before, or at least only once in seven years or so.

The seed is usually sown too early, and the plants get starved before the season is sufficiently advanced to allow

them to be put out. The last week in March is early enough for the first sowing, and a cold frame will be the best place for the pan or box in which the seeds are sown. For all ordinary purposes it is not desirable to sow until about the 15th of April, as there is then no probability that the plants will suffer a check. The young plants should have as much air and light as they can bear, the cultivator, of course, keeping in mind that they are tender in constitution. If they have insufficient light they will become weak and wiry, and if insufficient air they will soon be smothered with green fly, and thereby seriously impoverished.

As soon as large enough to handle, prick out the young plants in a bed of light rich soil in a frame; put them three inches apart, water them well, and keep the frame rather close for two or three days; then give air with caution, and increase the ventilation daily, and they will become strong and well prepared for planting out.

A bed for asters should be made ready a few weeks before it is wanted. The third week in May is soon enough for planting out, and dull warm weather should be chosen for the business; in any case, if the nights are frosty, the plants had best remain in their snug bed under glass until a change occurs. If put out in sunny weather, turn empty pots over them for a day or two to save them from exhaustion. As a rule, they should be planted a foot apart every way, but this rule may be varied as circumstances may suggest. They should be lifted with care, so that every tuft of roots is kept intact, and should be firmly though gently pressed into their places, and then have a good watering to finish the work. The remainder of the management will consist chiefly in watering and weeding,

and both tasks must be pursued assiduously, or the flowers will be below exhibition mark.

Well-grown plants will usually produce more flower-heads than they can fully develop; therefore it is a nice point to thin them in good time. The beginner may with advantage remove all the heads save the centre and three side shoots, thus leaving only four heads of bloom to each plant. As experience is acquired, the rule may be varied, and it will be found that French asters require to be thinned more severely than German, which may in a good soil be allowed to carry half a dozen; but they should never be thinned down to one or two, because while this spoils the appearance of the plants, it does not result in the production of better blooms, for when asters are grown beyond a certain degree of strength they are likely to become coarse.

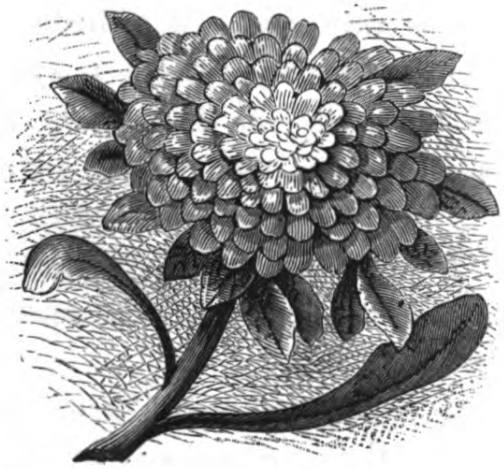
In a hot dry season, asters are peculiarly liable to the attacks of "red spider" or acarus, and "green fly" or aphis. A precaution often adopted to prevent this consists in covering the bed with a mulch of two or three inches of half-rotten dung. This should be put on as soon as the crown bud is visible, and should be followed by regular and copious watering. The healthy and vigorous growth that this treatment promotes is calculated to keep insect foes at a distance, for the sickly plant is soonest attacked by them. When the young plants are infested by green fly it is safer to dust them with tobacco powder than to use any kind of wash. As a rule, indeed, tobacco powder is always to be preferred, because dry and clean and easily washed off.

The immense popularity of the aster accounts for the number of varieties that are offered in the seed lists, for

one of the first objects of the cultivator of a flower is to promote variation and establish the most distinct and beautiful varieties. For exhibition purposes the best varieties are those known as the Victoria, French Pæony, Giant French, and Betteridge's.

For large beds, mixtures of colours are desirable, but the flowers should be uniform in style, and therefore only one sort or section of asters should be grown in a bed. Those who know the sorts well may indeed use several in the same bed, but the safe way for the beginner is to be content with one or two—say a moderately tall kind for the mass, and a dwarfer sort for the margin. One of the best sorts for beds is the Tall Chrysanthemum-flowered, and the Globe German may be used next the margin. The Washington makes a fine bed, with immense flowers of all colours. If a choice dwarf sort is wanted for a bed, there is, perhaps, none better than the Dwarf Pæony Perfection.

For pot culture the Dwarf Victoria, Dwarf Schiller, and Dwarf Chrysanthemum-flowered are invaluable, and in common with other kinds may be had in a variety of colours. To grow them well in pots great care is requisite.



COMMON MARIGOLD

THE MARIGOLD.

Calendula officinalis.

FROM the common marigold here faithfully figured, and suggestive of soup, to the delicate French marigold, *Tagetes patula*, that the florists grow for exhibition, and bring to a perfection of geometric marking that makes a place in floriculture for mathematics, what a stride! Fifty years ago a flower show of a very individual nature engrossed my attention and made a very deep impression on my mind. It consisted entirely of common marigolds, and the scene was the churchyard of St. Botolph, Aldgate, where these flowers had run wild, and, as wild things are wont to do, had taken care to keep the race going, so that there should be no lack of wild marigolds from year to year, for in truth the ground was literally covered with them as with a pavement of stars stamped out of the rinds of oranges. At that early date I had heard, but had never tasted, of soup flavoured or adorned—I knew not which—with

marigolds, and I stole and munched a flower, and was lost in the admiration of contempt for the people who could put such trash into soup, whether for flavouring, beautifying, or any other purpose. My father, being a florist to the backbone, would not tolerate a common marigold, and so I had to play the thief to gain the knowledge of the comparative worthlessness of marigolds in clear ox-tail. Within a few weeks of writing this I have had to judge at a flower show where the study of French marigolds occupied me nearly an hour to award the prizes to my satisfaction. What a stride! But Providence gave me years to accomplish it, with enjoyment at the beginning and the end and at all the intermediate stages. To stride over marigolds, beginning with soup and ending with the fine arts, is not a particularly noble business, but one might do worse; one might be M.P. for Battle Bridge, for example, or confessor to the pirates of the *Flowery Land*. When the churchyard marigolds enraptured me I had not read Shakespeare, but I call to mind now his association of them with the grave in the fourth act of "Pericles"—

Enter MARINA, *with a basket of flowers.*

"No, I will rob Tellus of her weed,
To strew thy green with flowers: the yellows, blues,
The purple violets, and marigolds,
Shall as a carpet hang upon thy grave,
While summer-days do last. Ay me! poor maid,
Born in a tempest, when my mother died,
This world to me is like a lasting storm,
Whirring me from my friends."

The marigold is a very important flower to the sentimental. "As the marigold to the sun's eye," so is anything you like to speak of for its constancy. The marigold

is a "sunflower," and, in common with the helianthus, is said never to turn its face from that part of the heavens where the sun is, whether seen or invisible. In the "Winter's Tale," Shakespeare speaks of "the marigold that goes to bed with the sun and with him rises weeping," a state of things that necessitates the facing of the flower to the northern regions of the heavens all through the night. One of the most beautiful of the poetical fancies, founded on the idea of a flower following the sun, is the little poem by George Wither:—

"When, with a serious musing, I behold
The gratefull and obsequious marigold,
How duely, ev'ry morning, she displayes
Her open brest, when Titan spreads his rayes;
How she observes him in his daily walke,
Still bending towards him her tender stalke;
How when he downe declines, she droopes and mournes,
Bedew'd (as 't were) with teares, till he returnes;
And how she vailes her flow'rs, when he is gone,
As if she scornèd to be lookèd on
By an inferiour eye; or, did contemne
To wayt upon a meaner light, then him.
When this I meditate, me-thinkes, the flowers
Have spirits, farre more generous then ours;
And give us fair examples, to despise
The servile fawnings, and idolatries,
Wherewith we court these earthly things below,
Which merit not the service we bestow."

Florists' marigolds are very delicate things. The Africans we will not speak of, because anybody can grow them, and they are horribly coarse; but the French are delicate things, and worthy of all reasonable care to ensure fine quality. And yet with these the chief matter is to get good seed, for the qualities the severe judges of flowers

require are more the result of hybridism and selection than what we understand by the term "cultivation." But having secured the seed, sow it in a gentle hot-bed in April, or in pots some time in May, in which case a hot-bed will not be wanted, as the seed will soon germinate in a common frame. Prick out the young plants into boxes, filled with light rich earth, as soon as they are large enough to handle; and very soon after, the plants being stout and healthy, put them out in a bed open to the full sun, and carefully water and shade until they begin to grow freely, and then give no more shade and no more water unless the summer happens to be very hot and dry, in which case you must water regularly and copiously—say, to soak the bed well twice or thrice a week.

FUCHSIA

THE FUCHSIA.

Garden Variety.

Fuchsia spectabilis.

THE fuchsia is beyond doubt one of the most beautiful of our familiar garden flowers. Now, everybody knows how beautiful it is, and as gilding refined gold is a wasteful excess, we solemnly promise not to waste another word in general remarks on that matter. But of its interest? It has no place in history, and no poet of renown has written an ode in its honour. No. But it represents the floral wealth of certain of the richest and poorest parts of the earth's surface. It extends as a genus along the Pacific sea-board of South America, from sunny Cuenca to the cold and cloudy Falkland Islands, and if aided with just a little warmth would no doubt run into the Land of Desolation, and compete for supremacy as a vegetable curiosity with that nondescript thing the Kerguelen cabbage. But it loves a land of luxury nevertheless, for we meet with

thickets of fuchsias, like thickets of bracken, only a million times more glorious, in the rainy parts of Brazil, and Peru, and Mexico, and Venezuela, and Guatemala, and learn therefrom that the plant does not disdain warmth, and is decidedly fond of moisture. It is in no respect a wall flower, for it simply cannot live on a dry crust, and so the key to the cultivation of the fuchsia is to provide it with a rich soil in close proximity to the water-butt. If only for one thing the fuchsia is an interesting plant, for an English cultivator, who understands it as well as any man living — Mr. Cannell, of Swanley — has declared that fuchsias should be grown exactly as radishes are, and, absurd as it may sound, it is almost exactly true. Well, to grow really tender, mild, sweet, delicate radishes, you must grow them quickly—a warm, rich, moist bed, plenty of light and air, and be quick about all the business. And this, in the concrete, is just the right rule for the fuchsia grower. Be quick about it. Put the cuttings in a moist, warm bed; put the young plants in a light and very rich soil; do not give them very much air, and be sure they have enough water; and shift them into larger and larger pots until they are as large as you require, and then let them flower, and presto! you will have fuchsias. You may call them radishes if you like, but it will be more proper to call them plums, because the double purple fuchsias are like miniature plum-trees when in flower, and the fruits of all fuchsias are eatable, and make good tarts, provided they are assisted with lemon-juice, sugar, &c. &c., for their own proper flavour is somewhat flat, green, and poverty-stricken. To grow handsome pot fuchsias is about as easy as anything in the way of first-class floriculture; but comparatively few amongst the many who put their hands to the

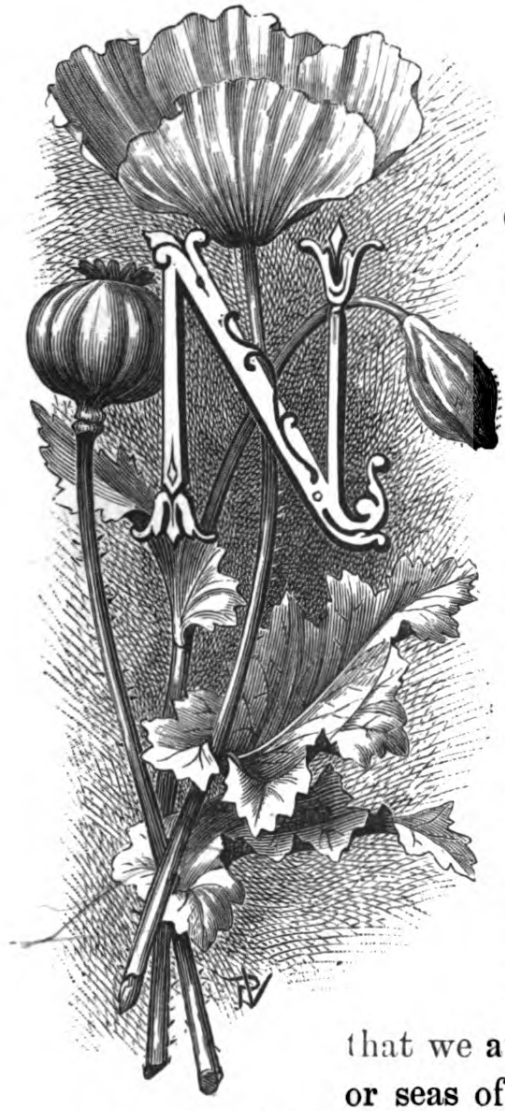
task attain to complete success. And why do they fail? Well, sometimes through using a poor, harsh soil, but more often through exposing the plants to cold draughts, and giving insufficient water, for the fuchsia is a thirsty plant, and some of the hardier species are natives of climates that are characterised by the peculiarity that "the rain it raineth every day" and every night also.

Hence another point of interest. It is in the moist climates of Britain that we meet with the most splendid garden fuchias. In the Isle of Wight, in Dorset, Devon, Cornwall, in a few places on the Welsh coast line, and in many places in the West of Scotland the fuchsia becomes a gigantic fountain of coral drops, a genuine surprise and wonder to the noble tourist who, in London, or Norwich, or Hull, has seen the garden fuchsias make a wiry growth of one to two feet at the utmost, and look like pensioners in arrear of their pay at the best of times. The bushes in the west, more especially of the splendid *Fuchsia Riccartoni*, are gigantic, and one might almost say that an army could encamp in the pleasant shadow of one of them. The equable temperature of the western coast is greatly in their favour, but the humidity of the atmosphere is the chief cause of their lustiness, and the amateur florist may take the hint, and if bent on having splendid fuchsias would do well to make special arrangements with the water company. While waiting to make peace with the purveyors of drink, let him give attention to the growth of radishes, remembering that fuchsias are to be grown in nearly the same way.

