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FAMILIAR GARDEN FLOWERS

BY

SHIRLEY HIBBERD, F.R.H.S.

WITH

COLOURED PLATES

BY

F. EDWARD HULME,

F.L.S., F.S.A.

CASSELL & COMPANY, LIMITED.

FAMILIAR GARDEN FLOWERS.

FIGURED BY

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

AND DESCRIBED BY

SHIRLEY HIBBERD.

"The loveliest flowers the closest cling to earth,
And they first feel the sun: so violets blue;
So the soft star-like primrose drenched in dew—
The happiest of spring's happy, fragrant birth.
To gentlest touches sweetest tones reply.
Still humbleness with her low-breathed voice
Can steal o'er man's proud heart, and win his choice
From earth to heaven, with mightier witchery
Than eloquence or wisdom e'er could own.
Bloom on then in your shade, contented bloom,
Sweet flowers, nor deem yourselves to all unknown,—
Heaven knows you, by whose gales and dews ye thrive;
They know, who one day for their altered doom
Shall thank you, taught by you to abase themselves and live."

KEBLE.

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LONDON, PARIS, NEW YORK & MELBOURNE.

PREFACE.

In presenting the fifth bouquet of flowers from the home garden, occasion is made for returning thanks for the generous manner in which, with all their faults, the several gatherings have been received. The form of the work compels concentration, and it is well known that to write a long letter is much easier than to write a short one. It has sometimes troubled me that the brief space at command for presenting information compelled me to omit matters which, at the moment of writing, appeared to me of the highest importance. But now, when the task is completed, I see clearly that in the lightest of brief sketches there may often be conveyed a considerable amount of useful information, and perhaps in such a case as the present all that is really required. Unhappily, the shortness of the story is no defence against the intrusion of error, and while returning thanks for the cordial reception which the former volumes of the work have obtained, it is necessary to ask pardon for any slips of the pen that may be discovered. S. H.

CONTENTS.

SYNOPSIS.

FOXGLOVE. The familiar name is explained in the essay. The botanical name *Digitalis* means finger-stall or "glove," which may appear to give propriety to the popular name. N.O., *Scrophulariaceæ*, or Figworts. LINNÆAN: 14, *Didynamia*; 2, *Angiospermia*.—In this large and important order are many curious and beautiful plants, not a few of them characterised by distinct toxic qualities. The foxglove, snapdragon, calceolaria, mullein, mimulus, and veronica are perhaps the best known amongst many, but more for their beauty as garden flowers than for their medical uses, although digitalis is a plant of considerable importance in modern medicine. They are mostly to be classed under herbs and shrubs, but the noble pawlonia is an example of the trees of the order, and the buddlea is intermediate between the trees and the shrubs. The catalpa is sometimes classed with the figworts, but its proper place is with the bignoniads. Another plant often associated in this group is the gloxinia, but this is a member of the gesnerworts, and therefore it is scarcely allowable to speak of the foxglove—as it is sometimes spoken of—as the "British gloxinia." The common foxglove is the best plant of its genus; other species of digitalis must rank below it, but a few of the number are interesting, more especially *Digitalis aurea*, the yellow flowering foxglove, a native of Greece.

DEUTZIA, named after J. Deutz, a respectable citizen of Amsterdam, is a member of the N.O. *Philadelphaceæ*, or Syringas. LINNÆAN: 10, *Decandria*; 3, *Trigynia*.—The deutzias and philadelphias are so nearly related that it is rather for convenience than for definite technical reasons that they are separated. They are deciduous shrubs, with white or pink flowers which come near to myrtle blooms in general character, but it may also be said that they are not far removed in some of their characters from the saxifragas and escallonias. The representative species are scattered over the south of Europe, North America, Japan, and India. In the arts they have scarcely acquired a place,

although the rough leaves of *Deutzia scabra* are used in Japan by polishers, probably on account of a deposit of silica. The flowers of our mock orange (*Philadelphus coronarius*) have been employed for adulterating oil of jasmine, although the odour of the mock orange is coarse compared with that of jasmine.

HELICHRYSUM, from *helios*, the sun, and *chrysos*, gold; the familiar name "everlasting" is explained by the dry chaffy texture of the flowers, which renders them so well adapted for use, when dried, in winter bouquets. Once more we are carried into the heart of the great aster family, or N.O. *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 2, *Superflua*.—The alliance of helichrysum is with aphelexis.

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

SUNFLOWER, or **HELIANTHUS,** the flower of the sun, is a glorious member of the great family of composites or asters.

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

SALVIA, from *salvo*, to save, in allusion to the medicinal properties of the sage and other aromatic plants of the same genus. N.O., *Lamiaceæ*, or Lipworts. LINNÆAN: 2, *Diandria*; 1, *Monogynia*.—This order has several distinctive characters. The stems are four-cornered, the leaves are opposite, replete with receptacles of aromatic oil; the flowers in whorls or opposite cymes, the corolla bilabiate, the upper lip overlapping the lower, which is larger and three-lobed; the fruits are small nuts enclosed within the persistent calyx. As they come

near to borageworts, note should be taken of their square stems and irregular flowers, for borageworts have round stems and regular flowers. The labiates are natives of temperate regions chiefly, and are very abundant. In the cooler parts of India there are over two hundred species; they love dry sunny places, as is the case generally with aromatic plants. In the arts they are much used, as in the preparation of perfumes and sauces; a few are eatable, and many have valuable medicinal properties. The famous patchouli is a labiate; lavender, mint, horehound, and rosemary are familiar labiates renowned for their several uses. As regards the rosemary there can be no question of its power of encouraging the growth of hair, and thereby curing baldness; it is used also in the manufacture of Hungary water, and contributes in an especial degree to the pungent aroma of eau de Cologne. The famous Narbonne honey is derived from the flowers of rosemary, which abounds in that district of France.

LACHENALIA reveals its origin if spelt La Chenalia, M. de la Chenal, the botanist, being commemorated in the name. N.O., *Liliaceæ.*

HYDRANGEA, from *hudor* or *hydor,* water, and *aggeion,* a cup; in allusion to the form of the seed-vessel. N.O., *Hydrangeaceæ.* LINNÆAN: 10, *Decandria;* 2, *Digynia.*—The hydrangea is often called the Chinese guelder-rose, and not only is there warrant for the association in the general appearance of the bold heads of bloom, but they agree also in the peculiarity that in every head of flowers a certain number are infertile, and these give the special character to the display. As regards true affinities, however, the hydrangeas come nearest to the saxifrages, while the deutzias and philadelphs are not far off. The plants of this order are all shrubs, with simple opposite leaves, and flowers in cymes; usually the fertile flowers are very small and crowded in the centre, while the flowers on the outer part of the cyme are barren and larger than the rest, and, in fact, the chief source of those attractive qualities that persuade us to cultivate them. The species are mostly natives of the temperate parts of Asia and America, about half of them belonging to China and Japan, and there are two that belong to the southern hemisphere. They delight in rich soil with much moisture, and some amount of shade. In a dry soil exposed to sun and wind, they are most unhappy. One species, known as *Hydrangea Thunbergi,* furnishes from its leaves a tea that is greatly valued in Japan, where it is called Ama-tsja, the tea of heaven. The other species, so far as known, have only their beauty to recommend them to notice.

CONVALLARIA, from *convallis*, a valley, and *rica*, a mantle, in allusion to the leaves. N.O., *Liliaceæ*. LINNÆAN: 6, *Hexandria;* 1, *Monogynia*.—See synopsis, First Series.

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

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

VIBURNUM owes its name to the ancient use of its flexible shoots, *vieo* meaning to tie with twigs or to hoop. N.O., *Caprifoliaceæ*. LINNÆAN: 5, *Pentandria;* 3, *Trigynia*.—The caprifoils include all the honeysuckles, Guelder roses, snowberries, and elders. The order comprises trees, shrubs, and herbaceous plants, with opposite leaves and corymbose flowers; the fruit is dry or fleshy. Strange to say, these familiar plants are closely related to the cinchonads, and the designation of "China Guelder rose" for the hydrangea is in some degree justified by the very near approach of that plant to the true Guelder roses. The members of the order of caprifoils are mostly natives of the northern parts of Europe, Asia, and America; many of them produce fragrant flowers, as, for example, the honeysuckles, while the berries of *Lonicera cærulea* are a favourite food of the Kamtchadales, and the wine made from the elder-berries is sufficiently well known. It should be remarked, however, that this is a suspicious family; active qualities are not wanting amongst them, and even the favourite elder-berry is far less wholesome than popular opinion represents, and possibly would often prove mischievous were not the fermented juice "qualified" by the addition of a more potent liquor.

AMYGDALUS is of uncertain origin. By some it is derived from *amysso*, in allusion to the furrows in the stone of the fruit; by others from a Hebrew word that derives its meaning from the early appearance of almond flowers in spring. N.O., *Drupaceæ*. LINNÆAN: 12, *Icosandria;* 1, *Monogynia*.—In a large classification the peach, almond, cherry, plum, and laurel belong to the N.O. *Rosaceæ*, or roses. But a large classification is often inconvenient, and the botanists feel the need of "breaking it up." This has been wisely accomplished in placing the stone fruits in a separate order, for not

only do they differ from true roses in this particular feature, but in other respects, notably in the production of a poisonous principle that is prominent in the almond, and gives its peculiar flavour to the kernels of peach and cherry stones. The pomes or appleworts constitute an equally distinct group of rosaceous plants, and are classed as N.O. *Pomaceæ.* In this order or sub-order we have the apples, pears, quinces, cotoneasters, thorns, and photinias. The almondworts, which now concern us, are distinguished from the true roses and pomeworts by the pistil being a solitary, simple carpel, changing when ripe into a drupe, and in the general presence in bark, leaves, or fruit—sometimes in all three—of hydrocyanic acid.