The splendours of the exhibition fuchsias are well known, but few, even of experienced horticulturists, are familiar with the more distinctive and noble species,

such as *F. serratifolia*, *F. corymbiflora*, and *F. spectabilis*, which are unique in their characters as conservatory plants. Of the extreme capabilities of the more vigorous species, we have examples in the Crystal Palace at Sydenham, where several of the pillars are clothed to the very top with fuchsias, the result being a wondrous display of vegetable beauty. In the small greenhouse, *F. fulgens* is invaluable for its large and handsome leafage and its exquisite long-tubed flowers.

POPPY



THE POPPY.

Papaver somniferum.

No more interesting flower is to be found in the garden than the poppy, and a certain few kinds are extravagantly beautiful, though lamentably short-lived. It is essentially a classic flower, having from the most early times had a place of honour on the brow of the divine Ceres: for it was not left for the people of this century to discover that poppies love to grow amongst the corn. Our blazing red poppy, that oftentimes, as we hurry along through the sunshine in a railway train, spreads abroad in sheets, and suggests that we are riding through lakes of blood or seas of fire, according as the light or the fancy may glorify the common-place fact—this scarlet poppy (*Papaver rhœas*) is, in some respects, distinct from the classic poppy, for it has an urn-shaped capsule, whereas the classic poppy (*P. somniferum*), which is the common field flower of Greece, has a roundish capsule, and the flowers are as com-

monly white as those of the British poppy are commonly red. It is, however, a sportive plant, and is met with in a variety of colours, of which the sample here figured is perhaps the most pleasing. The distinction we appear to make between the field poppies of England and Greece must be understood to apply to them only as common flowers of the field, for our red poppy is to be found in Greece, and the Greek white poppy is to be found in England; but in each case we may say of them they are as strangers and pilgrims.

Our business is to regard the poppy as a familiar garden flower, and we are therefore bound, in the first place, to say that the "pæony-flowered" and the "double-fringed" poppies that are described in the seed catalogues, and that are to be regarded as "garden poppies" in the fullest sense of the word, are really splendid flowers of their class, and perhaps the cheapest splendours available for the English garden. That they last "no time" is rather an advantage than otherwise, because, having startled us by their noble forms and gorgeous colours, they wisely get out of the way to make room for something else, as if well aware that the evanescence of fireworks is one of their charms: for what would become of us if they were to sparkle and crackle all night? But there are other and nobler garden poppies, different in style, but not necessarily more pleasing, but, all things considered, very much to be desired by those eclectic souls who look upon the garden as a sort of open-air museum for things curious and beautiful. We must therefore attempt a little essay on garden poppies.

All poppies, without exception, thrive best when fully exposed to sunshine and air, and on a dry, gritty soil.

They prefer silica to chalk, and hence our red poppy often betrays the poor gravel it is rioting on; and its love of a dry foothold is proved by its happy state when located on the topmost ridge of some old castle wall, where it seems to outdo the snapdragon and the wallflower in its capability of living on nothing. But note what a starved thing it becomes when in this way beating the Frenchman's horse, and learn therefrom the lesson that even a poppy requires a certain amount of wholesome food. With this philosophical observation we conclude the first part of the practical essay.

It is a characteristic of poppy plants to make tap-roots: hence, in transplanting them, there is usually a season lost, because the inevitable breaking of the tap-roots prevents flowering the next season. But if the transplanting is done with care during moist, cool weather, it will not be attended with loss, because the plants have but to be left alone and they will make new tap-roots to replace those that have been broken by removal. When the plants are raised from seed, only a few should be sown in a pot, and of these the weakest should be removed as soon as possible. By carefully planting out from pots so prepared, serious injury to the tap-roots may be avoided; and that part of the business should be kept in view as of primary importance in the cultivation of poppies.

In the selection of garden poppies, the showy annual kinds should, as remarked above, have special attention; and the shortest way to deal with them is to sow them where they are to stand, and thin them out in good time, so that they do not crowd each other injuriously. The most generally useful of the perennial poppies is the great scarlet, or Siberian poppy (*Papaver bracteatum*). This is

well known for its neat, compact growth of greyish saw-toothed leaves, and its profusion of vivid orange-scarlet flowers in the early days of summer. This forms a deep tap-root, and should be handled with care in removal. As it produces new crowns in plenty, the readiest way to increase it is by division; but it seeds freely, and therefore can never be a scarce plant.

In the production of the potent drug, opium, several species of poppy are employed. The "proper" plant is *Papaver somniferum*, from which opium of the best quality may be obtained, not only in semi-tropical climates, but in England. The drug is obtained by making slight incisions in the green capsules, the result being that a milky exudation appears in the line of the wound, and this being scraped off is crude opium. Of its further preparation, and of its uses and abuses, it will not be expected there should be any disquisition here.

BALSAM

THE BALSAM.

Impatiens balsamina.

IN some of the books the plant is catalogued as *Balsamina hortensis*, but as a rose by any other name would smell as sweet, the amateur gardener need not be troubled about the relative claims of the respective designations. The garden balsam is a tender annual of rapid growth, with an extremely succulent stem, ample full green leafage, and showy flowers of various shades of white, red, rose, and crimson. The generic name *Impatiens* is explained by the behaviour of the plant when the seeds are ripe, for, on the slightest touch, the seed-pods burst, and the seeds are scattered; and this impatience of the plant may occasion to the cultivator considerable loss. But there is a way out of every difficulty, and the only real difficulty is to know the way. In this case it consists in removing the pods when they are nearly ripe, and placing them on a cloth

or newspaper, or in a bell-glass placed mouth upwards, to ripen; then, as they arrive at perfection, the seeds will be shed, and none will be lost, and if the plants were good, the seed will pay for the trouble of saving.

It is a very strange thing, and hardly to be believed, that there is not to be found in any systematic treatise on gardening a really good code of balsam culture. In plain truth, the books are all wrong upon the subject, and as the opportunity is now offered to put them right, we propose to do so. Let it be understood, then, to begin with, that the right way occasions less trouble than the wrong way, and the result is a free development of healthy leafage and splendid flowers. The essence of the proceeding consists in growing the plant generously and somewhat rapidly from the first, and guarding it against any possible check. Suppose we desire to have a fine bed of balsams. We secure the very best seed, and sow it in light rich soil, in pans or boxes, in the month of April. These pans or boxes should be placed on the sunny shelf of a greenhouse, or in a warm corner of a pit, and be kept moderately watered. The plants will soon appear, and as soon as they have about three rough leaves, they should be pricked out, three or four inches apart, in other boxes, in light rich soil; or be potted separately in thumb-pots, and be again nursed in the warm pit or greenhouse, where they should have plenty of air, and never suffer in the least through lack of water. If they grow fast, and the weather is too cold to permit of planting them out, give them a shift into 60 size (three-inch) pots before they become pot-bound, for, as remarked above, there must be no check whatever. When the weather is warm and dull, say about the first or second week in June, plant them out in a sunny position, in rich

deep soil. We have put them at two feet apart, and they have met long before the season was over; but, for a general rule, perhaps one foot distance may suffice. Give them plenty of water in dry weather, and *that is all you need do to them.*

In the event of requiring nice specimens in pots, it will be advisable to sow in March, and start the seeds on a hot-bed; then proceed as advised in raising plants for a bed, but instead of planting them out, keep shifting into larger and larger pots, until it is time to stop, and allow the plants to flower. As a rule, an eight-inch pot is large enough for a very fine plant, and a dozen or two in pots of six to eight-inch size may be turned to good account in the conservatory. When grown in this way, they must have good living and plenty of water, be protected from cold and drying winds, and excessive heat, but always have the fullest daylight and plenty of air. If they appear rather too long in the stem, put them down a little in potting, and the buried portion of the stem will soon throw out roots to the advantage of the flowers that are coming. They require no stakes and no shading, and if the foregoing brief directions are fairly well carried out, *that is all you need do to them.*

The reader may be ready to exclaim, "I see nothing peculiar in this," and the reader who so exclaims is quite in the right. But turn to the books, and you will find a complicated process prescribed, and so in balsam growing the lover of complications may be gratified. Here is an extract from a respectable book of reference, and there is really something in it:—"When you cannot accommodate any but the best flowers in the greenhouse, adopt the following method. After pricking out into three or four-inch pots, and plunging them in the bed, allow the pots to

get full of roots, keep them drier and cooler, and give plenty of air, which will soon cause flowers to appear; then select plants with best flowers, rub every flower-bud off them, fresh pot, disentangling the roots a little as you proceed, and grow them on as advised above; and what you lose in time you will make up in selectness." These directions provide for a check by allowing the plants to become pot-bound, and for another check by the process of rubbing the flower-buds off, so as to compel the plants to produce another crop. And what is the result? Tall, attenuated plants, with poor flowers on the side stems, and no fine flowers anywhere. We see numerous wretched balsams at flower shows that have been grown in this way. Now, let us ask Nature about it, and her reply will be that the finest flowers are the first produced, and appear in the centre of the plant; therefore the removal of the buds is a mistake, and the imposition of any check is a mistake, and there is no balsam so beautiful as the one that has been generously grown and allowed to flower at its own time and in its own way.

TULIP

THE TULIP.

Tulipa Gesneriana versicolor.

TO speak wisely of the tulip in four small pages of large type—how is it to be done? It can only be done, if done at all, by concentrating attention on matters of practical importance and ignoring matters that a lover of flowers may be ignorant of to advantage. This is the preface.

Tulips have been cultivated from time immemorial, but the so-called tulipomania is of too recent a date to have acquired the flavour of antiquity. It was at its height from 1634 to 1637, and was soon over; like any other bubble, it was too thin and too hollow to last. The records of its extravagances tax our powers of belief, but few histories of mistakes and follies are so amply illustrated with evidence we cannot dare to question. In the register of the city of Alkmaar, 1637, is an entry of a sale of tulips for the benefit of the Orphan Hospital, when 120 bulbs were sold for 9,000 florins, and one of these—the Viceroy—

brought 4,203 florins. A florin then represented a bushel of wheat, and by this standard the value of the single bulb may at any time be estimated in current money. With wheat at 50s. the quarter, the equivalent in money would be about £1,314. Beckmann relates that about half an ounce weight (400 perits) of the variety named Admiral Leifken was sold for 4,400 florins, and half that weight of *Semper Augustus* realised 5,500 florins. In the "History of Inventions" the story is fully and amusingly told, and we should but waste our space in attempting to repeat or summarise it. But we must warn all that the florists had nothing to do with it. The gamblers and speculators knew nothing of the flowers but their names and the latest prices realised. A certain number of Dutchmen had gone mad, and another body of Dutchmen were ready to profit by the event. If the history casts any reflections of an unpleasant nature, they do not fall on the florists in particular, but on human nature in general.

The class of tulips in which the florists take especial delight are not, generally speaking, costly; but the difficulty of obtaining them, in the first instance, the peculiar nature of their special technical merits, and the slow rate at which, in many cases, they are multiplied, combine to invest them with a considerable money value during the early years of their appearance. In this respect they are like other commodities, but the demand, though limited, being pretty constant, the money value of tulips does not fluctuate with anything approaching to violence. Within the experiences of the present generation, the highest price offered for a single bulb was £100. Mr. Goldham refused an offer of this amount for a bulb of Louis XVI.

The highest catalogue price of a single bulb in late years is £20, this being the sum named by the late Mr. Lawrence for a bulb of Charles Williams; and it might be that the variety was entered at a higher price than any one would pay to keep down the demand until a reasonable stock could be secured by propagating. In the catalogue of tulips issued by a well-known florist there are 234 sorts named. The highest price for any one is 63s., and at this price there are three entered—namely, Everard, Duchess of Cambridge, and Gem of Gems. A considerable number of noted sorts are entered at from 2s. 6d. to 5s. each; and the aggregate of the prices of the 234 sorts is £81, less 6d., or an average of a fraction under 7s. each. A thoroughly good bed of tulips may be purchased for £60; and those who enter upon tulip culture cautiously and with good judgment may in a few years accumulate a collection of real merit at considerably less cost than will appear from these considerations.

But the lover of gay garden flowers need not enter into these considerations, for the early tulips, which the florists do not recognise, are better adapted for grouping in beds and growing in pots for the conservatory than the late or exhibition tulips; and the best of these may be purchased at 15s. per 100, and if named varieties are not wanted, for half that rate. As the history led us into the money question, it appeared a matter of duty to intimate that a short purse might cover a long list of tulips. But here we must quit the subject, and this completes the history.

In this country tulips are found to thrive best in sandy loam enriched with a moderate amount of rotten hot-bed manure and leaf-mould. A rank soil, such as would suit cauliflowers, is above all things to be avoided, and wherever

sand is cheap it should be used in plenty. In Holland, tulips are grown for the market in a dark-coloured peaty sand, of so loose a texture that the workmen have to wear sand-shoes, which are like little tea-trays tied to their feet, to prevent them sinking into it. This sand is first enriched with cow manure in very considerable quantity, and is then planted with potatoes; the next year it has no manure, and is planted with hyacinths. The next year again it has no manure, and is planted with tulips.

In selecting tulips, the catalogue of a trading florist will furnish ample guidance, and the prices will show how to cut the coat according to the cloth. The Van Thol section flower earliest and are sweet-scented, and therefore invaluable for the table and window. The early single and double are the most useful for the parterre and for growing in pots for the conservatory. The late, comprising more especially Gesneriana and the "Rose" section of the florists' tulips, are fine for late beds and for the fronts of shrubberies.

MINOR CONVOLVULUS

MINOR CONVOLVULUS.

Convolvulus minor.

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

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

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

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

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

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

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

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

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

WHITE JESSAMINE

THE JESSAMINE.

Jasminum officinale.

JASMIN THE TROUBADOUR, who happily hails from Agen, "content and poor," makes boast of his name as allied to the "stem of Jesse." For this plant is variously called Jasmine, Jessamine, and Jesse: its Arabic name being *Ysmyn*, and its Persian name *Jásemin*. And it is a question of some interest whether, in the prophetic utterances, "the stem," "the root," "the rod," and "the branch" of Jesse were associated with any plant that had the value of a symbol. It is not an idle question, as may be seen on reference to the tree of Jesse in the east window at Dorchester, Oxon; for however the artist may draw on his imagination in such a work, he is likely to be governed by an idea derived from a consideration of facts, and the jessamine, if admissible in such a case, is peculiarly

adapted for truthful delineation in conventional tracery. The tree of Jesse is indeed often met with in the reredos and east windows of English churches, and usually we have no hint of any special symbol or any properly objective thought in the work, although, doubtless, there is fair excuse for it.

The white jessamine has been in cultivation in this country so long that we have no record of its introduction, and know not whence it was obtained. In the books it is reported to have been introduced from the East Indies in the year 1548, but Gerarde, in 1597, speaks of it as commonly used for covering arbours; and as to its native country, we can scarcely localise it, except in a general way, as an Eastern plant. It is perfectly hardy in this country, rarely suffering even in the severest winters, and it is particularly well adapted for planting in town gardens, as defect of light and the deposition of dust on its leaves do not prevent its healthy growth and free flowering. As a wall tree, however, it lacks character, and often looks dingy and dejected; but if fairly well taken care of, the natural elegance of the plant is pleasingly displayed, and the delicious fragrance of its delicate white flowers abundantly justifies its place in the garden.

To obtain the evanescent odour of the flowers of this plant, a complicated process is required. To merely press them or to distil them with water would be useless, the essential essence being too subtle for retention by any such simple methods of procedure. The flowers are first embedded in fat, to which they communicate their odorous treasure, which is then separated from the fat, and obtained in a more elegant form by means of alcohol. The last part of the process is comparatively modern, but the first pro-

cess is as old as the use of perfumes, and explains the frequent employment of ointments by the ancients; for many of the odorous essences they coveted were obtainable only by the aid of greasy substances, which served as vehicles for separating and preserving them.

The most important species of Jasminum in respect of the production of commercial perfumes are *J. officinale*, which is here figured; *J. sambac*, a native of the East Indies, producing white flowers, which are followed by black berries. —the perfume known as oil of jasmine is obtained from this species; and *J. grandiflorum*, also a native of the East Indies, and closely resembling *J. officinale*, but the flowers are larger, and reddish underneath; from this is obtained a very considerable proportion of the essential oil of jasmine of the shops. A favourite garden jasmine in the East is *J. angustifolium*, a bright twining plant, with star-shaped flowers tinged with red, and very agreeably fragrant. It is somewhat singular that when these plants are grown in our conservatories they do not appear to attract many insects, nor does the fragrant jessamine of the garden often enjoy the honour of a visit from a busy bee or an idle butterfly; but Moore, with his exquisite taste in matters of detail, makes the jasmine of Asia Minor the resort of many gay insects, attracted by the rare fragrance of its flowers. In his delightful story of "Paradise and the Peri," he makes the "child of air," when searching for "the gift that is most dear to heaven," betake her amongst the bowers of the "chambers of the sun"—

"When, o'er the Vale of Balbec winging
Slowly, she sees a child at play,
Among the rosy wild flow'rs singing,
As rosy and as wild as they;

Chasing, with eager hands and eyes,
The beautiful blue damsel-flies,
That flutter'd round the jasmine stems
Like winged flow'rs or flying gems."

Cowper, who better understood the garden than any English poet, Shakespeare alone excepted, gives us a photograph of the plant in four short lines—

"The jasmine, throwing wide her elegant sweets,
The deep dark green of whose unvarnish'd leaf
Makes more conspicuous and illumines more
The bright profusion of her scatter'd stars."

SNAPDRAGON

THE SNAP-DRAGON.

Antirrhinum majus.

WHY should this gay flower be called a snap-dragon? To snap, in vulgar parlance, is to bite suddenly, or to utter biting words in a snappish or sudden and ungentle manner, as in a characteristic passage in Cowper's "Task"—

> "Is Winter hideous in a garb like this?
> Needs he the tragic fur, the smoke of lamps,
> The pent-up breath of an unsav'ry throng,
> To thaw him into feeling; or the smart
> And snappish dialogue that flippant wits
> Call comedy, to prompt him with a smile?"

Although the dragon the flower is supposed to represent in the act of snapping is a creature of the imagination, it is more or less reptilian, and the gaping mouth and huge under jaws of a lizard or crocodile are very fairly suggested in the conformation of the flower. The botanical name *Antirrhinum* refers to the snout-like figure of the flower, and so we are doubly compelled to take notice of its place in the long catalogue of "mimetic" plants, which are not

mimetic, because in their resemblances and reminders of animal form they are altogether passive and incapable of intention.

Antirrhinum majus is probably not a native plant, but it is so thoroughly naturalised that it may well rank as such, and it is certainly one of the most splendid and interesting of our wildings. Nowhere does it appear to such advantage as on the old bastion flaunting its gay banner amid grey ruins, or on the old garden wall, where perhaps the common polypody and the wallflower fight with it for the choicer crevices. It has afforded us immense amusement to note the wanderings and variations of the plant in our own garden. It first appeared on an artificial ruin that was constructed chiefly for the accommodation of sedums, sempervivums, hardy ferns, and the like. On a very commanding pinnacle, one bright summer day, a splendid plant of crimson snap-dragon was discovered, flowering gaily, and seeming to sing "I am king of the castle." The next year there were many such, all in commanding positions, for they appeared to have a gift of geography in finding peaks and passes and table-lands in various parts of the garden. But as they thus spread without aid, and generally sprouting without hindrance, they broke into a variety of colours, and during a run of about twenty years they abounded yearly, and the best of them always were those of a full rich crimson colour and those of a delicate primrose-white or straw-yellow. One day in the latter part of the summer of 1878, we were pointing out to a friend how a number of young plum and apple trees had appeared on the rough brick dome of the stoke-hole connected with the plant-houses, and on looking about we discovered a plantation of dozens of snap-dragons of all

colours, all growing, as the little fruit-trees were, on the rough brickwork, without a particle of proper "mould." Here we again noted that the red, pink, white, and brown flowers were comparatively poor, but the crimson and the pale yellow were glorious, both for their fine form and purity of colour.

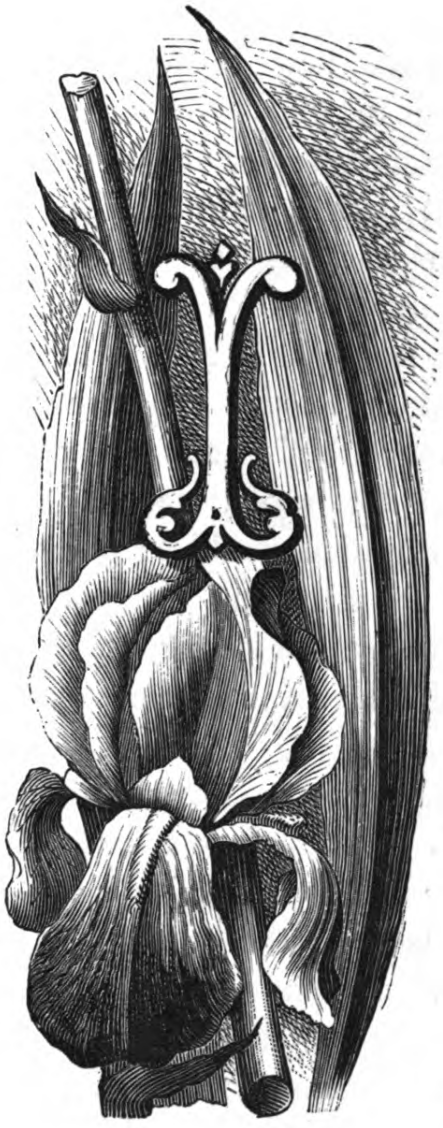
Although from these observations it appears that the plant tends in two distinct directions in its natural variations, it is due to the florists to say that they have produced a series of named varieties, remarkable for the number and size and smoothness of their flowers, as well as for distinctness and purity of colour. We have seen in nurseries collections of over a hundred varieties, embracing all colours except true blue and clear scarlet, and ranging in height from pigmies of four or five inches, to robust plants a foot to a foot and a half high. They are especially adapted to adorn the flower-beds in places where the natural soil is hot and dry, and they make useful bedding plants, because, being perfectly hardy, they need no aid of glass to keep them through the winter. As regards soil, however, they do well on any soil that is not absolutely boggy, but a sandy or calcareous staple suits them best when the question arises as to their proper location.

Named varieties are raised from cuttings, and when plants are required for the production of distinct masses of colour, this mode of propagation should be practised. But when there is no special need for uniformity, a pinch of mixed seed may be sown in spring, and the plants may be put out when large enough, and there will be plenty of showy flowers in due time. If it is required to establish them on a wall or ruin, the seed may be thinly sprinkled and covered with a little mould. The best time to do this

is when the seed is newly ripe in autumn, to afford the plants a long season of growth before the sunshine persuades them to flower.

Mr. Darwin, in his interesting work on "Cross and Self-fertilisation in the Vegetable Kingdom," gives some interesting particulars of the ingenious way in which bumble-bees obtain the honey from the snap-dragon when they cannot push past the projecting lip: "In *Antirrhinum majus* one or two holes had been made on the lower side, close to the little protuberance which represents the nectary, and therefore directly in front of and close to the spot where the nectar is secreted." In experiments recorded at page 363 of the work above quoted, Mr. Darwin found that while fifty seed-pods protected by a net gave nearly ten grains of seed, a similar number of pods from plants that the bumble-bees had free access to yielded over twenty-three grains of seed. It is not, however, by piercing holes in the flower that the bees effect fertilisation, but by thrusting their way through the jaws of the dragon into the throat, where they encounter the stamens, and becoming dusted with pollen, leave some of it on the stigma of that or the next flower they enter in like manner.

IRIS



THE IRIS.

Iris Germanica.

IRIS was the daughter of Thaumas and Electra, and her office was that of messenger to Juno. Therefore it is that in the "Iliad" and the "Æneid" this "lady of colour" has important business to transact, and, as a matter of course, her traffic between heaven and earth is facilitated by that prehistoric railroad and aerial bridge, the "bow bent in the sky," resplendent with innumerable tints. The hues of the rainbow are seen in the human eye, for in truth the bow is there—

> "Bespeaking our fears, dissolving in tears,
> And looking to heaven through colours of love."

Hence the eye, which is the sole source of our knowledge of colour, is the symbol of Iris, and the flower before us derives its name from the variety and splendour of its painting, and is, as our cousins of the West might say, a genuine "eye-opener" when summer has renewed the beauty of its bloom.

The common iris, or "flag," is *Iris Germanica.* This is well known by its distinct sabre-shaped leaves and noble blue flowers. It may be seen everywhere in London gardens, and yet where a London garden is managed in first-rate style, it cannot be counted among the most desirable plants for it. But we have now to do with its intrinsic merit, which is known to all. Given an ample range of border enclosing a croquet or bowling-green, or a free range of woodland walks, and we have a suitable domain for a collection of varieties of German iris, of which there are about fifty in cultivation. These present us with all possible colours save pure yellow and pure scarlet. They are wonderful in shades of blue, purple, lilac, lavender, brown, orange, buff, and pearly grey, put on in blotches, patches, circles, spots, marginal lines, and delicate pencillings. Any garden would be rich with a collection of these, and to examine and criticise them when in flower would afford many a summer day's delight. Any good deep garden soil will suit the German iris.

Another remarkable section of the family is that known to botanists as *Iris lævigata,* but in gardens denominated *Iris Kæmpferi.* This species has been for centuries cultivated by the Japanese, and the best of their varieties have been subjected to comparison and improvement in Holland and Germany, and one result is that the named sorts now available for the English garden are as worthy of a place in it as any hardy plants known. They differ from all other irises in the size of the flowers as compared with the leaves, the large lobes of the flowers, and the predominance of rich deep hues of crimson and purple with other colours amongst them. A rich deep soil and

an open situation are requisite to ensure a good growth of *Iris Kæmpferi*, and it thrives best in open beds.

A third section comprises those known in gardens as Crimean irises, *Iris pumila*. These are of dwarf growth; they flower freely, and are very gay, while their neatness of habit fits them for edging flower-beds, and of course they would be appropriate to give a finish to beds containing the larger and grander varieties. The colours that prevail amongst these dwarf irises are purple, dark blue, pale blue, straw-yellow, and white. They will thrive in any soil, but attain to their fullest perfection in a rather dry, deep sandy loam or sandy peat. They have increased and flowered freely on our heavy, damp clay, and therefore we are not afraid to say that any soil will suit them.

It is proper now to remark upon a few species that are calculated to afford much entertainment to the amateur of hardy plants, and it is the more desirable to mention them in this notice, because they are at once cheap, beautiful, interesting, and but little known beyond the narrow circle of advanced florists and horticultural botanists. *Iris cristata* comes near to the Crimean iris in general characters; the flowers are blue, with deeper blue spots, and wavy ribs, or "crests," tinted yellow and orange. *Iris Florentina* may be added to the Germanic group as nearly related to them; the flowers are white, with a blue tinge and a yellow beard, agreeably fragrant. *Iris fœtidissima* has a bad name, but it is a fine plant, bearing lead-coloured or dull yellow flowers, which are succeeded by clusters of scarlet berries, that are very useful in Christmas decorations. A damp situation suits this plant. The variegated-leaved variety is one of the handsomest plants of its class in cultivation. *Iris iberica* is a remarkable plant, with

immense dark flowers, superbly streaked, veined, and spotted. This is scarce at present, and may be advantageously grown in pots as a frame plant. It is, however, hardy enough for a dry, warm nook in the rock garden. *Iris Monnieri* is a grand plant, with fragrant yellow flowers. It requires a rich, deep, moist soil, and a warm situation. *Iris pallida* is distinct and fine; the flowers are pale blue, with pale yellow beard; it will thrive in almost any soil and situation, and may be classed with the German irises. *Iris pseudacorus* is the common English water-flag, a truly noble species, which adorns with its golden banners many a broad river and sluggish meadow stream. It is worth a place in the woodland border, and the variegated-leaved variety is a good garden plant. *Iris reticulata* is an exquisite gem, with narrow, rush-like leaves, and flowers plentifully produced, the colours rich violet-purple, strongly stamped in the centre with deep rich gold. The extreme elegance and fragrance of the flowers, and the tendency of the plant to suffer from damp, render it desirable to treat this as a pot-plant.