DELPHINIUM, from *delphin,* a dolphin, the resemblance to a dolphin's head being found in the flower. N.O., *Ranunculaceæ.* LINNÆAN : 13, *Polyandria ;* 3, *Trigynia.*

JASMINUM, from the Arabic *Ysmyn.* N.O., *Jasminaceæ.* LINNÆAN : 2, *Diandria ;* 1, *Monogynia.*—The members of this interesting order are free-growing shrubs, many of them having twining stems; the leaves are opposite or alternate; the flowers are white or yellow, and often sweet-scented. The corolla appears to consist of five pieces, but in reality consists of one only, which, like that of the primula, is contracted to a tube below and expanded into a "limb" above, with lobes that to the casual eye are as distinct petals. The jasmines and olives are near relations, but botanists keep them separate, for the oliveworts have irregular flowers and deeply-lobed fruit. The jasmines are mostly Asiatic, but there are a few natives of America and Africa, while the Australian continent is not without them, and the south of Europe can claim two. The chief producers of the essential oil of jasmine are only three in number: they are *Jasminum officinale,* the common white; *J. grandiflorum,* the large-flowered Indian; and *J. sambac.*

DIANTHUS, from *dios,* divine, and *anthos,* a flower, the "flower of Jove." N.O., *Caryophyllaceæ.* LINNÆAN: 10, *Decandria ;* 2, *Digynia.*

MYOSOTIS, from *mys* or *mus,* a mouse, and *otis,* an ear; in allusion to the shape of the leaves. N.O., *Boraginaceæ,* or Borageworts. LINNÆAN : 5, *Pentandria ;* 1, *Monogynia.*—It is important to note as characters of the borage family that the stems are round, and the leaves alternate, whereas in the labiates that come so near to them the stems are square, and the leaves opposite; moreover the

flowers of borageworts are regular, while the leaves are not furnished with resinous dots, and their properties are emollient rather than aromatic. The plants of this order are mostly natives of temperate regions of the northern hemisphere, very rare in arctic, and quite unknown in tropical countries The "coolness" of borage, for which it is employed in flavouring beverages, may be attributable to the presence of nitre. There are not many useful plants in the family, but we must remember that the prickly comfrey (*Symphitum asperrimum*) has acquired importance in late years as a forage plant, and the young leaves of the common comfrey (*S. officinale*) have some repute as a substitute for spinach.

VERBENA, from the Celtic *vervain*, a plant of magic and mystery.

> "Here holy vervayne, and here dill,
> 'Gainst witchcraft much avayling;
> Here horehound 'gaynst the mad dog's ill,
> By biting, never failing."

N.O., *Verbenaceæ*. LINNÆAN: 14, *Didynamia;* 2, *Angiospermia*.—The plants of this order are trees or shrubs, the flowers tubular, and of one petal as in the primula, jasmine, and many other subjects in which the lobed limb suggests a series of petals. Several members of the order are of importance in the arts, but none of them are of great utility, save one, and that is the renowned *Tectona grandis*, the teak of the ship-builder, the noblest of the timbers of Asia. Associated with the verbenas are, as above noted, the teak, the callicarpa, clerodendron, vitex, and the lantana.

LAPAGERIA is so named in honour of Joséphine Lapagérie, wife of the first Napoleon Bonaparte, whose beautiful garden at Malmaison contributed in various ways to the advancement of botanical science. N.O., *Philesiaceæ*. LINNÆAN: 6, *Hexandria;* 1, *Monogynia*.—This fine South American twiner is allied to the smilax and the philesia. The fruit is said to be eatable; the root has the properties of sarsaparilla.

AGAPANTHUS, from *agape*, love, and *anthos*, a flower. N.O., *Liliaceæ*.

RESEDA, from *resedo*, to calm, from its supposed healing or sedative properties. N.O., *Resedaceæ*. LINNÆAN: 11, *Dodecandria;* 3, *Trigynia*.—Although the fragrant mignonette is a native of Egypt, we have two native species of reseda that closely resemble it, but have

not its delicious fragrance. The British mignonette is known as Dyer's rocket, having in ancient times been much employed as a green dye. The plants of this order are few in number, and are all of a soft herbaceous character, producing flowers in racemes or spikes. Our garden mignonette is a favourite with the honey-bees, but the honey they obtain from it appears to have no special character.

ALTHEA, from *altheo,* to cure, in allusion to the emollient properties of the mallows and their kindred. N.O., *Malvaceæ,* or Mallows. LINNÆAN: 16, *Monadelphia;* 8, *Polyandria.*—For notes on the order, see under "Malope," in synopsis to Second Series.

CHRYSANTHEMUM, from *chrysos,* gold, and *anthos,* flower. N.O., *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*

PHYLLOCACTUS is a leafy cactus, the growth being leaf-like; the flowers form on the edge of the expanded phyllode or leaf. N.O., *Cactaceæ.* LINNÆAN: 12, *Icosandria;* 1, *Monogynia.*—This represents the great family of succulent plants known as Indian figs, all natives of the American continent, though variously described as natives of China, the Mauritius, and even of Europe; in all these cases the plants have been introduced and naturalised, and though appearing as wildings are of American origin. A "leafy cactus" is a plant without leaves, the greater part of this great family being characterised by the absence of those organs, the exact state of the case being that leaf and branch are of one and the same substance, at least, in the earlier stages of growth, although in due time woody fibre is deposited and considerable rigidity of structure is secured. The flowers are in many instances very showy, and consist usually of an indefinite number of sepals and petals, with many stamens and stigmas. The fruit is succulent, many-seeded, and in most cases wholesome and agreeable to the palate, though, generally speaking, tame and insipid. In Mexico the fleshy cactuses are eaten by cattle, being first bruised by them with their hoofs to subdue the formidable spines. In the Galapagos, land-tortoises subsist in great part on these plants. The insect that produces cochineal subsists on an opuntia, which was formerly largely grown for the purpose, but is perhaps now, in great part, superseded by aniline dyes.

IMPATIENS is explained by touching the ripe seed-pod of any kind of balsam, the elasticity of the valves causing the sudden ejection of the seeds to a considerable distance. N.O., *Balsamaceæ.*

LINNÆAN: 5, *Pentandria;* 1, *Monogynia.* — The order consists of herbaceous plants, mostly annuals, with irregular flowers. The number five rules in the flower, there being five sepals, five petals, five stamens, five carpels, consolidated into a five-celled ovary, and there are other repetitions of the same number. Although so eccentric in habit, and with flowers irregular in construction, the balsams come near to the sedate and orderly crane's-bills. The balsams, however, are for the botanical student far more interesting than the crane's-bills; in fact, the problems suggested by the flower are intricate and perplexing. The species are partial to warmth and humidity, and most of them prefer shady places.

AMARANTHUS is of doubtful origin, but the accepted etymology is from the supposed imperishability of the flower, *a-mairaino* implying a thing that does not wither. N.O., *Amarantaceæ.* LINNÆAN: 21, *Monœcia;* 5, *Pentandria.*—The species are herbs or shrubs, with flowers in dense heads or spikes, coloured sepals, and no proper petals. They come near to the chenopods in general structure.

GENTIANELLA.—See synopsis, Third Series, p. xvi.

ERYNGIUM, from a name adopted by Pliny. N.O., *Apiaceæ,* or Umbellifers. LINNÆAN: 5, *Pentandria;* 2, *Digynia.*—Between an eryngo and a parsley or hemlock, what a difference! It seems to the casual eye impossible that plants so apparently dissimilar can be so closely related. But as happens again and again, the gradations are of the most gentle kind in the several modifications, and thus the extreme forms are brought into harmony by the several links that unite them. The plants are herbaceous, the leaves divided, the flowers in umbels. Eryngium is an extreme form of an umbellifer; the inflorescence needs but to be carefully examined to reveal its relationships.

CENTAUREA, a classical name commemorating the curing of a wound in the foot of Chiron, the centaur, by the juice of the plant. N.O., *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 3, *Frustranea.*

TACSONIA is named from *tacso,* by which one of the species is known in Peru. N.O., *Passifloraceæ.* LINNÆAN: 16, *Monadelphia;* 2, *Pentandria.*—The passion flowers constitute a magnificent family of herbs and shrubs, mostly of rampant growth and climbing habit. The flowers are unique in structure as well as in beauty; the fruits are

often handsome, and make even more show than the flowers in some instances, while a certain number of them are edible, though as regards wholesomeness sometimes a little doubtful. The botanists are not agreed as to the structure of the flowers, for it is a question if there are any proper petals; but the view that appears to prevail is that the outer series of floral envelopes are sepals, and those within them petals. There is yet another view possible; to consider that there are no sepals, but the whole series within and without are petals.

TRITOMA, from *treis,* three, and *temno,* to cut, in allusion to the three sharp edges of the hard-textured leaves. N.O., *Liliaceæ.* LINNÆAN: 6, *Hexandria;* 1, *Monogynia.*

DAHLIA, named after Dahl, a Swedish botanist. N.O., *Asteraceæ.* LINNÆAN: 19, *Syngenesia;* 2, *Superflua.*

"Broods there some spirit here?
The summer leaves hang silent as a cloud,
And o'er the pools, all still and darkly clear,
The wild wood-hyacinth with awe seems bowed;
And something of a tender cloistral gloom
Deepens the violet's bloom.

"The very light, that streams
Through the dim dewy veil of foliage round,
Comes tremulous with emerald-tinted gleams,
As if it knew the place were holy ground;
And would not startle, with too bright a burst,
Flowers, all divinely nursed."

FOXGLOVE.

FOXGLOVE.

FAMILIAR GARDEN FLOWERS.

FOXGLOVE.

Digitalis purpurea.