CROCUS.

THE CROCUS.

Crocus vernus.

THE season when the crocuses are in their full splendour is pretty sure to give us a glorious burst of sunshine for a day, or even a week, and then the flowers expand to their utmost, and surprise us with their splendour. They seem to surprise the honey-bees no less, for the music they make as they brush up the pollen is just that of a crowd of working people rendered half delirious by the discovery of a gold-mine. And, indeed, it is a gold-mine to them, or, better still, a bread-mine, for the pollen becomes "bee-bread" when carried into the hive, and constitutes the first food of the callow-worm hidden in its cellular cot, and feeding itself up to the point when it will emerge as a perfect bee and join the general congregation. Bee-keepers cannot have too many crocuses, because at the time they flower the bees are more or less distressed and cannot travel far, and it is of immense value to them to find

refreshment near home, and thus be enabled without risk to "improve the shining hour."

The spring-flowering crocuses are as well known in a general way as any flowers of the garden. But those whose knowledge of horticulture is more than skin-deep can tell us of crocuses that flower in almost every month of the year. For the present purpose, however, we may divide them into two classes—those that flower in autumn and those that flower in spring. The naturalist may prove to us that the season in which a plant produces its flowers is determined by circumstances acting through many long years; but the poet has a perfect right to take another view of it as having no relation to heredity, climatical influence, or the origin of species. Good Gilbert White found in the crocus a sermon so plainly written that he who runs may read it for himself, and it might be interwoven with the pregnant text, "My times are in thy hand."

Three species of crocus claim priority of attention in this brief essay. The common yellow crocus of gardens is the *Crocus luteus* of the botanist. The native country of this is at present unknown, but it probably is "at home" somewhere on the shores of the Mediterranean. The finest of the yellow crocuses is known to traders in bulbs as the "Cloth of Gold;" this is the *Crocus susiana* of the botanist, native of the "Levant," which may mean anywhere in Asia Minor. The blue, white, and striped crocuses are the product of the spring crocus, *Crocus vernus* of the botanist, native of the Alps and Apennines.

The following less known species are worthy of especial attention by such as find amusement in collecting choice hardy flowers. *Crocus Imperati*, flowering in spring, creamy white with purple stripes, a very fine sweet-scented

species, the leaves distinctly marked with a central white line. *Crocus boryanus*, flowering in autumn, white with yellow throat with a stain of purple outside. *Crocus pulchellus*, flowering in autumn, pearly blue with dark pencil lines, the throat orange-yellow. *Crocus sativus*, the saffron crocus, an autumn-flowering plant, the flowers violet with long tubes, sweet-scented; requires a dry warm soil, or it will but rarely flower. The dried stigmas of this crocus constitute the genuine saffron of commerce. We say "genuine," because common shop saffron, like restaurant soup, is made of anything that comes nearest to hand, several other species of crocus being pressed into the service, with florets of the marigold and slices of the flowers of the pomegranate. It is not unlikely that a very nice-looking sample might be made from scraped carrots. The matter is not of great consequence now, because saffron has parted from the fame it enjoyed as a drug that "maketh the sences more quicke and liuely, shaketh off heauie and drowsie sleepe, and maketh a man merrie." Gerarde, from whom the foregoing is a quotation, figures several "saffrons," including crocuses and colchicums, and he reminds us that Saffron Walden obtains its name from the abundance of saffron-producing flowers in its vicinity. Finally, *Crocus speciosus* is a particularly fine autumn-flowering species, with flowers of a rich violet colour, striped with purple lines.

Crocuses of all kinds require a somewhat sandy and warm soil, but the common garden kinds will really thrive in almost any soil or situation. The rarer kinds, at all events, should have well-drained positions and a somewhat light soil, and, generally speaking, warmth, for they are natives of the south of Europe and Asia Minor, and,

even if mountaineers, are accustomed to brighter suns than shine in these foggy isles. All kinds of crocuses produce seed freely, and may be multiplied rapidly and with but little trouble, by sowing the seed in light, sandy soil as soon as it is ripe. When the corms are planted, the depth at which they are placed should be determined in connection with the intention to take them up annually or leave them untouched several years. If to be taken up and replanted every year, three inches is the utmost depth allowable; but if to remain a few years, they should be put fully four inches deep, because every year of growth will bring them nearer to the surface. When planted in a good soil they may be allowed to remain undisturbed for several years, but it is good practice to lift them every third year in the summer, and replant in October. They appear to degenerate in English gardens, because the corms we take up are always smaller than such as we plant when purchasing a fresh stock of the merchants; but these small home-grown corms flower remarkably well, and it is quite a question if the large fresh corms from Holland flower any better.

MUSK

THE MUSK.

Mimulus moschatus.

THE homely name of this very homely plant needs no explanation, but there appears to be a paltry question to be asked and answered in respect of the peculiar and, to a majority of noses, delicious odour it emits. This musky, or "Muscovy," essence is variously produced among plants by this mimulus, by the musk stork's-bill (*Erodium moschatus*), by the musk orchis (*Herminium monorchis*), and by the musk thistle (*Carduus nutans*). And, again, it is produced amongst animals by a rat, a deer, an ox, and perhaps by some other creatures. The question will occur, Is it in each case the same substance? Can the chemist detect any difference in the constitution of the musk from the plant and the musk from the animal? Or is our identification a delusion, and does the nose lead us astray in making things that are different appear to be the same? Whether the fragrant essence has ever been obtained from the plant in a separated form we do not know; but we

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

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

A very pleasing surprise was afforded to the horticultural

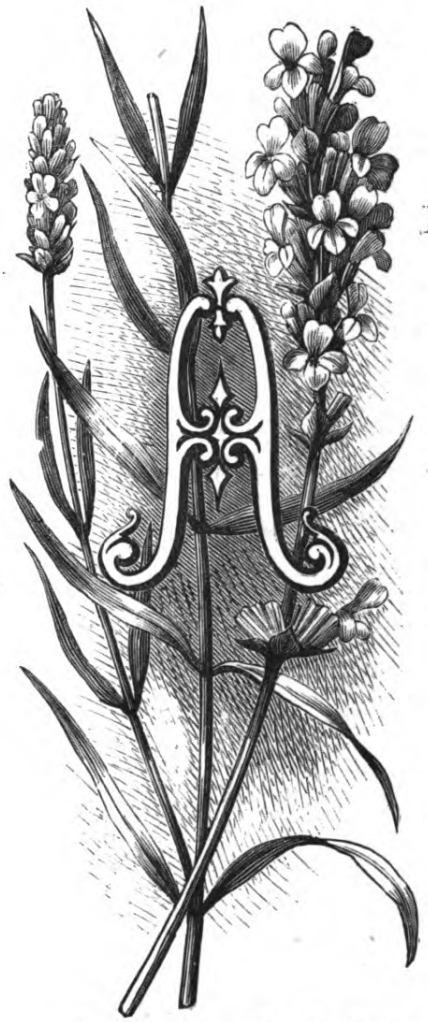
public a few years since by Messrs. Harrison, of Leicester. Not many of the ambitious florists thought the common musk worthy or capable of improvement; but one fine morning the *habitués* of the floral gatherings at South Kensington were confronted with a batch of several dozen plants of a new and fine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

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

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

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

LAVENDER.



LAVENDER.

Lavandula vera.

MERE word will often transport us into flowery fields and restore happy days that have long since fled. To many of the older sort the word lavender is as good as a charm, if it only recalls the old plaintive strain of once familiar street music. This tame-looking, grey-green, stiff, sticky, and immovable shrub holds as much poetry in its wiry arms as would fill a big book; but that is no matter if it has helped to fill a heart with gladness, for the filling of a book is but a piece of mechanical trickery. A most famous plant is the lavender, as may be seen by reference to any of the older herbalists, more especially Parkinson, Gerarde, and Johnson.

In a notice of the plant in a popular work occurs—what is very common in "popular works"—a showy but most egregious blunder in respect of one of the "associations" of lavender. It is affirmed by the writer that the plant grows in Syria, and furnished the "ointment

of spikenard" with which Mary anointed our Lord in Bethany. Let us suppose the two statements to be correct, and then what becomes of the protest against a supposed act of extravagance—"it might have been sold for three hundred pence"? The produce of a common weed of the country could never have acquired such a value, and the protest necessarily suggests that the ointment of spikenard was the produce of some far-distant land, and obtainable only with cost and difficulty. Such, indeed, is the case. The spikenard of the New Testament and of Canticles i. 12 and iv. 13 was imported into Palestine from the far East, the plant producing it being the *Nardostachys Jatamansi* of De Candolle, a plant spoken of by Dioscorides as the *Nard* of the Ganges—the *Sumbul* or *Sunbul hindac* of the Arabs to this day. Lavender, indeed, grows in Syria, for the genus *Lavandula* is essentially Mediterranean, but it was not the spikenard of antiquity.

The commonest uses of *Lavandula* connect it with the lavatory, both words deriving their origin from *lavo*, to wash; the plant being as much prized in ancient times as now for its refreshing perfume and cleansing properties. Herein is the secret of the commercial importance of lavender, of which immense quantities are grown near London for the purposes of the perfumer.

The common lavender (*Lavandula vera*) is the species grown in the Mitcham and other districts, as the oil yielded by its flowers, although not so large in bulk as that produced by the flowers of *Lavandula spica*, is of much finer quality, and is alone employed in the manufacture of the finest perfumes. The oil obtained from the last mentioned of the two species is rather green in colour, and is commonly known as spike oil, or foreign oil of lavender.

It is chiefly used for painting, but a considerable quantity finds its way every year to the second-class manufactories, where lavender-water and other perfumes, of which the base is the essential oil of lavender, are prepared, and this in its turn is sometimes adulterated with spirits of turpentine. The harvesting of the flowers takes place at the end of July or the beginning of August, according to the season, the proper moment for cutting the spikes being just as the flowers are opening, as they are then more powerfully aromatic, and consequently yield an oil of greater value than when fully expanded. The cutting is done with the sickle, and every care taken to immediately pack and tie up in mats, for when exposed to the rays of the sun for any length of time after cutting, the yield of oil is materially reduced in consequence. The flowers cannot, indeed, be sent to the distillery too quickly after their removal from the plants. Large quantities of lavender flowers are sent to Covent Garden annually, and from thence find their way to the shops and costers' barrows, for there is still a demand for them for filling muslin bags to stow away in drawers and cupboards, notwithstanding the facilities which exist for obtaining the essential oil, and lavender-water, and other perfumes into which it enters. The flowers, it should be remembered, are put into drawers and wardrobes to exclude moths, as well as for imparting an agreeable odour to the articles placed in these receptacles. A few drops of the oil will, however, serve the same purpose; and it has been ascertained by experiment that if a single drop is placed in a small box along with a living insect, the insect will be killed almost immediately.

The distillation of the flowers is a business quite distinct from that of their production, and both large and

small growers take their crops to the distillery, and pay a certain rate per ton. The quantity of oil extracted from a ton of lavender varies according to the season, a rather dry and hot summer being the most favourable to an abundant production. From 15 lbs. to 16 lbs. is considered a fair average, and in some years it reaches 20 lbs., but not often. The distilling commences about the 1st of August, and is continued until the end of September or the middle of October, according to the extent of the crop.

In the propagation of a stock of lavender, and in the management of the plantations after their formation, a very simple course of procedure has been found to be the most satisfactory. Propagation is effected by means of cuttings taken in the autumn, October being considered the most suitable month in which to take them. After the shoots selected for cuttings are separated from the old plants, they are left in small heaps on the ground for six weeks, and are then planted. Rooted slips are, as far as possible, taken advantage of for the increase of stock, and when these can be had they are at once planted in the field, at a distance of eighteen inches apart each way.

STRIPED PETUN'A

THE PETUNIA.

Petunia phœnicea.

PETUNIA PHŒNICEA is unknown in the land of the Phœnicians, being a native of Buenos Ayres, whence it was introduced in 1831. As a matter of course, the spirited maritime nation who built Tyre and Sidon, and who in their day were proud of their King Hiram, friend of Solomon, knew nothing of any kind of petunia, because, to use the language of a familiar song, the New World "had not then been invented." And yet in a certain way, by the involutions of language, this plant takes us round by way of South America to the eastern shores of the Mediterranean, for it is a Phœnician flower, and rightly named, and we are bound to connect it with the intelligent sailor race who brought the ideas and the gold of the east to the southern and western coasts of this country, and took away in exchange the tin of Cornwall, and the report of our wealth of timber and the suitableness of these isles for colonisation.

The Phœnicians found on their coast an abundance of the mollusk (*Nassa purpura* of naturalists), from which they extracted a purple pigment. This became to them an important article of trade, and the world resounded with the praises of "Tyrian dye." The ancients had not many colours, and it was but natural the Greeks should name the purple they so much esteemed after the people who produced it. Thus it became known to them as the "Phœnician colour," and the Romans subsequently modified the term, so that with them it became the "Punic colour." Thus the botanist has been provided with a choice of two (in addition to many more) terms available for the indication of the colours of flowers. This purple or crimson flower of South America he has named *Petunia phœnicea*, and the brilliant glory pea of New Zealand he has named *Clianthus puniceus*, which, of course, was no more known to the Tyrians and Sidonians than the flower before us.

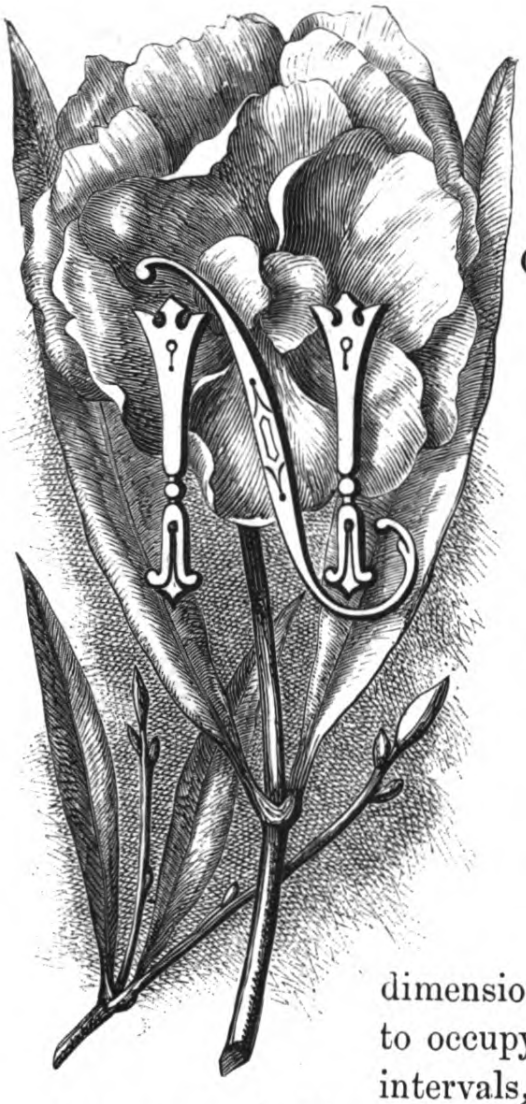
The petunia is almost a tobacco, and it will interest the observant loiterer in the garden to compare it with the noble Virginia tobacco, which is well worth growing for its stately carriage and beautiful flowers. Indeed, the petunia *is* a tobacco, for its Brazilian name *petun*, from which is derived petunia, means tobacco, and it is fair to suppose that, if the plant were dried and prepared, it would be found to possess distinctly fragrant and narcotic properties. A sheet of petunias in full flower is a glorious sight, and the odour the flowers emit when the sun shines full upon them is agreeable, but the plant is not a nice one to handle or examine; its leafage is unhandsome, its habit ungainly, its substance is clammy, and certainly does at times give the nose a reminder of tobacco.

The systematic crossing of a few distinct species of petunia has resulted in the production of a number of splendid varieties, which are invaluable as garden plants. The showy single white, purple, and striped kinds may be raised from seed sown on a hot-bed in March, and if planted out in May will flower superbly as the season advances. Treated in this way, the petunia is one of the cheapest and grandest of annuals, and as it makes a sumptuous bed, the owner of a country garden may turn it to good account, especially where the soil is hot and sandy, for this suits the plant perfectly. The double varieties make magnificent pot plants, and require precisely or nearly the same treatment as geraniums, the two grand points in their management being to train them with care and keep them short and leafy to the bottom. They require a light rich soil, and to be safe from all extreme conditions, more especially from extreme heat, for when unduly forced they become infested with vermin, and if they cannot be quickly cleansed by means of tobacco smoke, they may as well be destroyed, for when they have once gone wrong to any serious extent they never recover. Reasonable care, however, will prevent any such mishap, and, as remarked above, the matter of main importance is to guard against extreme conditions. It is especially worthy of remark that the petunia is more hardy than the geranium, perhaps even a trifle more hardy than the calceolaria; hence it may be planted out somewhat early in May if the weather is cloudy and genial, and if the plants escape harm from frost—as with a little care in sheltering they will—they will soon make a free growth and shake off any trace of aphis or other insect pest they may have been troubled with, and make an early and

splendid bloom. It is usual to peg them down when in beds, but they thrive better and look better when allowed to stand up, and therefore petunias are well adapted to form low flowery hedges in the flower garden. In Paris they are much employed in this way in combination with white "marguerites," the result being a dense hedge of about a foot to a foot and a half in height, composed of two close lines of purple and white flowers. When enclosing a small plot of grass this is very effective.

The named varieties are propagated from cuttings in July and August without the aid of artificial heat. The best place wherein to winter them is a cold dry pit, for damp is death to them; they cannot endure a touch of frost, and, generally speaking, the greenhouse is too warm. When kept sufficiently cool they are entirely free from vermin; indeed, the amateur gardener may with advantage regard as a doctrine that the liability of a plant to the attacks of vermin is in direct proportion to mismanagement in respect of temperature and moisture; generally speaking, when a plant becomes covered with "fly" or "spider," it is the consequence of insufficient ventilation.

OLEANDER.



THE OLEANDER.

Nerium oleander.

NOT many of our "fine old-fashioned plants" can equal the oleander in beauty and usefulness, and whatever goes to make up the quality called "intrinsic value." Not only is it always worth keeping as a true household plant—a sort of patrician laurel—but it improves with age, and can scarcely be too large for the enjoyment of its buxom beauty, provided it does not grow, as the Vicar's family picture did, to dimensions in excess of the place it is to occupy. Occasionally, but at rare intervals, we meet with family oleanders that are creditable to their owners, and one such we remember in an especial manner, having met with it several years in succession at the Peterborough summer flower show, where we have manifested our approval of it by the award of a special prize, and perhaps a commendation in addition. This fine plant—if we may trust our memory—may be

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

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

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

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

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

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

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

GARLAND DAISY.

THE GARLAND DAISY.

Chrysanthemum coronarium.

MARGUERITES may be princesses or peasants, but if human they must be good to be called Marguerites. They may also be pearls or flowers, and in either case they must be pure and pretty; and hence white daisies and chrysanthemums and pyrethrums are by the fanciful French termed, collectively and generally, "Marguerites." Everywhere in Paris, from the 1st of January to the 31st of December, we may meet with Marguerites of exquisite beauty. If the weather is cold, they are in the glass-houses of the growers or the warm shops of the dealers in flowers. If the weather is warm, they are flowering out of doors; and most beautiful are the hedges and bands and beds made of Marguerites and petunias and marigolds that are in the gardens and promenades of Paris. Here they are comparatively

unknown, and so it may be information to our readers to say that one of the best of the plants of this class, and the one most commonly employed in Paris, is *Chrysanthemum frutescens*, which may be grown in the form of a small tree, with elegantly notched leaves and charming white flowers.

The garland daisy—as, for the sake of a homely name, we designate the flower before us—belongs to the Marguerite series, but it is one of the least important, being but an annual, although a beautiful and useful flower. It grows about two and a half feet high, has leaves elegantly cut, and flowers that vary from pure white to deep yellow, both single and double. It is a native of the Levant, but is ranked with hardy annuals, as it requires no special care in its cultivation, and it flowers freely when grown in common soil.

A finer plant than this is the sub-tropical *C. carinatum*, which has leaves of a somewhat fleshy texture, finely cut and somewhat curled, and flowers various in colour. This, though a somewhat tender plant, may be grown in the usual way of a hardy annual, and will flower finely in common soil, if enjoying full sunshine and the plants not overcrowded in the clump. In the seed catalogues this will be found entered as *Chrysanthemum tricolor*, and there are at least half a dozen different varieties, all worth growing—in fact, the grower of annuals would do well to secure all the sorts that are offered, and grow them with care, more especially as to giving them room enough, for from July to September they will afford abundant entertainment in the variety and beauty of their flowers.

The chrysanthemums, pyrethrums, and daisies are so nearly related that many members of these families are

known by these names interchangeably. The beautiful race of florists' pyrethrums, that deserve a place of honour in every garden, are often ranged under the larger genus as *C. roseum*, and the pretty pompom chrysanthemums are by the same licence known as "Chusan Daisies." With the garland daisy before us, therefore, and not being in the humour to display our learning, we shall help on the page by quoting a portion of Eliza Cook's pretty poem, "Buttercups and Daisies"—

"I never see a young hand hold
The starry bunch of white and gold,
But something warm and fresh will start
About the region of my heart.
My smile expires into a sigh;
I feel a struggling in my eye,
'Twixt humid drop and sparkling ray,
Till rolling tears have won their way;
For soul and brain will travel back,
Through memory's chequered mazes,
To days when I but trod life's track
For buttercups and daisies.

"There seems a bright and fairy spell
About their very names to dwell;
And though old time has marked my brow
With care and thought, I love them now.
Smile, if you will, but some heart-strings
Are closest linked to simplest things;
And these wild flowers will hold mine fast,
Till love, and life, and all be past;
And then the only wish I have
Is, that the one who raises
The turf-sod o'er me plant my grave
With buttercups and daisies."

We have some handsome wildings allied to the garland daisy, as, for example, the great ox-eye daisy

(*C. leucanthemum*), which in the height of summer makes many miles of railway banks as white as if just snowed upon; the corn marigold (*C. segetum*), a thoroughly handsome flower, wholly yellow; and the corn feverfew (*C. inodorum*), the flowers of which are white with a yellow centre, with leaves finely cut.

PENTSTEMON.

THE PENTSTEMON.

Pentstemon gentianoides.

THE pentstemon has no history, and it would be a trying task to find a sonnet in praise of its beauty, for if there be one in existence it must be buried deep in the recesses of unknown literature. The generic name affords a rare example of common sense in botanical nomenclature. It tells us that the flower has five stamens, such being the exact meaning of pent-stemon. It is unfortunate, perhaps, for such a charming and peculiarly useful flower to be of American origin, and introduced to Europe only within the present century. It is thus separated from the superstitions and fancies and usages that render certain flowers famous in literature and art, and bring them into the very midst of our domestic sympathies and affections. What a history, for example, has the violet! That has been from the

beginning of the world flowering by the wayside, in the midst of observant and imaginative men, and they have woven it into the web of their social relations so completely that it is not only a familiar flower, but a symbol of deep significance, and an emblem, too, of many thoughts and virtues. The pentstemon is a new flower from the new world; that is to say, it was created at the same time as the violet, but has quite lately been discovered, and perhaps there is needed the observation of centuries to create a history for it and make it a representative of feelings and fancies of the tender kind that usually underlie a genuine love of flowers.

Two or three species of pentstemon were known to English gardens at the close of the last century, but the majority of the kinds that have obtained favour have been in the country only some fifty years or so. The most important is *P. gentianoides*, introduced from Mexico in 1846, as from this a considerable proportion of the cultivated varieties have been obtained by crossing with *P. cobæa*, introduced in 1835, and *P. diffusum*, introduced in 1826. There are about fifty species known, and all of them are located in the central and southern parts of the United States and the more temperate parts of Mexico. In addition to the three just named it may be proper to mention, as worthy of attention, *P. acuminatus*, with reddish-purple flowers; *P. Wrighti*, with flowers rosy carmine; and *P. speciosus*, with fine flowers, which are usually of a rich blue colour, but are liable to variation. The colours that prevail in the pentstemons are shades of red, blue, rose, carmine, and white; there is somewhat of a tendency to the production of ineffective shades of colour when the species are crossed and seedlings are raised in

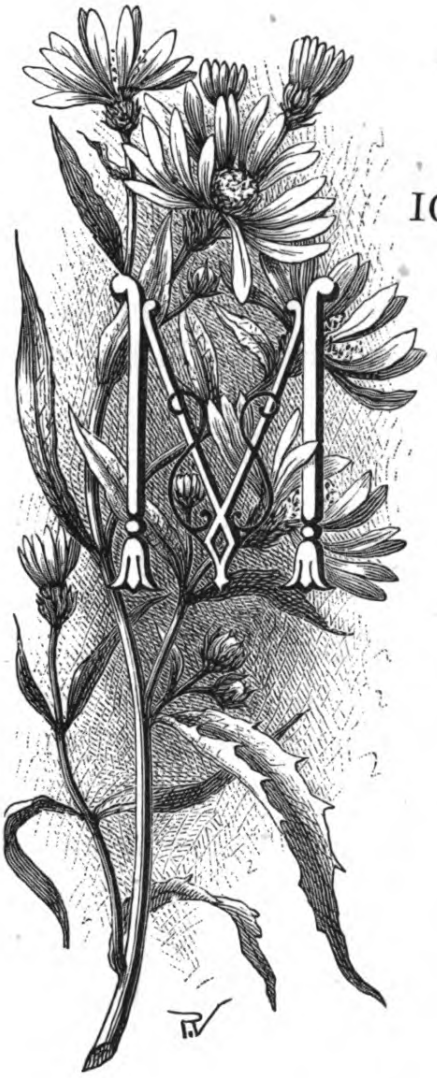
quantity. But the ineffective kinds are easily got rid of by the simple process of destroying them; and when the seedlings are judiciously selected, we have as the result a race of flowers resplendent in beauty, and of immense interest because of their never-ending variations. To the florist one great source of charm is this tendency to variation. It matters not how beautiful a flower may be in its original state if it refuses to undergo modifications when cultivated. The great hope of the florist is to work changes on the types that nature offers to his notice, and when he finds this cannot be done his interest is diminished; and, in fact, there is no such thing as a "florist's flower" that is everywhere and always alike. The very essence of floriculture is to be found in floral mutation, although there must be something more than that to ensure for any flower a lasting popularity. The pentstemon varies delightfully, hence there is great pleasure to be found in raising seedlings, and the few who have hitherto practised this system have had a great run of good luck in securing varieties of fine character and good constitution.

The pentstemon belongs to the section of Figworts (*Scrophularineæ*), and has for near relations the calceolaria, schizanthus, verbascum, antirrhinum, paulownia, chelone, digitalis, and mimulus—a most interesting lot, but as regards their qualities rather suspicious, and but rarely of any important use either in medicine or the arts. The best known in respect of utility is the foxglove (*digitalis*), which affords a powerful drug, and may properly rank as the finest of all our British wild flowers. It is sometimes spoken of as the British gloxinia and the British pentstemon, and in the range of the colouring of its flowers it comes near to the beautiful plant before us.

The pentstemon requires a rich deep soil and an open sunny situation to ensure a full display of its beauties. It is a thirsty plant, and therefore in dry weather should be liberally supplied with water.