IT is proper that the fox should be provided with a glove, for, as a midnight marauder, a muffled hand may be of the first importance in the prosecution of his business. Opinions differ as to the precise meaning of the familiar name of this, the noblest of our British wildings; the botanical name *Digitalis* is of German origin—that is to say, a German botanist fitted the plant with a Latin name, because up to his time, 1542, it had not been recognised in either Greek or Latin. Dr. Prior is decisive about "foxglove;" but for all that, those learned in the definition of names have had much to say about it. *Digitalis* is from

digitabulum, meaning "thimble;" and the flower may be likened to the simple household appliance for the comfort of a wounded digit known as a "thumb-stall," or soft thimble. But what does the fox want with such a thing? The assumption with which we open this paper, that as a footpad he would like to follow his trade quietly, seems not to help us much, even in the region of fancy; for, to put the case in another way, the fox does not want a glove or a thumb-stall, he wants four seven-league silent boots! In Norway the plant is not the fox's glove, but the fox's bell, to provide him with music in the gloaming. In the Anglo-Saxon there is no such name as foxglove, but *foxes-gliew*, for it happens that the flowers, as they hang from the slightly arching stem, resemble the ancient musical instrument, consisting of bells attached to a rod, that was called *gliew*, and used for the production of bell-music. It may occur to the inquiring reader, whether the men who likened the flower of this plant to a tintinnabulum might not have done better, in the gratification of their fancy, to select a *Campanula*, or "bell-flower." Another view of the subject makes this the folk's glove, or fairies' glove; but we may suppose it large enough for a fairies' house—that is, for some sorts of fairies. We now make a conjecture which is at all events original. This is a spotted flower; a spotted picture or book is called "foxy," and by parallel, a spotted thimble may be a foxy glove. If the adjective "foxy" is of respectable antiquity, the proposal acquires respectability; but we suspect it is of modern origin and of poor lineage.

The distribution of the plant and its geographical characters are matters of some interest. It is, in one sense,

universal; but in the Eastern counties it is scarce and poor, in the Western counties abundant and splendid, while in the Midlands it very much avoids valleys and open plains, but attains to a distinct power in the summer season wherever the rainfall is considerable. Thus, in the dales of the Peak district, and throughout the Lake country, and all through the western coasts, on hard rock, on poor gravel, and on railway banks, the foxglove is conspicuous for frequency and splendour. Perhaps nowhere in England is there a finer display of its flowers than on the road from Buxton to Leek, and in but few places does it attain to such richness of colour as on that road, and also on the water-shed over which passes the railway line between Dolgelly and Llangollen, in mid-Wales.

When grown as a garden flower the foxglove should never be planted in a dry, breezy, starving situation. To be elevated is quite to its liking, if it is sheltered by leafy surroundings; but often an elevated site is too arid for this moisture-loving beauty, and the fernery, or any snug nook of a leafy kind and a little wild in character, would promote a fine growth, and at the same time set off the peculiar beauties of the plant. We have never seen foxgloves more happily placed for decorative effect than on the rockery in the Royal Gardens, Kew, where, in truth, they constitute what is called a sensation, for at the entrance to the defile they rise high above our heads, and we see their fine spires of purple, rose, crimson, and pure white flowers, partly against the blue sky and partly against congenial greenery.

In common with lilies, foxgloves associate well with rhododendrons; and although in a mixed border the third or fourth row is the proper place for them, they appear to

be well placed no matter where they are, and therefore, when self-sown plants occur where they seem intrusive, it is well to leave them undisturbed if possible, for the chances are all in favour of a surprising success in the end. In any and every case a good clump is better than a few single plants, and it matters not how the sorts are mixed; in fact, the more mixing the better.

To raise a stock of plants, the seed should be sown in April or May in pans or boxes, and the young plants should have a little nursing in a frame, and be put out when large enough where they are to remain for flowering. A sowing of seed should be made every year, for although many of the plants will flower a second, and even a third time, a considerable proportion will die off after once flowering. To promote the perennial character, the seed-pods should be assiduously removed as the flowers wither, and from the finest only should seed be taken for keeping up the stock.

A yellow foxglove is sometimes inquired after. There is no such thing. But there are yellow species of *Digitalis*, such as *D. grandiflora* and *D. lutea*, although they are not of any special value as garden plants.

GRACEFUL DEUTZIA

GRACEFUL DEUTZIA.

Deutzia gracilis.

DEUTZIA GRACILIS ranks with *Spiræa japonica* as a familiar plant of the most useful character, and one which is grown in immense quantities for the supply of the flower markets. The cultivators who supply the markets in this country usually obtain supplies of both these plants from Holland, where they are grown for this particular purpose in the open ground, mostly in the alleys and trenches between the beds of hyacinths and tulips. They are thus in the nature of what gardeners call "stolen crops"—that is, they are run in between other things, and occupy places where a severe routine would forbid the planting of anything whatever. But all the important business pertaining to the beds of bulbs is over by the time the deutzias and spiræas are planted; and by an accommo-

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

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

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

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

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

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

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

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

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

EVERLASTING FLOWER.

[illegible] You say [illegible]
[illegible] that if the [illegible]

THE EVERLASTING FLOWER.

Helichrysum monstrosum.

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

A dry, sunny summer is requisite to the production of a good head of flowers, and this the cultivator must obtain by management. You say that is impossible. Well, it must be granted that if the summer is sunless and rainy your

EVERLASTING FLOWER.

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

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

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

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

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

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

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

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

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

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

MAGNOLIA.

MAGNOLIA.

Magnolia Soulangeana.

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

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

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

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

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

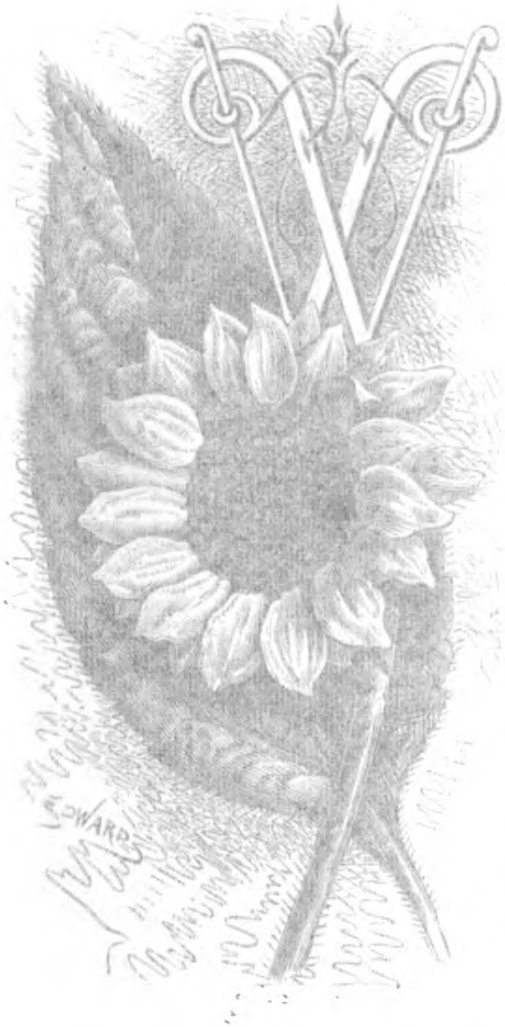
The grandest of the species is probably the Indian *Magnolia Campbelli*, which, unfortunately, is not hardy enough for this country. In many places it has been planted, and has passed through severe winters with but little harm; but it manifests its unhappiness by refusing to flower.