The best way to ensure a fine show of flowers is to purchase named varieties, and to raise a fresh stock of plants every year by striking cuttings in August and September. These should be kept in a frame or pit through the winter, and be planted out in April and May where they are to flower. Speaking generally, the treatment given to bedding calceolarias will suit them perfectly. When grown from seed, the seed should be sown in February, and have the help of a gentle hot-bed to start them. The plants may be brought on in a cold frame, and put out in beds in the month of May.

MICHAELMAS DAISY



THE MICHAELMAS DAISY.

Aster amellus.

MICHAELMAS DAISIES are not in high repute, for they are not well represented in gardens. A certain number of coarse, weedy sorts have obtained entrance, and have spread far and wide; and when, by the artistic eye, they are weighed in the balances and found wanting, the whole race is condemned for their defects. But there are in cultivation some truly noble kinds, and many that are beautiful and useful if not noble; and their value is in some degree enhanced by the fact of their flowering late in the summer when the gaiety of the garden is overpast. From August to the close of the year is the season of the Michaelmas daisies; one of their number (*Aster grandiflorus*) is called the "Christmas daisy," because of its late flowering, and it is not at all uncommon for them to fight the frost night after night as the season wears on, and come out triumphant at last in unfolding to

the declining year all their starry flowers. Dante alludes to the struggle of flowers with frost in the second canto of the first book of the "Divine Comedy," as representing his own case when overcome by the inspiration of Beatrice :—

> "As florets, by the frosty air of night
> Bent down and clos'd, when day has blanch'd their leaves,
> Rise all unfolded on their spiry stems ;
> So was my fainting vigour new restor'd,
> And to my heart such kindly courage ran,
> That I as one undaunted soon replied."

Chaucer had made note of the fact as a theme for poetry, and it touched the vein of tenderness which was so peculiarly his :—

> "But right as floures through the cold of night
> Iclosed, stoupen in her stalkes lowe,
> Redressen hem agen the sunne bright,
> And spreden in her kinde course by rowe."
>
> *Troil. and Cress. II.*

A large proportion of the plants classed as Michaelmas daisies are natives of North America, and therefore are hardy enough for any part of the British Isles. They may be more properly regarded as perennial asters, for such they are when their season of flowering, as remarked above, is of some four or five months' duration. They are among the most accommodating plants of their class known, being truly indifferent as to soil and situation, provided they have something to live on and are blessed with a glimpse of sunshine at some part of the day. But they are like many other accommodating plants in the fact that they make a far finer show of their flowers in a good soil, a pure air, and a sunny situation, than when overshaded by trees and with exhausted earth for their sole sustenance. The larger and bolder kinds are

fine shrubbery plants, and some of the smaller unattractive kinds are worth growing to cut from, for their clusters of little stars are often useful for decorative purposes, though as seen in the garden they may be inconspicuous and of small account.

The safest rule of classification appears to be found in the relative heights of the plants. Beginning with the smallest, we have a charming thing in *Aster alpinus*, the blue daisy of the Alps, a plant which in gardens grows to a height of six inches, producing large blue flowers, but in the mountain pastures is too short to rise above the fine grass, amidst which its flowers appear like large blue daisies.

> "Star of the mead! sweet daughter of the day,
> Whose opening flower invites the morning ray,
> From thy moist cheek, and bosom's chilly fold,
> To kiss the tear of eve, the dewdrops cold."

Other useful dwarf kinds are *A. attaicus*, with rosy purple flowers; *A. patens*, purplish-blue; *A. sericeus*, deep blue; *A. versicolor*, white changing to pale purple; *A. dumosus*, pale lilac-blue.

Another series adapted for second and third rows are the following:—*A. amellus*, flowers blue with yellow disc, one of the best; *A. dracunculoides*, purplish-blue, fine; *A. fragilis*, flowers white, changing to rose or purple; *A. lævis*, purple with yellow centre, useful and good; *A. laxus*, pale blue, fine; *A. pendulus*, white, changing to rose; *A. pyrenæus*, lilac-blue with yellow disc; *A. turbinellus*, delicate mauve, a handsome plant. In this section occur the most generally useful kinds.

Amongst the taller sorts suitable for planting amongst shrubs and in the reserve garden the best are *A. cordifolius*,

flowers early, white or pale violet; *A. elegans,* purple and white, useful to cut from; *A. grandiflorus,* violet, late, very handsome; *A. longifolius,* purple-blue, showy; *A. multiflorus,* small white flowers in elegant bouquets, most valuable to cut from; *A. nova-angliæ,* late flowering, very tall, flowers violet and purple; *A. obliquus,* late flowering, white with purple disc, coarse, but in its way superb.

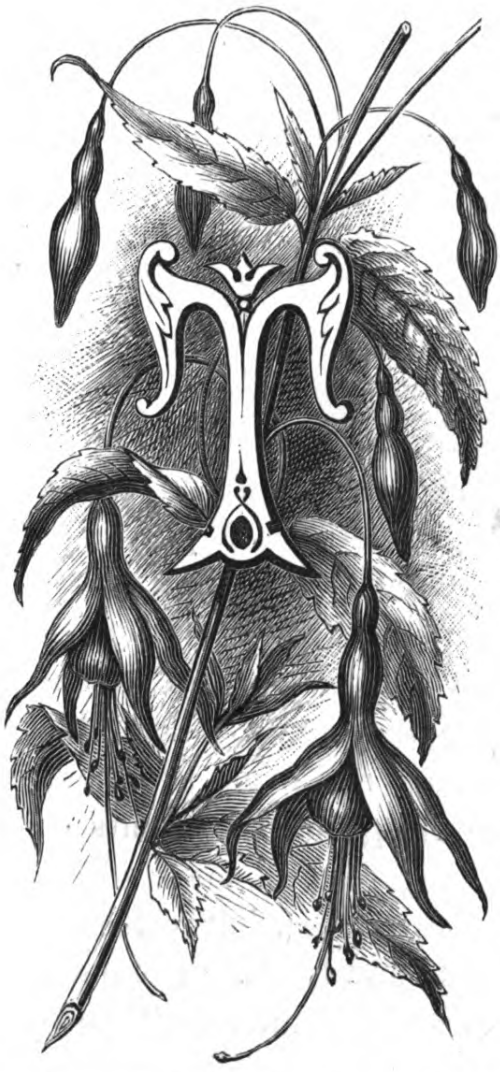
A score or even fifty more may be found by those who need them, but the foregoing will suffice to stock a large garden with the most distinct and handsome kinds that need no special care when once they have been properly planted.

"Last smile of the departing year,
Thy sister sweets are flown!
Thy pensive wreath is far more dear
From blooming thus alone.

"Thy tender blush, thy simple frame,
Unnoticed might have passed;
But now thou com'st with softer claim,
The loveliest and the last.

"Sweet are the charms in thee we find—
Emblem of hope's gay wing;
'Tis thine to call past bloom to mind,
To promise future spring."

SINGLE FUCHSIA



SINGLE FUCHSIA.

Fuchsia gracilis.

THE fuchsia is too modern a flower to have a great history, but what is known of it historically is full of interest. Strictly speaking, it is not so modern as is generally supposed, for it begins with the adventures of Father Plumier, who was born at Marseilles in 1646. At the age of sixteen Charles Plumier was admitted to the religious order of Minims, and under the training of Father Maignan he soon became an expert mathematician and a practical turner. He wrote a remarkable book on the art of turning, and might have continued turning and calculating, save that he had injured his health by too close application, and turned to the study of botany for occupation and rest. He soon became a master of this science, and the friend of the great botanist Tournefort. Three several voyages he

made to the West Indies and the American continent in search of plants, and in the capacity of King's Botanist he published in 1695 his first botanical work, "Description des Plantes de l'Amerique." After his third voyage he published in 1703 his "Nova Plantarum Genera," in which occurs the first description of the fuchsia, which he had discovered. In this work a feature of great importance is developed. Plumier dedicated about fifty of the plants he discovered to eminent botanists, by adopting their names as generic designations. Thus he dedicated the plant before us to the memory of Leonard Fuchs, and on him, therefore, we must bestow a paragraph.

Leonardo Fuchs (or Fox) was born at Wembding, in Bavaria, in the year 1501. Early in life he devoted himself to learning and letters, became a convert to the opinions of Luther, and in 1521 graduated as a physician at Ingoldstadt. He was the first German physician whose name became famous in foreign countries; and, strange to say, his fame rested chiefly on his vindication of the system of medicine that prevailed among the early Greeks. He was rather a herbalist than a botanist, and made great but often vain profession of his knowledge of the plants of Dioscorides. His works are now regarded as mere curiosities, of considerable historical importance, but valueless in respect of the science they uphold and teach. The most important of them is the "Historia Plantarum," published at Basle in 1542.

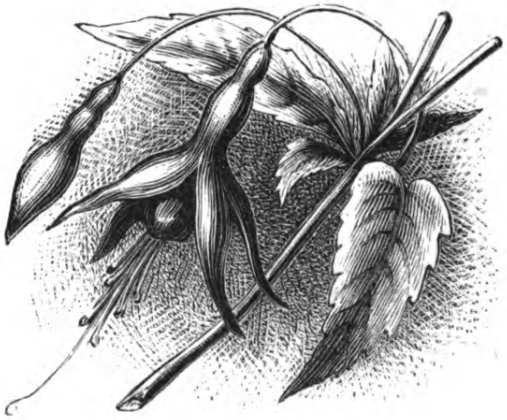
But these relations do not bring the flower "home to us." That was done by a sailor, about a hundred years after the discovery of the plant by the learned monk Plumier. The adventurous tar had brought home from Chili a plant bearing flowers of a kind unknown till then

in Europe, and he gave it to his wife, and in the course of time she sold it to Mr. Lee, the eminent nurseryman of Hammersmith. It soon became famous, and as a garden flower the fashion was thus, as we may say, created. And it is worthy of observation that the kinds that were earliest introduced were of such high quality that later discoveries have not eclipsed them. Perhaps the greatest sensation experienced by the floral world in connection with the fuchsia occurred in the year 1847, when Messrs. Veitch obtained their first flowering plants of *Fuchsia spectabilis* from seeds sent home by Mr. William Lobb, who met with it in the Andes of Cuença, Peru, growing at an elevation of four to five thousand feet. But we dare not touch on the floral history of the plant, for we should need years for the study of it, and endless volumes for the text. Nor have we space left for a disquisition on the beauty of the fuchsia, and therefore have determined to follow a good example. A lean curé dined with a fat bishop, who first gave the curé a very poor *vin ordinaire*. But the curé praised the miserable wine, and astonished the bishop, who now determined to astonish the curé. So he brought forth his wines of rare vintage, and watched for the effect, but the curé spoke not a word. "What," said the bishop, "you praise my meagre *vin ordinaire*, and you say nothing of the wine now before you!" "Pardon, monsignor," replied the curé; "the wretched wine you first gave me needed praising; but this—this speaks for itself."

Ladies and gentlemen, as regards the elegance and freshness of the fuchsia it is not needful to speak—*it speaks for itself!*

In sheltered gardens in all the southern counties, and in some places even north of the Trent, the beautiful

named fuchsias that are grown in the greenhouse may be planted out, and will pass through the winter safely if slightly protected, except in those seasons when the frost is unusually severe. Large old fuchsias may be turned to grand account in this way. The soil must be rich and mellow, and the plants must have abundant supplies of water; and if valued for their strong stems they should be lifted in November and be stored away in a greenhouse or a cellar, to be planted out again in May. If allowed to remain in the ground they should be cut down and a little cone of coal ashes piled over them. For permanent features the hardiest fuchsias are *F. coccinea*, *F. gracilis*, *F. virgata*, *F. globosa*, and *F. Riccartoni*. Of *F. spectabilis* we have already given a description.



DOUBLE STOCK

THE DOUBLE STOCK.

Mathiola annua.

REFERENCE to the older authors will in a very striking manner illustrate the much-talked-of improvement of garden flowers. In the days of the early English writers on horticulture there were no such stocks known as we are now familiar with, although the "stock gilliflower," as it was called, had assumed a variety of forms, and there were several kinds with double flowers in cultivation. The gay colouring and the spicy odour of the flowers would ensure popularity for the plant in its least improved form, and these qualities have ensured constant attention to its merits, so that even fashion, which often puts its foot on beautiful flowers for no good reason whatever, has not succeeded at any time in depreciating this fine old favourite.

There are about thirty species of stocks known to

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

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

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

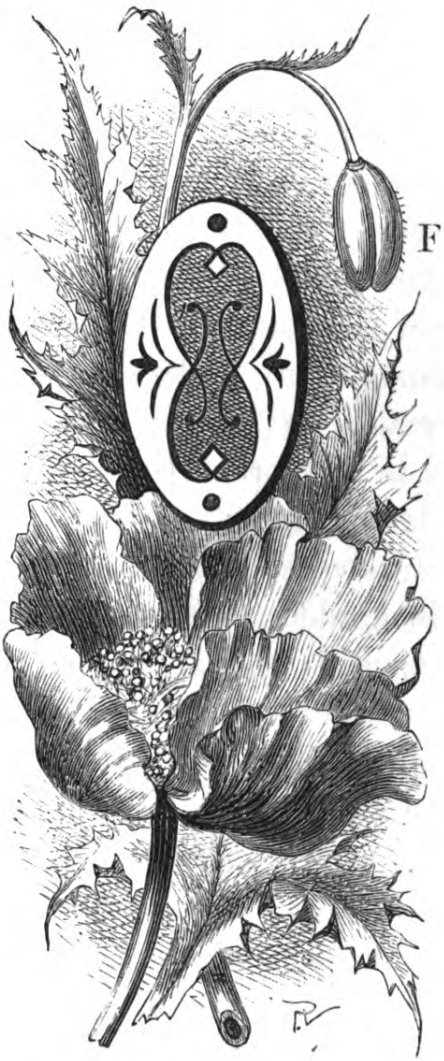
weather they should have abundance of water. The routine of treatment varies with the kinds and the seasons in which they are required to flower, and to succeed thoroughly with any one class demands a considerable degree of patience and skill. Not a few of the English visitors to the Paris Exhibition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

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

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

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

ORIENTAL POPPY.