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

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

SUNFLOWER

SUNFLOWER



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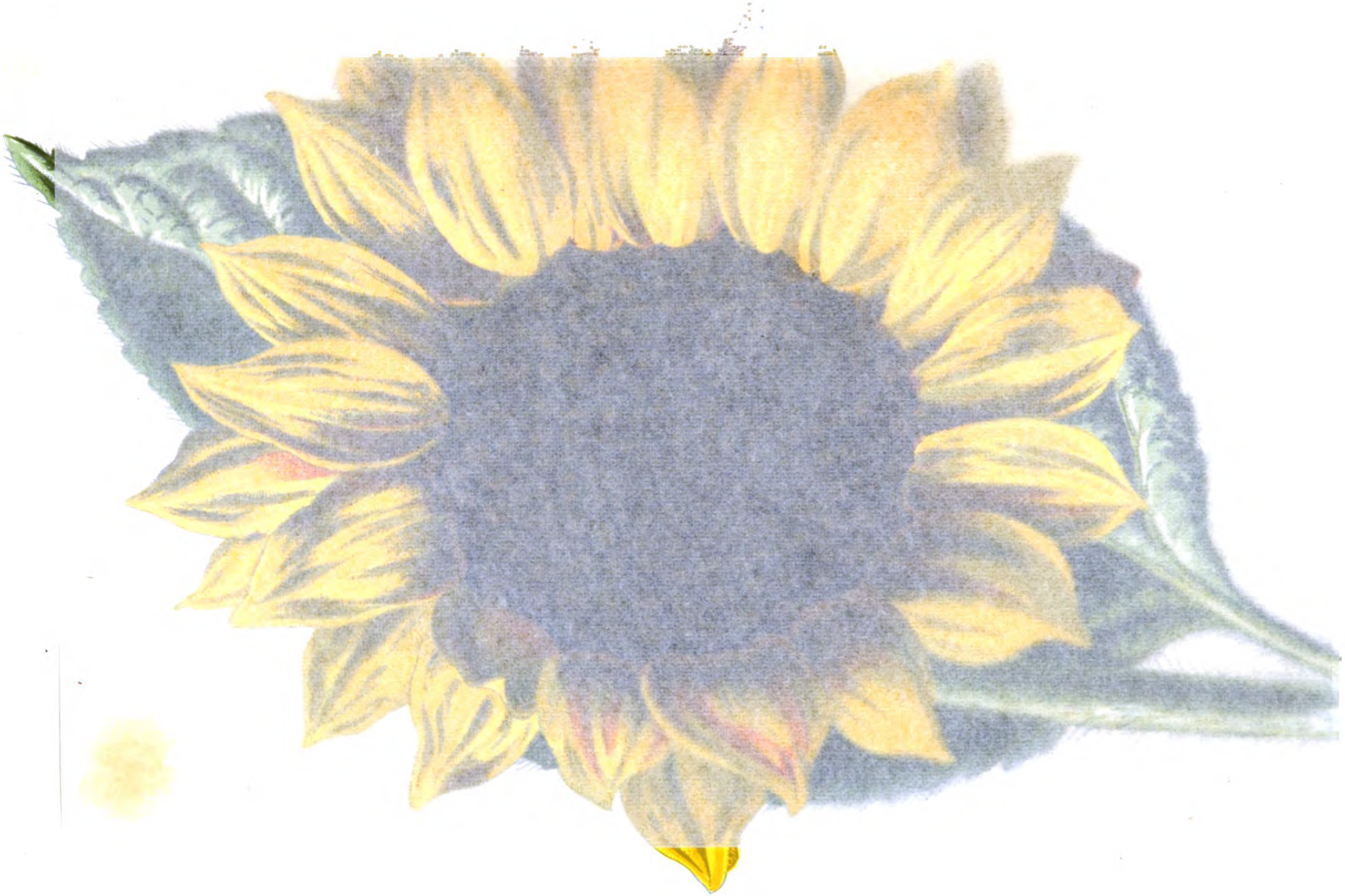
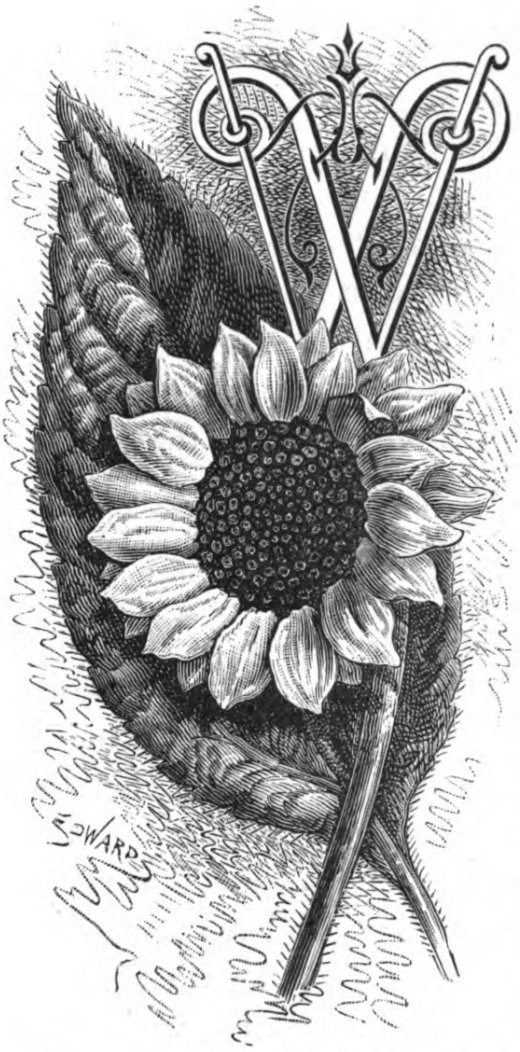
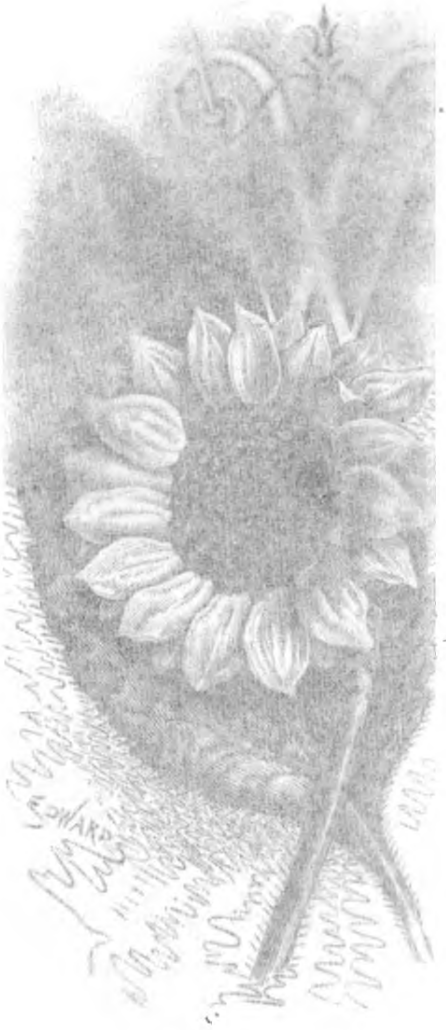


SUNFLOWER.

Helianthus annuus.



WHEN the world has enjoyed its laugh at the expense of the lovers of sunflowers, it may find a useful substitute for frothy excitement in "discovering" the magnificence of this very familiar flower. As seen in the average garden, its fine character is not often apparent, for it is usually badly grown, and the grave mistake is made of planting it in groups, whereas single plants should stand alone amidst green surroundings, and should be so liberally cultivated as to acquire gigantic proportions. The several stages of development of the flowers may constitute a series of profitable studies in plant form, and there is one stage, when the seeds in the disc are fully formed, but are as yet quite green and "milky," that may properly command the rapturous admiration of


EDWARD

a large-minded artist. These remarks apply more especially to the common annual sunflower (*Helianthus annuus*), but it may properly be added that all the sunflowers are noble plants, and if not adapted for a front place in a highly-dressed promenade, there is a place for them, which, when found, they will readily fill, for they are accommodating plants, and the perennial kinds are among the most useful of gay garniture for a large London garden. As for the annual kinds, it is only in a country garden and on a deep strong soil that they attain to proper magnificence.

Our grand beauty, the annual sunflower, is a native of Mexico and Peru, and its outline may often be traced in the sculptures of the ancient temples that date from the time of the Aztecs, and constitute the most important of the archæological treasures of the western continent. In the description of the marigold we have touched upon the fancy that this flower takes its name from following the sun in its course, so tastefully expressed by Moore—

> "As the sunflower turns to her god when he sets
> The same look which she turned when he rose;"

and it has been shown that the fancy has no foundation in fact. One glance at a garden of sunflowers will demonstrate this, for they will be found facing every way indiscriminately, evidently wanting in the adoring affection for glorious Apollo they have obtained credit for from the poets. "A garden of sunflowers" the reader will perhaps repeat, as in doubt of such a thing, but we have seen sunflowers in pieces of an acre in extent, and without any sense of satiety, so interesting is it to note the variety of character displayed in the several stages of development.

Of sunflower poetry there is no lack, while many flowers that rank much higher in the estimation of the world are

absolutely without honour in verse. Clare pictures the cottager selecting for the garden the rose, the woodbine, the daisy, and in due time

> "Training the trailing peas in bunches neat,
> Perfuming evening with a luscious sweet,—
> And sunflowers planted for their gilded show,
> That scale the lattice windows ere they blow,
> Then sweet to habitants within the sheds,
> Peep through the diamond panes their gilded heads."

Sunflowers are grown in America for the oil that may be compressed from their seeds. This the English housewife may obtain indirectly by the very simple plan of growing sunflowers for the poultry-yard, for the oily albumen of the seeds is very acceptable to poultry. The best way to supply the birds with the seeds is to hang up the ripe heads just high enough to compel the chicks to pick them out, for when the heads are thrown into the yard they are trodden on and wasted.

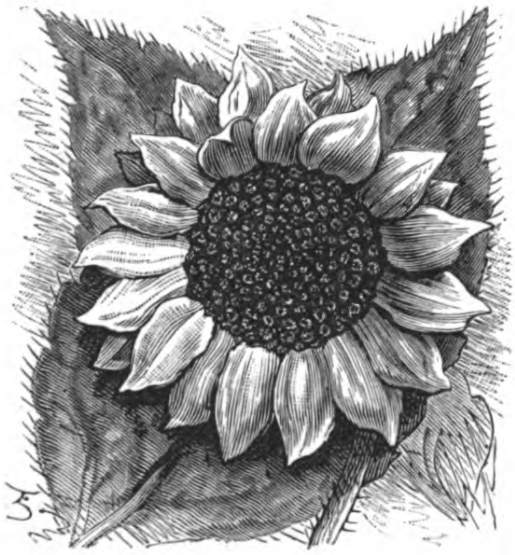
The cottager's way of growing sunflowers is to sow the seed in April in the open ground. The proper way for a gardener is to sow the seed in March in pots or pans, and start the growth in a gentle heat. Any light rich soil will suit for the purpose. When the plants have made two rough leaves they should be pricked out into other pans and allowed room to spread, and kept near the glass, with plenty of air, so as to be strong and stout—no matter how short—for planting out early in May. They must for a time be protected from frost, keen winds, and snails. If the soil is rich and deep, and the plants are allowed plenty of room, they will attain to far greater dimensions than are commonly seen, and make a truly grand display.

Amongst the best of the annual sunflowers are those named *Globosus, Californicus, Uniflorus, Cucumerifolius,*

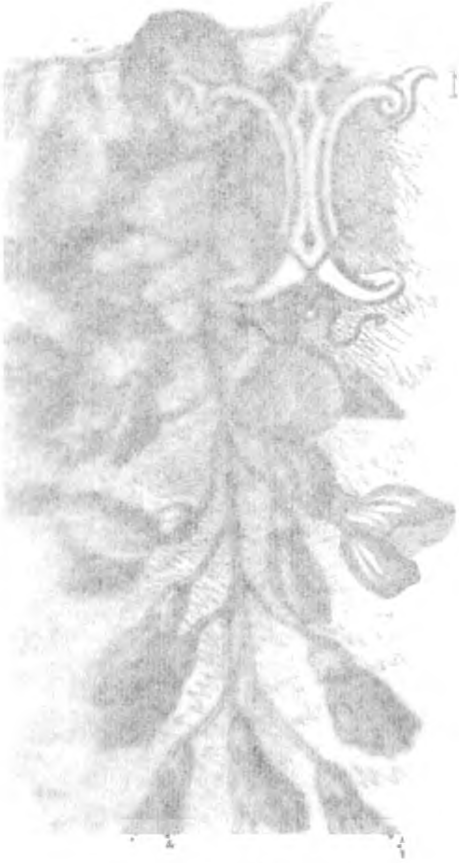
and *Plenissimus.* The second in the list is known as the "double" sunflower, the flower consisting of ligulate florets entirely; the colour is a rich full orange. A beautiful plant for the spacious border is *Helianthus argophyllus,* with silvery leaves, and a dwarf sunflower, known as *H. nanus,* may go with it as a pleasing manageable plant. All these are best raised from seeds in the manner described above.

The best of the perennial sunflowers are *H. multiflorus,* single and double, *H. giganteus, H. divaricatus,* and *H. decapetalis.* Where only one sort is wanted, the first should be preferred. The perennial kinds are propagated by division.

A splendid companion of the sunflowers, and a first-rate shrubbery plant, is *Harpalium rigidum,* which may be described as intermediate between a helianthus and a rudbeckia. The flowers have ray florets of a full orange yellow, and a bold disc of black or blackish-brown.



WISTARIA.



WISTARIA.

WISTARIA.

Glycine Sinensis.

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

This glorious, hardy climber was brought from China by Captain Welbank, in the year 1816, and was first grown and flowered in the garden of Charles Hampden Turner, Esq., Rook's-nest Park, near Godstone, in Surrey, and it was through Alexander McLevy, Esq., that Dr. Sims obtained a spray of the flowers for his drawing. The story of the first attempt in growing the plant is paralleled by many instances. It was first kept in the peach-house, in a temperature of 84°, where it was very soon all but

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

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

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

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

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

commonly grown in China. In some places the Chinese glycine, or wistaria, is allowed to run up the tallest trees, and festoon their summits with its annual plenitude of garlands of blue flowers. And when the flowers are past, the leafage of the wistaria is so distinct and beautiful, that the trees supporting it are doubly adorned, for their own leaves have some beauty, and they know it, as we see by the way they thrust them out in masses to contrast with the leafage of the scrambling butterfly they generously support.

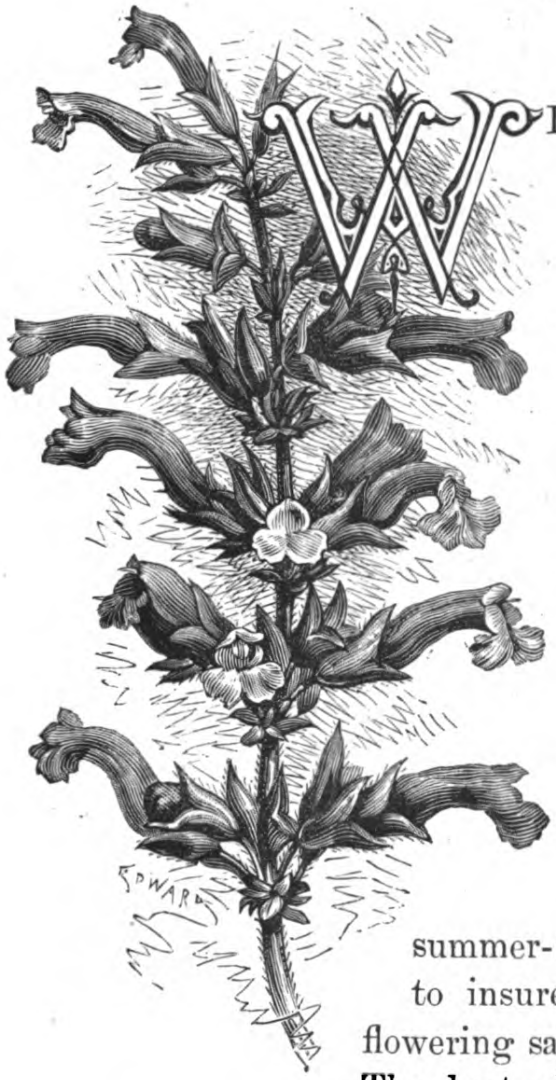
The white wistaria is so lovely that one is sometimes almost tempted to yield to the thought that our old friend is outshone by the newer beauty which was introduced about the year 1846, and is therefore as yet in the nature of a little stranger. On seeing a very fine specimen it has seemed to us that nothing in this world could surpass in loveliness the broad sheet of snow-white flowers, delicately relieved as they were with a little undertone of green, the whole display being favoured with a background of clear blue sky.

SALVIA.

summer-
to insur-

SALVIA, OR BOLIVIAN SAGE.

Salvia Boliviana.



WITHIN the last half-dozen years several new species and varieties of salvia have been introduced to our gardens, very much to the advantage of the winter colouring of the greenhouse and conservatory. Our old friend *Salvia splendens* is not eclipsed or superseded by any of the new-comers, for that and *S. patens* (figured in Series II., p. 101) are still the two best plants of the sage family for the flower garden. When grown from summer-struck cuttings and potted on to insure strong plants, the scarlet-flowering sage is a loud summer beauty. The best place for a clump is in the sunniest part of the garden, the soil to be somewhat poor and stony, and if containing some proportion of old plaster or other calcareous rubbish, all the better. For a few isolated

plants a sunny border near a hot wall answers admirably, as the heat reflected from the wall, together with the dryness of the soil, will favour the abundant flowering for which the plant is famous when growing to its own liking.

When raised from spring-struck cuttings, the scarlet sage will often make a free growth in the open ground, and show not a single flower to justify the little care it requires. In this case the possessor of the plant may still be as happy and hopeful as he that fights and runs away, for the triumph is but delayed, and may with proper courage be still commanded. Some time in September the flowerless plants should be carefully lifted so as to keep as much earth about their roots as possible, and be put into smallish pots—smallish as compared with the size of the plants, but not so small as to necessitate any severe injury to the roots. The soil used in filling in to make them firm in the pots should be poor sandy stuff, the fresher the better, but there is no manure needed. The roots must be kept only moderately moist, and the tops should be moistened with a shower from the syringe twice a day; the home of the plants must be a shady place in a warm greenhouse. In the course of a few days after being potted, they will hold up their heads and look well, and may then be put in the full light, and have water regularly, but should never be very wet at the root. There must be no pruning of any kind; not even a leaf should be injured except by unavoidable accident. All this is very simple, but it is none the less important. In the course of November the flowers will appear, and if the house is kept warm and the plants are near the glass, there will be a beautiful display for fully two months: say until the turn of the year, and then some other species of salvia may be at command.

For the early spring-time, or more especially for the month of February, there is no grander conservatory plant at command than the Bolivian sage here figured, the book name of which is *Salvia Boliviana*. It is a native of Bolivia, introduced to Europe by Van Houtte, of Ghent. Although coming from a hot climate, it does not require stove cultivation, as it is a mountain plant, found on the Bolivian Andes at elevations of 10,000 to 12,000 feet, a robust-growing shrub, producing gorgeous panicles of flowers of the most brilliant crimson colour. It is probably the same as *Salvia rubescens*, or if not, the two are but slightly different forms of one and the same species. That is a matter of no great consequence in the present connection.

In the cultivation of this fine salvia a certain golden rule, often enforced by writers, and as often ignored by amateur cultivators, must be strictly observed. A thousand examples might be cited in illustration of the importance of this golden rule, which consists in the raising of a new stock of young plants every year. This rule is of special importance in the case of pansies, chrysanthemums, calceolarias, cinerarias, petunias, and salvias, for it rarely pays to keep old plants of any of them. In the month of March cuttings of salvias may be easily rooted on a mild hotbed or in a warm house, and it is good practice to strike a few in the course of the summer or autumn, more especially of such as it is intended to plant out the next year.

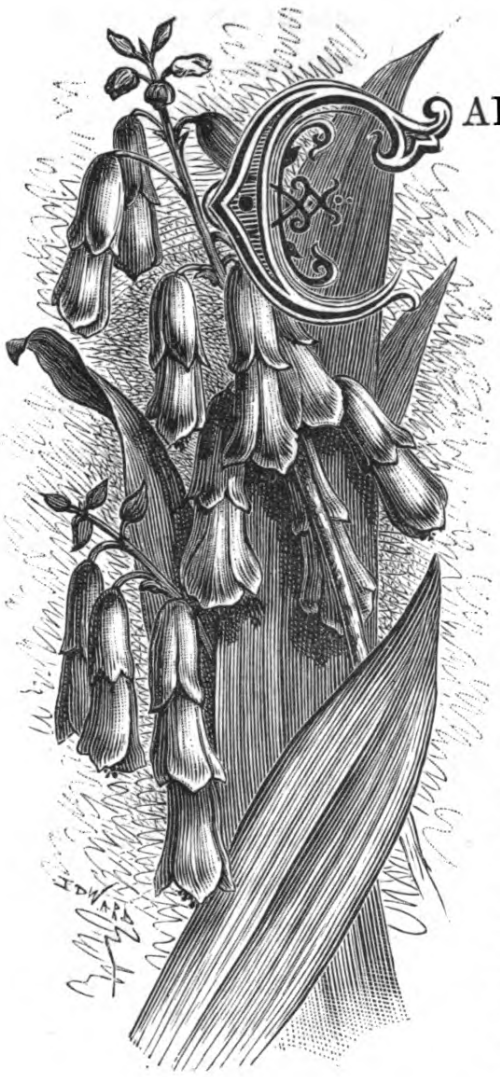
Pot culture from first to last suits this plant perfectly, and the compost may be somewhat rich for it, as it is of a free leafy habit, and produces large spikes of flowers when liberally nourished. The young plants must be shifted on as they fill their pots with roots, but care must be taken not to give them at any time an excess of pot room, and the last

shift should be in September, as any disturbance of the roots in the later months of the year will interfere injuriously with the flowering. For a general rule, nine-inch pots may be regarded as the largest allowable for plants well grown, and in these they may be allowed to flower. As the flower-spikes rise, weak liquid manure may be given to assist them, and the house must be warm enough to promote a fine development, say a temperature of 60°, rising to 70° with sunshine. In a cold damp house they will do no good at all. The finest examples we have seen of this plant were in the greenhouses in the Royal Gardens, Kew. They were truly wonderful, and had for companions plants, not less wonderful, of *Senecio Ghesbrechti*, with gigantic heads of orange-yellow flowers. In the same houses were epacris, cinerarias, heaths, cyclamens, acacias, and other of the usual occupants of a greenhouse, which are here named to show that our Bolivian sage does not need the heat of the stove even when flowering in February.