THE ORIENTAL POPPY.

Papaver Orientale.

OF this garish plant it may be said "once seen, known for ever." The name suggests an Indian plant, but Armenia and the Caucasus are its head-quarters, and therefore there is no problem presented in the fact that it is perfectly hardy in the English garden. As regards its one distinguishing character it stands alone. There is no plant that can compete with it for the size and fiery splendour of its flowers, which, indeed, spoil everything of a quiet and refined nature that happens to be in the vicinity, when it is holding forth its burning cressets like signals of alarm. It is very careless of conditions, being a thrifty plant on a cold clay soil, though more thrifty and more splendid on a dry gravel, or on a sunny rockery affording a good depth of free gritty loam.

The perennial poppies are scarcely entitled to be regarded as first-class garden plants. They are in some

degree coarse, and their beauty and bravery soon pass away, and they offer but little of character to interest during the many months when they are not in flower. In this respect they resemble the herbaceous pæonies, although it must be admitted that of the two the latter are the more worthy of regard both for distinctive leafage as well as splendid flowers. But the brevity of their display is of great importance, for they occupy much room, and afford special gratification for so short a space of time that we may liken them to fireworks, that dazzle us for a moment and then make us painfully sensible of the negation of darkness. In a small garden such plants are rather in the way than welcome. But in the woodland, and in the garden that has many large features, they are noble adornments in their season of flowering, and are unobtrusive at other times. And they are particularly valuable in gardens that partake somewhat of a public nature, where there is an ample space of grass turf, mixed shrubberies, and extensive borders that obtain attention only occasionally. Here these large subjects come in usefully, and if there are perennial poppies, pæonies, phloxes, and early flowering chrysanthemums in plenty, there will be much bloom at little cost, because such plants can take good care of themselves for many years if properly planted in the first instance.

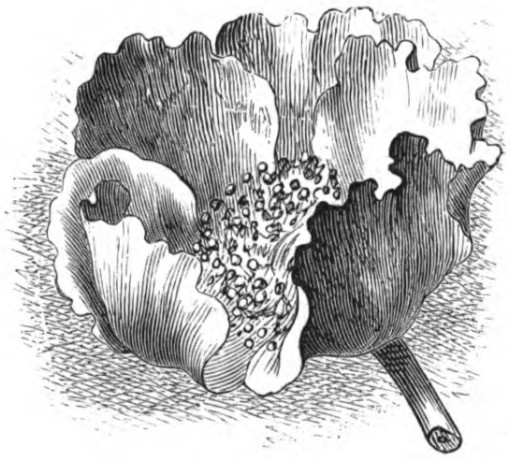
The section of poppies of which our present plant is a representative may afford to the amateur gardener a pretty lesson in plant propagation. The seeds ripen pretty freely, and may be most easily grown into serviceable plants. Moreover, the plants themselves may be divided, and every rooted tuft planted out in moist, mild weather will soon become established, and do its duty. But there is yet a third mode of multiplication, rarely practised, but

applicable to innumerable subjects, from the gigantic paulonia to this flaring poppy. It will be observed that this gay weedy thing has a white fleshy root, remotely resembling that of a parsnip. This may be cut into pieces an inch in length, and the pieces may be planted in pans filled with sandy loam, the tops of the cuttings being just even with the surface; and if kept reasonably moist, and close shut up in a frame, every separate piece of root will in due time make a plant. One of the requirements of the management is *patience,* which, indeed, is the main requirement in propagating plants by any and every method everywhere.

There are several forms of the Oriental poppy, and they are distinguished from other poppies not only by the intense though unrefined colour of their flowers, but by the fact that they have three calyx pieces, other species having but two. *Papaver Orientale* is regarded as the type. It has flowers unaccompanied by bracts. *Papaver bracteatum* is a bracted variety, commonly regarded as a separate species. *Papaver concolor* and *Papaver maculatum,* which have a place in the books, do not properly exist at all. The names originate from the fact that in some cases the flowers are self-coloured deep scarlet, and in others there is a purple spot at the base of each petal. For all ordinary purposes these trivial variations are of no consequence at all.

Tourists in Wales and Cumberland, and other of the mountainous districts of the north-west, are often perplexed by the appearance amongst rocks, and at the foot of old walls on dusty roadsides, of an interesting herb bearing gay yellow flowers. Its likeness to a poppy begets an interest, and its intrinsic beauty sustains that interest,

more especially when it is found fringing the roadway by the side of the former residences of Wordsworth and Coleridge and other of our poets amid the hills. When the neophyte inquires for the name of this plant, he is often told it is the celandine, from which it differs in the most decided manner. This, indeed, is the Welsh poppy (*Meconopsis Cambrica*), one of the most beautiful and engaging of British weeds, and especially worthy of note, from its persistency in creeping close to the walls that have sheltered many of the brightest wits and happiest versifiers whose names glitter in our great Walhalla.



CANDYTUFT.

THE CANDYTUFT.

Iberis umbellata.

CANDY, or Candie, is the old English name for the island of Crete, and the tufted flower before us having been brought from Crete, obtained the name of candytuft. It is recorded by Gerarde that he received seeds of the "candie-mustard" from Lord Edward Zouche, and that they produced in his garden flowers that were "somtimes blewe, often purple, somtimes carnation or horse-flesh, and seldom white," their leaves being of "a graie or ouerworne greene colour." The generic name *Iberis* refers to the Spanish peninsula, the ancient Iberia, where the candytufts abound.

These are cruciferous plants, and particularly worthy the attention of young botanists, because of the irregular form of the corolla. One of their number is an inhabitant of Britain: it is *Iberis amara*, the bitter candytuft, a rare weed in chalky corn-fields, more often met with in Oxford-

shire and Berkshire than in any other parts of the country. This produces white flowers, which are followed by two lobed seed-pods, which have been valued for their real or supposed curative effects in heart disease and asthma. Whether the plant is, strictly speaking, a native, is at least doubtful, but we will not dwell on a point so abstruse.

The candytufts may be divided into two classes, the annual and the perennial. They are amongst the cheapest, the most gay, and the most easily managed of our garden flowers. The annual kinds may be sown in autumn to bloom in the month of May, or they may be sown in spring to bloom in June and July. In the seedsmen's catalogues will be found a beautiful series of varieties, the whole of which may be grown to advantage in any garden where there is room for an assortment of gay flowers. The most distinct of these are the umbelled candytuft (*Iberis umbellata*), of which there are varieties with white, purple, crimson, and rose-coloured flowers; the fragrant candytuft (*I. odorata*), which has white flowers agreeably scented; the pinnate-leaved (*I. pinnata*), with flowers whitish in heads which lengthen as the flowers expand; the rocket candytuft (*I. coronaria*), a fine white flowering kind, allied to *I. umbellata*. When sown in spring these require a rich moist soil and a sunny situation; when sown in autumn a dry soil is to be preferred, because of the risk of loss during the winter. They are, however, quite hardy, and as regards conditions by no means exacting. One thing must be mentioned—they do not transplant well; therefore it is best to sow them where they are to flower, and thin out as soon as possible, so as to isolate every plant, for wherever they are crowded they will be weak in growth, and produce but few and poor heads of flowers.

The perennial species are fine plants for the border and the rockery, and will without harm bear a certain amount of shade. Any good loamy or gravelly soil will suit them. They thrive on chalk, but on undrained clay they are liable to injury in winter, and if really in a swampy place will certainly perish. Although classed as "herbaceous," these candytufts are miniature trees or under-shrubs, richly green all the winter through, and flowering in spring or early summer most profusely. They are models of neatness, and when they attain to some size they are paragons of beauty, as none would dispute after seeing our plants, measuring a yard across, of the lovely white flowering rock candytuft.

The most useful of this section are the following:—*Iberis corifolia* (the coris-leaved candytuft) is very dwarf, and flowers early; the flowers pure white, the growth densely cushioned. *I. coriacea* (the thick-leaved candytuft), probably a hybrid; it is of shrubby habit, and rises to a foot in height; the leaves oblong spatulate, the growth free, the flowers pure white, produced in great abundance and rather late; one of the finest hardy rock-plants we have, needing only an open sunny position to give joy to all beholders. The Gibraltar species (*I. Gibraltarica*) is a straggling grower, the flowers, blush-white, appearing early; it is a good rock-plant, but not tidy enough for a highly-dressed border. The rock candytuft (*I. saxatilis*) is the most useful of all; it grows compactly, has a fine green colour all the winter; the leaves are linear and rather fleshy, the flowers white and lasting long. Tenore's candytuft (*I. Tenoreana*) is like the Gibraltar plant, but less robust, and less to be desired, as it is apt to die off in winter unless in a warm, sheltered, and well-drained soil.

All these may be grown from seed; but they do not

always produce seed, and it is scarcely worth while looking after it, because they can be more advantageously raised from cuttings. These should be taken when the growth of the young shoots is nearly completed, and just before they begin to harden. Dibble them into a bed of sandy earth, give them a sprinkle of water, put a bell-glass or hand-light over, and—*forget them*. In about two months you may remove the bell-glass, for they will be all rooted. It will be well to leave them undisturbed until the month of April following, when they may be planted out to grow into specimens. Border-plants that are somewhat straggling in form may be improved by judicious pruning, and by pegging a few shoots into places that are vacant. We have had the rock candytuft on a highly-dressed border, and we kept all the plants in shape by annual clipping, the result being that they were as round and convex as watch-glasses. We do not advise any general adoption of this procedure, but where everything should be formal and precise it is at least admissible.

ABUTILON.

THE ABUTILON.

Abutilon striatum.

"IT never rains but it pours" may be a suitable text for a discourse on the abutilon. Only the other day—say the day before yesterday—somebody discovered that the abutilon might by careful cross-breeding be made to yield a vast variety of characters and colours. Presto! Now there are dozens of new names and varieties, and they constitute attractive and interesting collections of decorative plants for festive dressings as well as for the quiet conservatory. But as the florists multiplied the varieties they forgot the native inborn elegance of the plant, and were content to grow their named varieties in the form of diminutive bushes, certainly very pretty, but affording no idea of the proper splendour of the plant. Let us, then, turn from the new to the old fashion. The turn takes us into a snug conservatory, where the plants are allowed to show a little of the negligence of nature "wild and wide." Here the abutilon appears as a luxurious vine, with elegant leaves

divided into pointed lobes, and bearing curious bell-like flowers of a dull orange-colour, and curiously striped. It is singular that a South American tree should obtain an Eastern name, for abutilon is Arabic for mallow, and this plant is of the mallow tribe. It is the striped mallow vine of the Rio Negro and the Organ Mountains.

The common and comparatively hardy plant introduced from Brazil in 1837 as *Abutilon striatum* has been found to thrive in the open border as a wall-plant in sheltered spots in the south-west of England, but, generally speaking, the cool conservatory is the proper place for it. There it soon clothes the rafters with its elegant leafage, and it has the great merit of producing flowers during about nine months out of twelve. Any good soil will suit it, and in a town greenhouse, where the light is neither abundant nor pure, it will thrive as well as any good thing that may be planted.

The named varieties to which reference has been made have been raised from *A. striatum*, *A. venosum*, *A. Darwinii*, and *A. vexillarium* chiefly, and they comprise flowers of all colours, save shades of blue, and the prevailing tones are white, yellow, and red. Amongst them are varieties with richly variegated leaves, and these are not only of great value as conservatory plants, but are largely employed in what is called "sub-tropical bedding" in grand gardens, the trees being allowed to rise to a height of two to four feet, and being mixed with other plants of like growth to bring out the splendid colours of their leafage. This is all very fine and very wonderful, of course, but we are rustic enough to prefer the half-wild abutilon vine that we courted under to all the great sub-tropical beds of contrasted leafage that have been planted in both hemispheres.

About a dozen species of abutilon are recorded in the books, but only about half a dozen (or less) are really cared for by cultivators, because of the fewness of the flowers they produce. They are all of an accommodating nature, requiring only greenhouse temperature in winter and a fairly good soil of light texture, with rational watering. A little draught and a little damp will not kill them, and although none of them are, properly speaking, hardy, yet none of them are fastidious. To strike cuttings in summer is easy work, but those who soar high in abutilon culture must learn to graft or bud the rarer kinds on nice young stocks of *A. striatum* or *A. vitifolium*.

Of the varieties there are at least a dozen that deserve a place in every greenhouse. It is important, however, to select the most distinct and free-flowering, for they differ much in relative merit. The very best are the following: —*Anna Crozy*, the flowers lilac-pink, veined with white; *Chinois*, flowers large, pale orange-shaded red; *Darwini compacta*, bright rose, reticulated with crimson; *Le Grelot*, rose shading to magenta; *Louis Marignac*, delicate pink; *Princess Marie*, rosy lake; *Prince of Orange*, orange-red, veined with crimson; *Reine d'Or*, clear gold yellow; *Seraph*, pure white; *Vesuvius*, brilliant red. The best of those with variegated leaves are *Darwini tesselatum*, *Niveum marmoratum*, *Sellowianum marmoratum*, and *Vexillarium variegatum*. These thrive in common soil, and are fine decorative plants for the summer garden.

The genus sida is nearly related to abutilon. It has been said that the species of sida flower with such punctuality that a complete dial of flowers might be constructed by the aid of the several species. Perhaps.

All the plants of this category yield a strong pliable

fibre; and during the Lancashire cotton famine the abutilons were made note of as possibly capable of helping us out of a difficulty. The cotton-plant (*gossypium*) is a mallow, and not very far removed in relationship from the plants now before us. Amongst the abutilons occurs one edible species, *A. esculentum*. In Rio Janeiro it is known as "Bencao de Deos." It is not the fruit but the flower that is eaten, and it is a somewhat common article of food with the people of Rio.

WINTER ACONITE.

THE WINTER ACONITE.

Eranthis hyemalis.