LACHENALIA.

LACHENALIA,
OR CAPE COWSLIP.

Lachenalia luteola.



CAPE COWSLIPS are children of the great family of lilies, or, to put the matter in less familiar terms, they are members of the hyacinth and scilla section of the order *Liliaceæ*. They are bulbous plants, of somewhat fleshy texture, making large, thick leaves, which are often handsomely spotted, and a head of flowers that are tubular, pendent, apparently furnished with a calyx. These resemble hyacinths sufficiently to justify the association in the minds of those who have not studied the details of structure that determine the classification. But even in the view of the unlearned a lachenalia is somewhat of a curiosity, and the question may properly arise, What is the meaning of the apparent calyx? for a lily and the relation of a lily should have no such thing. The

LACHENALIA.

answer may prove of some interest to the reader. A lily, and every relation of a lily, should have a flower of six parts, which may be divided to the base, or only cleft into six lobes. Now, in many instances three of these are so placed as to be within or without the other three. In the flower of any true lily it may be seen without the aid of a botanist that the divisions of the flower are in two sets of three each; they are usually of equal length, but one set of three is distinctly placed within, and the other set without the general compass of the flower. We may speak of the outer divisions as forming the calyx, and the inner as forming the corolla. But we do not use such terms; the flower of a lily is called the perianth, and the six divisions are only distinguished as inner and outer segments.

The Cape cowslips were introduced from the Cape of Good Hope about the year 1774. The well-known *Lachenalia tricolor* was the first of the throng, and in the opinion of the present writer is the best even now. It was figured in the *Botanical Magazine* in the year 1790 (t. 82).

It is interesting to trace the history of the nomenclature of the flower. Jacquin described it as *Lachenalia*, in honour of Warnerus de *la Chenal*, a Swiss botanist, and the name remains to this day. But Linnæus described it as *Phormium aloides*, and it has also been named *Hyacinthus orchioides*. The generic term *Phormium* is now applied to the great New Zealand flax, and there is no more occasion for a change.

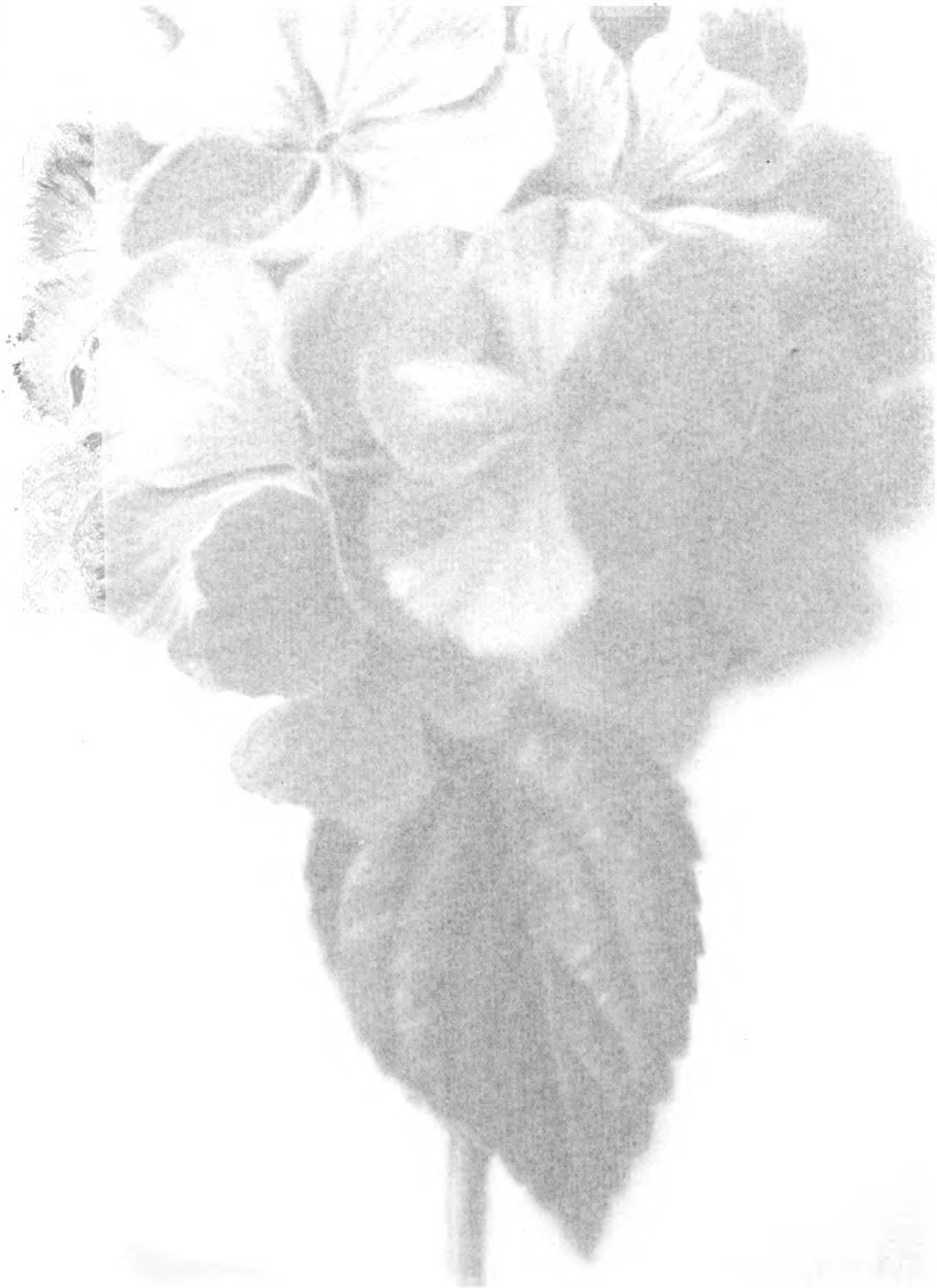
The beautiful flower before us is a variety of *Lachenalia tricolor;* of that there can be no doubt whatever. It was introduced at the same time as *tricolor*, and for a time was regarded as a separate species. It differs from the other both in form and colour, the longest seg-

ments of the perianth being broader and more expanded, and the shorter segments being more acutely cut. In *tricolor* we have a lovely blending of fiery red, orange, and green, with gleams of creamy white; in *luteola* we have a self-colouring, or say uniform colouring, of yellow buff or tawny orange, the short segments having small green spots on their points or apices.

The cultivation of lachenalias may be stated in a few words. They are strictly greenhouse plants, and it is therefore improper to plant them in the open ground. They are grown in pots, those of smallish size being preferable—say five to seven inches diameter. If grown in large pans for any particular purpose, the vessels should be shallow—say five to seven inches deep at the utmost. It is not necessary to put much drainage material in the pots—one good hollow crock, say a neat little convex oyster-shell, placed hollow side downwards, answering admirably to afford escape for superfluous water. The soil should be sandy loam and leaf-mould; it matters not about the exact proportions, provided the loam predominates. In place of leaf-mould very rotten and quite clean soil from an old melon or cucumber-bed may be used; but a rich, heavy soil is not suitable. Put the bulbs rather close together in the pots—say a dozen in a six-inch pot—and cover them with just enough fine soil to hide them. Being potted in the summer or autumn, they should be kept in a frame and have but little water, until the leaves appear and indicate that they would like to grow. Now an important point in the cultivation consists in placing them in pans of water from the time the leaves have attained the length of two inches or so, and certainly not before. If the water is only a tenth of an inch deep it will suffice; but if an inch

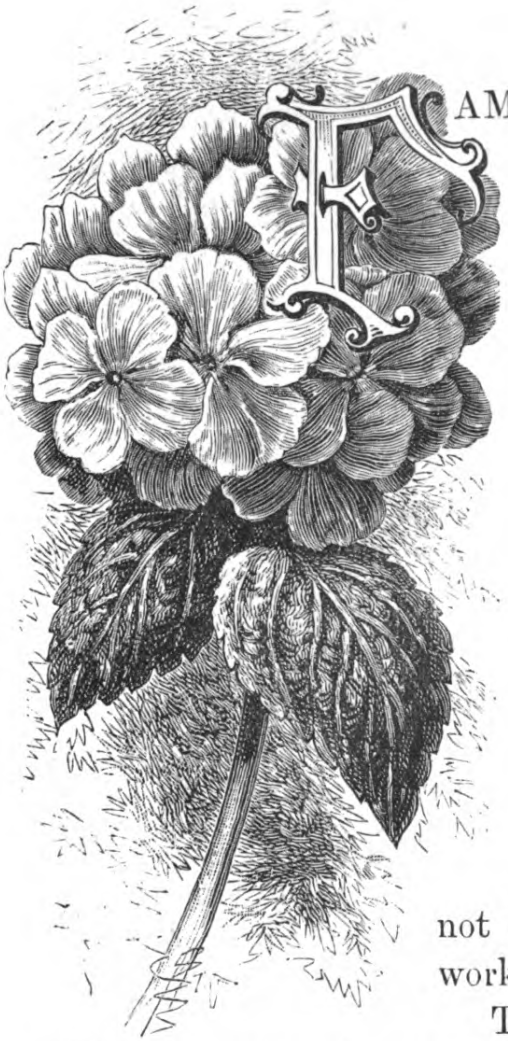
deep in the morning it will be all gone by the next morning, and another inch may be supplied. The object is to keep the roots in full activity, and yet to avoid treating the plants as aquatics, for to be deeply immersed would be deadly to them. The result of this treatment will be a growth of large, thick, glossy, richly-coloured leaves, and a show of flowers far finer every way than can be obtained by the system of cultivation that commonly prevails. We have always so treated our exhibition lachenalias, and have never withheld from such as desired the information a disclosure of the secret of success. As regards temperature, that of an ordinary greenhouse is all-sufficient. These plants will endure without serious harm a temperature as low as 35°, and one as high as 90°. But such extremes are to be avoided, and the proper temperature for them is 45° to 60°, with as much air as weather will permit, and full exposure to the light.

HYDRANGEA.



HYDRANGEA.

Hydrangea hortensis.



FAMILIARITY is said to breed contempt, but that is scarcely true. It is, however, certainly true that familiarity breeds indifference, and the subject before us affords an illustration. There is no truly familiar garden flower more thoroughly appreciated than the hydrangea, and there is not one that is so commonly mismanaged by amateur cultivators. To grow it well is like conjuring—most easy and simple when you know how to do it, but a great difficulty when ignorance, that is not bliss, lies in the way of the worker.

The hydrangeas are hardy shrubs, although commonly regarded as proper to the greenhouse. They are, indeed, "proper" to the greenhouse, and the common *H. hortensis* now before us is a great favourite for the window, thousands of plants being raised by the market

HYDRANGEA.

growers every year for sale for that purpose. But the statement should be repeated that all the hydrangeas are hardy in what may be called the most favourable districts in the British Isles, say in England everywhere south of the Trent, and along the whole western sea-board from the Land's End to the shores of Loch Fyne. Ireland, from Kerry across diagonally to Down, will generally be found to suit the hydrangea; and of the Channel Islands there need be nothing said, because hydrangeas, escallonias, myrtles, and shrubby veronicas love a humid atmosphere and an equable temperature, the extreme of which, downward, does not often touch the freezing-point.

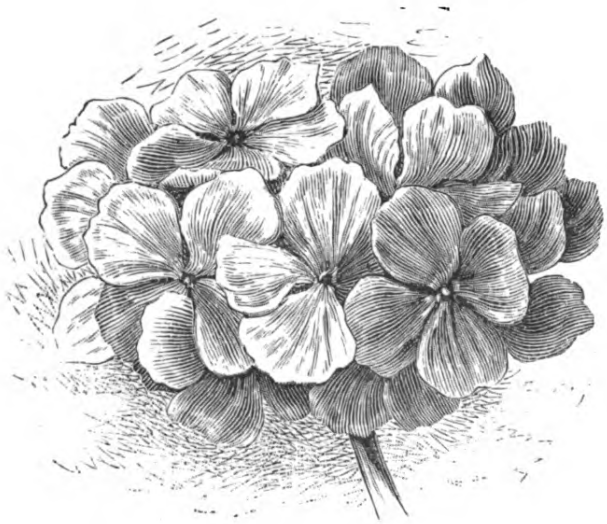
Now some one will say that generalities are insufficient. Very well. If you will inquire in the village of Stoke Newington, where the climate is very stiff for a northern suburb of London, and the soil is a stiff damp clay, you may hear of a plant of *Hydrangea hortensis* that has stood in an open front garden for some fifteen years, and every summer produces hundreds of immense heads of flowers, spreading over a space that may be roughly described as about as large as an average breakfast-parlour. It is but a short time since we saw in Broadwater, near Worthing, a gigantic plant of *Hydrangea japonica,* which is a peculiar plant in showing a mixture of perfect and imperfect flowers, but always a beauty, and commonly regarded as more tender than *H. hortensis.* The plant was taller than a man, and broader than any man could measure by the outstretch of his arms, but the people there thought it nothing remarkable, and suggested that many more such might be found. To close this paragraph it will be well to say that the hydrangea accommo-

dates its ways to places that are too cold for it, in just the same way as the fuchsia.

There is a grand hardy plant known as *Hydrangea paniculata,* which is of somewhat wiry growth, and produces huge conical heads of flowers, that are sometimes pure white, but more often tinged with pink or purple. This is somewhat of a novelty, but for all that a cheap thing, everywhere obtainable, and so accommodating that almost any soil will suit it. But this brings us to the subject of soil for hydrangeas generally, and the first thing to be said is that, in common with a large proportion of thirsty plants, they prefer a fat soil : that is to say, a fertile loam, and a considerable proportion of fat manure may be dug in when a plot is prepared expressly for them. Planting should be done in spring; hydrangeas are not hardy enough to be planted in autumn, but if planted in May, and sheltered for a time, they will make a good root-hold, and establish themselves firmly for the winter, and become hardy occupants of the garden for any number of years. From the middle of June to the middle of August they may have any amount of water, with alternations of weak liquid manure. Indeed, in a porous soil the use of weak liquid manure may be continuous, but the operator should keep in mind that manure in excess of what a plant can absorb becomes to it as poison. The word "assimilation" is the key to the problem.

The greenhouse culture of the hydrangea is very simple. The best time to strike cuttings is in the summer, when the shoots of the season will be found to strike readily with or without the aid of bottom heat. The amateur who loves to produce flowers in plenty, and is not concerned about rarities, may be advised to make a special pet of the hydrangea, and

one way of so doing will be to raise a stock of young plants every year, and, as they flower, keep the tables and windows and conservatory gay with them. Yearling plants with one or two great heads of rosy pink flowers on them delight all who see them, for even the crusty botanists have to admit that they are "buxom," if not delicately beautiful. As for larger plants, to make them well consists in simply giving them larger and larger pots as required, the soil always to be rich and light, and made of any handy materials that answer to the description. When the plants grow freely—and not before—the pots should be placed in pans of water an inch or so deep, to enable them to help themselves, for every moment that these thirsty plants lack moisture they go backward instead of going forward.



LILY OF THE VALLEY.

LILY OF THE VALLEY

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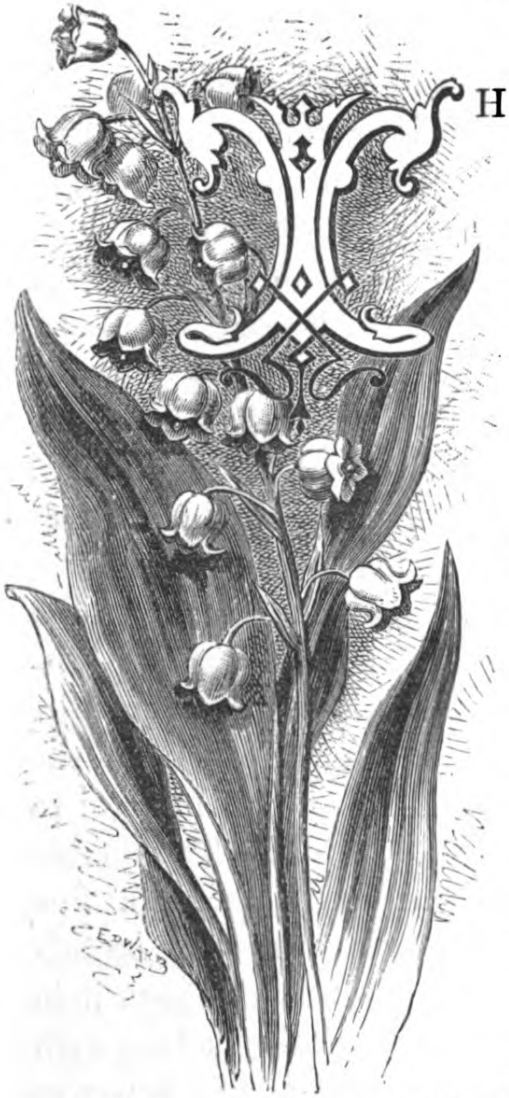
[illegible] but nothing about lilies in particular? Keats [illegible] this lily as an emblem of purity—

> "Valley lilies whiter yet
> Than the lady's love,"

which is very well in its way, but the allusions to the

LILY OF THE VALLEY.

Convallaria majalis.



THIS lily is a flower of the poets, and its occurrence in our series reminds us of the fact that although the poets have much to say of lilies in general, they have very little to say of lilies in particular. The lily of the valley is a happy exception, for the poets condescend to notice it by name, whereas of the Turk's-cap, the martagon, the pomponium, the ever-welcome common white, and the more than ever-welcome gold-striped lily of Japan, the poets do not say much, and appear as though they would prefer to say nothing at all. What ails them that they can say words enough to clothe a mountain about lilies in general, but nothing about lilies in particular? Keats speaks of this lily as an emblem of purity—

> "Valley-lilies, whiter still
> Than Leda's love,"

which is very well in its way, but the allusions to the

flower are few, and even then not always in the best of taste. Thomson rejoices in the seclusion—

> "Where, scatter'd wild, the lily of the vale
> Her balmy essence breathes,"

which is commonplace enough; and Prior associates this humble flower with the glories of King Solomon, when he ought to have known that the scarlet martagon lily is the only one that can claim to be the "lily of the field."

The plentifulness of the lily of the valley as a British wilding is not known to the average of holiday botanists, because they do not travel much in the season when it flowers. It is most abundant in woods and glens, from far north to far south, and is mostly a haunter of moist, mild, and shaded places in the western parts of Britain, but is scarcely known as a wilding in Ireland.

As a garden plant it is nowhere seen to such advantage as in half-wild places, where anemones and violets and primroses are scattered without order in a miscellaneous mosaic. Then there are uses for the four or five varieties, and the effect of these in irregular masses is far too delightful to admit of being set down in black and white. The double variety is a little "lumpy," perhaps, but makes a fine button-hole flower. The rosy variety is exquisitely beautiful, but no one knows of its beauty who has not seen it in considerable masses, running hither and thither, mixed with the white. The striped-leaved variety does not flower so freely as the green, but makes amends by its foliage.