IN common with many of the humbler kinds of garden flowers, the winter aconite is but little known to humble gardeners, but the managers of "great places" know it, and prize it, and turn it to good account in the comparatively new order of decoration known as "spring gardening." It is but a little herb, with a dark tuberous root, producing in February or March yellow flowers, surrounded by a whorl of glossy-green deeply-cut leaves. It lasts but a short time, and is not very showy even at the best.

But as one star compels attention when the sky is black and no other star is to be seen, so this little flower, which is many degrees inferior in brightness of colouring to a common buttercup, has a most delightful appearance if we have the good fortune to see it on a soft sunny day in February. Then, indeed, it seems to say the spring is surely coming, and even the frost-defying daffodils, that

come before the swallow dares, are outdone in their haste to scatter gold upon the ground to pay for the reckless banqueting that is about to begin. In its own grassy nooks of sunny Italy it flowers at Christmas, but in this dull clime it does not often dare to lift up its head until the month of March, and even later, if the winter has been of the cruel kind that people, as if in contempt of the taste of their ancestors, cruelly describe as "old-fashioned." The humble gardèner, as remarked above, scarcely knows this plant, although it is one of the cheapest, and will grow anywhere. But the gardener who has to keep a great parterre at all times gay has long since discovered its value, and therefore he plants hundreds or thousands, as the case may be, to produce masses of golden flowers, according to the requirements of his complicated designs in colour. It will not be expected that in this place there should appear a disquisition on the bedding system, but it is proper to note that in "spring bedding" the principal elements are such homely flowers as daisies, polyanthuses, forget-me-nots, primroses, and pansies; and where lines or blocks of soft yellow are required, the artist dips his pencil into *Eranthis hyemalis*, or, in other words, he plants the little herb, and leaves Dame Nature to bring out the colour.

But this is not the only way in which the winter aconite is employed in great gardens. One of the most pleasing of many good features in the spring gardening at Belvoir Castle consists in the management of grassy slopes that occur, as it were casually, in connection with the walks. These slopes are planted with snowdrops, crocuses, winter aconites, and other flowers that mingle unobtrusively and naturally with the grass, and their flowers are

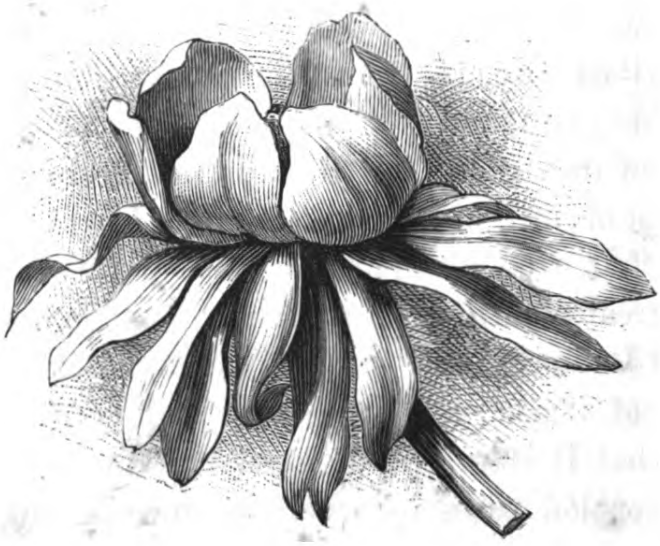
indescribably charming, springing as they do from the rich green herbage, as if, like the wild buttercups and daisies, they were members of the gay family of vagrants to whom the prairie is a happy land.

But there is nothing new or strange in the employment of the winter aconite, either in the formal parterre or the half-wild grassy bank that perhaps mingles softly with a knoll of ivy. These matters are mentioned for the purpose of showing that a very humble and by no means showy plant has its uses, and is, in its way, invaluable to the master of decorative gardening. The little daughter of a great painter said to him one day, "Oh, how you are loading that picture with mud-colour!" The father took the pretty rebuke laughingly, and replied, "Yes, my little cherub, it will prove the best picture I have painted, and enable you to ride through the mud in a painted coach." And so it proved; but it was a long time ere the child could see beauty in mud-colour.

The winter aconite is a member of the great Ranunculus family, in which we meet with the true aconite, which has been described already. In the description reference is made to this plant, and to the opinions of the old herbalists in respect of its virtues. In Gerarde it is admirably figured under the name of "winter woolfesbane, *Aconitum hyemale.*" He says: "It groweth upon the mountaines of Germanie; we haue great quantitie of it in our London gardens. It bloweth in Ianuarie; the seed is ripe in the end of March." He speaks of it as "very dangerous and deadly" as it is, and adds that it is mighty against the bites of scorpions: "If the scorpion passe by where it groweth and touch the same, presently he becommeth dull, heauie, and sencelesse."

The winter aconite is scarcely to be regarded as a good

border flower. At all events, when planted in the border it is exposed to the risk of being dug up and destroyed—a risk it shares in common with many good things that never last long where the practice of promiscuous digging of borders is permitted. The jobbing gardener appears to have been commissioned by Mephistopheles to crush out of existence all the good hardy plants, and to supply in their place geraniums at three shillings a dozen. He does his best, at all events, to annihilate daffodils, and pæonies, and delphiniums, and day-lilies, and aconites, and dielytras, because they do not show themselves at the time when he plies his spade industriously. Perhaps he ought to know that their roots are alive below ground, and ought not to be made into mincemeat; but we must make allowances, for it often happens that between what is and what "ought" to be there is a great gulf fixed, and a man may be a gardener and yet not know everything.



CHRISTMAS ROSE

THE CHRISTMAS ROSE.

Helleborus niger.

AMONGST the "old-fashioned flowers" that one might look for in the little out-door paradise of Lady Corisande, there would be none more worthy of care and honour than the Christmas rose. It is quite a proper thing for a Londoner fond of flowers to visit Covent Garden Market at an early hour on a morning of December to see the Christmas roses that are offered for sale. They appear in surprising quantities, and the visitor unused to the ways and doings of the market will ask, "Where do they come from?" But their size, their perfection, their perfect purity of colour are more surprising than their number, and he will perhaps ask a second question, "How is it done?" And thereby hangs a tale.

The Christmas rose is one of the easiest plants to grow, but when left entirely to itself it flowers late, and the flowers are much torn and discoloured by the unkind

weather that usually prevails in its flowering season. The plant is a native of Southern Europe, and needs for its perfect development better conditions than are usually secured for it in English gardens, more especially as it flowers at a time of year when the elements are in a mood to make war upon every green herb, and tear away the one last leaf that still hangs upon the tree. To put this plant in a common border is not quite fair to it. A sheltered nook should be chosen, and a plot of ground prepared by draining it thoroughly, unless it is naturally well drained already, and by deep digging and liberal manuring. It does not need any particular kind of soil, for any fairly good garden loam will suit it perfectly, but the station should be well prepared, and the plants should be put out upon it when their leaves are dying down, and they are going naturally to rest. Sheltered, half-shaded, grassy banks answer admirably for plantations that are to be left to flower naturally, but the plantation in the sheltered nook we are now considering is not to be left to flower naturally. As soon as they begin to push in the late autumn they should all be covered with frames or hand-lights, which must be freely ventilated in mild weather, but during frost must be kept close, both to prevent a check and protect the flowers. By such management early flowers will be secured, and they will be large, thick, and pure. Like those of the white Japan anemone, they may be likened to water-lilies, but they need not be likened to anything—it is enough to know that they are Christmas roses. An anonymous poet, weaving the "winter rose" into the garland of his hopes and cares, has indulged in the fancy that the flower is fragrant, but it requires quite a poet's imagination to extract an odour from the flower.

"Alas! on thy forsaken stem
My heart shall long recline,
And mourn the transitory gem,
And make the story mine!
So on my joyless winter hour
Has oped some fair and fragrant flower,
With smile as soft as thine.

"Like thee the vision came and went,
Like thee it bloomed and fell,
In momentary pity sent
Of fairer climes to tell;
So frail its form, so short its stay,
That nought the lingering heart could say,
But hail, and fare thee well!"

In the growth of the new taste for hardy plants, which we may regard as a revival of old-fashioned gardening, the hellebores have obtained a fair share of attention, and they now constitute a very important feature of the hardy garden. As the trumpet daffodils are called "Lent lilies," so the spring flowering hellebores are called "Lent roses." One of the most interesting of the late flowering kinds is the sweet hellebore (*Helleborus odorus*), which produces pale green leaves, and greenish drooping flowers which are agreeably scented. The Olympian hellebore (*H. Olympicus*) is a handsome plant, producing purplish flowers. The Oriental hellebore (*H. Orientalis*) is strikingly handsome, the flowers being large, of a soft rose-colour, and accompanied by an ample and elegant leafage. The purple hellebore (*H. atrorubeus*) produces beautiful flowers, which at first are violet-purple, and afterwards dull purple, with an admixture of green. There remain two fine species that are particularly well adapted to plant in woodland walks. They are *H. abchasicus*, with greenish flowers, and *H. fœtidus*, with greenish-purple flowers. These have hand-

some winter foliage, and there should be a few clumps of each in spots where they are likely to be seen during a walk round on a sunny winter day.

A few beautiful garden varieties have lately been introduced from the Continent, and have found much favour with English amateurs. They are mostly of German origin, and are produced by crossing the purple and green flowered species, the result being in some cases flowers richly spotted, and of various shades of greenish-white, maroon, purple, and purplish-rose. The conspicuous yellow stamens, which contribute so much to the beauty of the white-flowered Christmas rose, are distinct and welcome features of these new varieties of Lent roses, adding an element of cheerfulness that compensates for their otherwise dull colouring, for the colours of the petals are in all cases toned down by infusions of green and purple that render them impure. A collection of hellebores may now be looked for in every garden of hardy plants, to combine with the daffodils to "take the winds of March with beauty."

MARIGOLD

MARIGOLD.

Tagetes erecta.

PREVIOUS picture of a very humble marigold suggested homely thoughts, and the result was a merely gossiping paper; but the showy flower now before us demands a learned treatise, and we must show that we are equal to the inspiriting theme. We shall therefore dive into the depths of our erudition, and thence rebound to the highest heights of philosophy, in the endeavour to display to the reader the immensity of our knowledge of marigolds.

A marigold may be regarded as a golden Mary, but the name has no necessary reference whatever to the Virgin Mary, or to any Mary; it is a corruption of the old Anglo-Saxon *mersc-mear-gealla*, the golden marsh flower (*caltha*), which is still called the "marsh marigold," although it is really a ranunculus. The marigold proper is a composite plant, and far removed from the ranunculus and all its cup-

flowered relations. In the "Grete Herball" it is called "Mary Gowles." Dr. Prior, in his "Popular Names of British Plants," remarks that "it is often mentioned by the older poets under the name of *gold* simply." Notwithstanding all this, the marigold *became* the flower of the Virgin Mary, if it was not so originally. The name being once corrupted, the association with a personage followed, and in the latest days of history, say the seventeenth century, it became the symbol of Queen Mary. The celebrated Child's Bank, that was so long associated with old Temple Bar, had for its sign the marigold, and the motto AINSI MON ÂME, which necessarily applies to a sunflower. This appears to discomfort us; but no, the marigold *is* a sunflower, quite as much a sunflower as the gigantic American plant that is now known by the name. In the poem by George Wither, quoted at page 63, we read that

> "Every morning she displayes
> Her open brest, when Titan spreads his rayes."

In Perdita's garland for men of middle age we find

> "The marigold that goes to bed with the sun,
> And with him rises weeping."
>
> *Winter's Tale*, iv. 3.

In the fifty-fourth sonnet of Drummond we have—

> "Absence hath robb'd thee of thy wealth and pleasure,
> And I remain, like marigold of sun
> Depriv'd, that dies by shadow of some mountain."

That the marigold was often regarded as especially emblematic of the Virgin Mary is certain. We see marigold windows in Lady chapels, and we may call them sunflowers if it suits us to do so, but the plant we now know as the sunflower was certainly unknown in Europe

previous to A.D. 1500. The dedication of the flower to Queen Mary would naturally occur to the adherents of her cause, and hence it is not surprising to find in a ballad of her time, as quoted in "Notes and Queries" (S. 5, xii. 418), such lines as the following :—

"To Mary our queen, that flower so sweet,
This marigold I do apply ;
For that name doth seme so meet
And property in each party.
For her enduring patiently
The storms of such as list to scold
At her doings, without cause why,
Loath to see spring this marigold."

The flowers known as marigolds represent two distinct genera of composites. The common weedy marigold figured at page 61 is *Calendula officinalis ;* the generic name implying that it keeps pace with the calendar—that is to say, it flowers every day throughout the year, which is very nearly true. The great African marigold is *Tagetes erecta ;* it is not African, but Mexican, as are also the more refined French marigold, *Tagetes patula,* and the fine-leaved and the shining-leaved kinds, *T. tenuifolia* and *T. lucida.* The genus Tagetes is named in honour of an obscure Etruscan hero of doubtful pedigree. It seems that Jupiter had a son named Genius, and this Genius had a son named Tages, who taught the Etruscans the art of divination. In the fifteenth book of Ovid's "Metamorphoses" he is thus referred to in connection with the transformation of Egeria :—

"The nymphs and Virbius like amazement fill'd,
As seized the swains who Tyrrhene furrows till'd,
When heaving up, a clod was seen to roll,
Untouch'd, self-mov'd, and big with human soul.

The spreading mass, in former shape deposed,
Began to shoot, and arms and legs disclosed,
Till, form'd a perfect man, the living mould
Oped its new mouth, and future truths foretold;
And, Tages named by natives of the place,
Taught arts prophetic to the Tuscan race."

It is a grave defect of the Mexican marigolds that they emit an unpleasant odour, and therefore are scarcely fit for bouquets. The pretty little *T. tenuifolia* (also known as *signata*) is less objectionable than the others in this respect, and, generally speaking, is the most useful of all, because of its suitability for bedding, to take the place in dry soils of that capricious flower the yellow calceolaria. All these Mexican marigolds are half hardy, and therefore the seed should be sown in a frame or greenhouse in March and April, and the plants carefully nursed until strong enough to take their place for flowering in the beds and borders.