The common lily of the valley may be planted anywhere and everywhere with some prospect of a successful result. But the best place for it is in a somewhat damp soil, in a position partially shaded, and being planted, the

best way to manage it is to keep it clear of weeds or over-reaching plants, and otherwise leave it alone.

The variegated-leaved lily of the valley is never, or but rarely, seen to advantage in the open ground. To do justice to its exquisite beauty, it should have greenhouse or frame culture. Any light soil will suit its requirements, or say sandy loam and clean leaf-mould, or any mixture that suits the average of greenhouse plants. It is an important matter to plant a number of crowns in suitable pots and pans, and leave them undisturbed for several years. If they have reasonable attention in respect of air, water, and light, being shaded from strong sunshine, and liberally supplied with water in the growing season, they will fill the pans with a lovely growth of leaves, richly striped with alternate bars of pale yellow and vivid green, and the flower-spikes will rise in plenty.

For the supply of winter and early spring flowers the lily of the valley is largely grown; there are varieties known as "Dutch," "German," and "home grown." These differ by points an amateur need not be concerned about, because all are good; but the men who grow them in large quantities for the flower markets are bound to distinguish minute differences, for they influence values, and tell with effect upon the final returns of the season's business. For the mere production of crowns for forcing there is really no necessity to resort to importation, but as the imported lilies are constantly in request, it may be concluded the market growers find it more to their advantage to obtain the crowns ready made than to be at the trouble of producing them. The reader of this may, however, be well supplied with stock for the forcing pit by dividing and planting a sufficient number every year, and a generous soil

should be selected for the business as large well-ripened crowns are required.

Hardy plants that are adapted for forcing are numerous and cheap, and of great importance to those who value early flowers. But there is not one amongst the many that is more valued by those who appreciate such things than the common lily of the valley. To force it is easy enough; for in truth, if but one golden rule be observed, it matters little by what means, whether on a tan bed or a hot-water tank, or an old-fashioned flue, the plant is persuaded to produce its fragrant flowers. The one golden rule is to force slowly in a temperature of 50 to 60 degrees, and not beyond that range. A skilful market grower will force these lilies in a temperature of 70 to 90 degrees, and do well, but the amateur who grows flowers for his own delight should not resort to such extreme measures.

HYACINTH.

Hyacinthus orientalis.

CHIEF amongst a thousand is the princely hyacinth, one of the best of domestic flowers, one of the most surprising exhibition flowers, and a very important item in the industry and commerce of our near relations and neighbours, the people of the Netherlands. To many a purchaser of hyacinth bulbs the question will occur, Why cannot they be produced at home? And, again, a still more serious question, Why is it necessary to purchase every year in order to obtain flowers of the finest quality? Those who have seen the steps and stages of the cultivation on a proper hyacinth farm at Haarlem are fully satisfied as regards those important questions. The soil is of a somewhat peaty character, and may be described as a dark-coloured sand containing much humus. It rests

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

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

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

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

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

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

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

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

CYTISUS

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Its [illegible] is so hardy at Kew, [illegible] specimens, ought to ten[illegible] may be found by the p[illegible] Royal Gardens.

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

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CYTISUS,
OR LEAFY BROOM.

Cytisus racemosus.

EVERY one knows this old greenhouse favourite. We have described it as the "leafy broom," because some of the brooms are without leaves. True Genistas should have spines; true Spartiums, rush-like, leafless stems; and true Cytisus should have leaves and no spines. There is no more useful plant in cultivation than this for decorative purposes. It is so nearly hardy, that on a dry sandy soil it can bear an average winter even near London. Its near relative, *Cytisus alata*, is so hardy at Kew, that many specimens, eight to ten feet high, may be found by the pagoda in the Royal Gardens.

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

CYTISUS

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

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

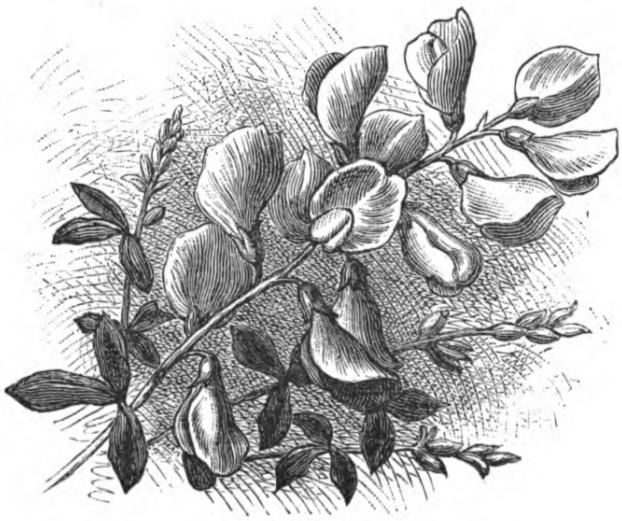
The simplest mode of propagating is by seeds, which the plant produces in plenty. When ripe, they should be sown in pans filled with sandy loam, and kept in a shady spot until the plants appear, a very little moisture being sufficient to persuade them to germinate. When the little plants are tall enough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

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

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

In the description of the laburnum, at page 65 of the

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



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GUELDER ROSE.

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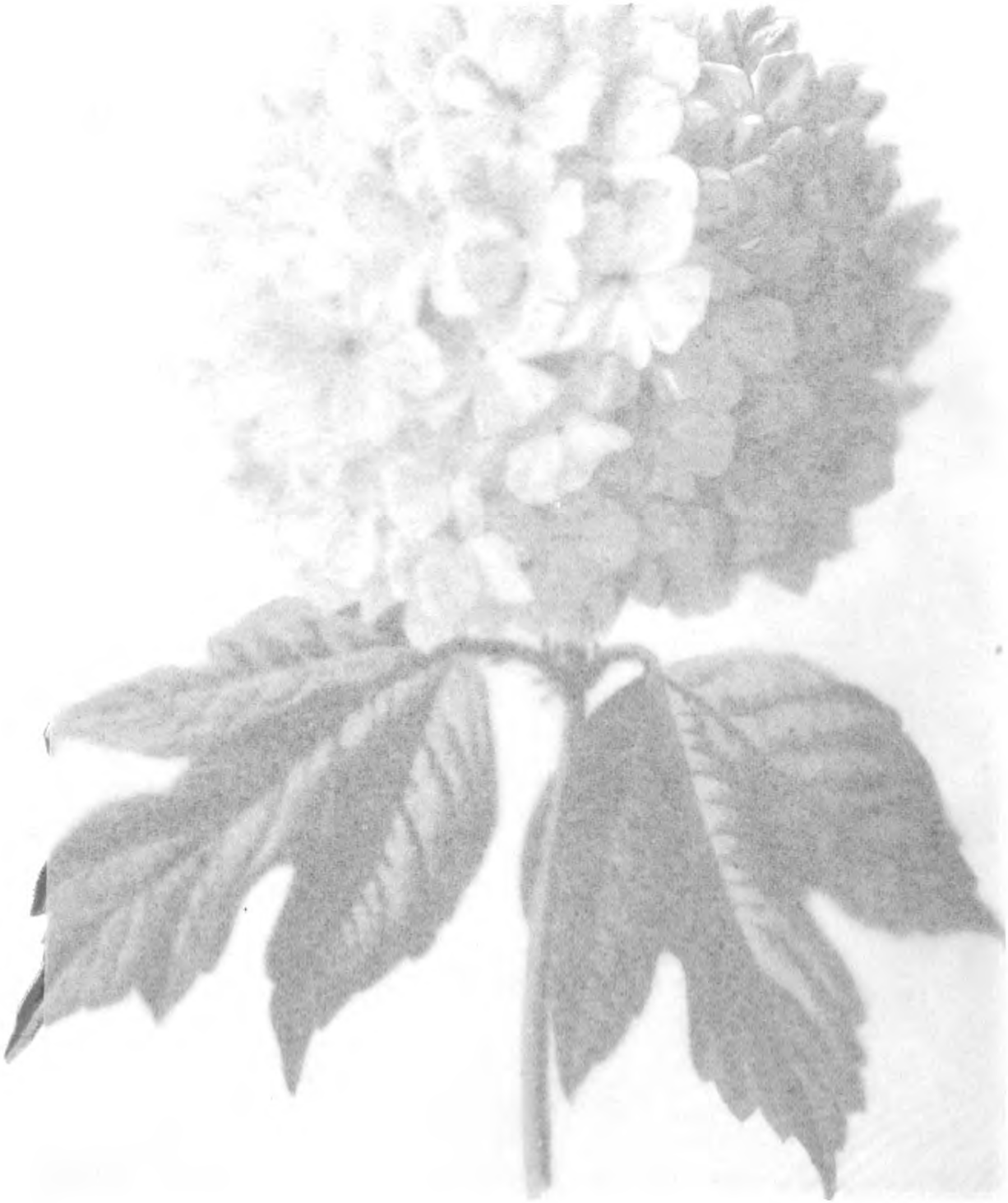


GUELDER ROSE.

Viburnum opulus.

GUELDER ROSES are plentiful in Guelderland, which lies due east of Amsterdam, and extends from the Zuider Zee along the course of the Rhine to the junction of the Lippe. In the woods and gardens about Arnheim the trees are conspicuous in early summer by reason of their abundant "snowball" clusters of flowers; and in autumn the leaves and berries combine to augment the glow of colour that warns us of the coming winter, when the birds will consume the berries and the leaves will fall to the ground. In this country the Guelder rose is also a wilding, but rather scarce, whereas its near relation, the wayfaring tree (*Viburnum lantana*), is quite common, more especially in Kent and Essex. It is often

a fine decoration to the hedgerows when bearing an abundant crop of variously-coloured berries—some glowing scarlet, others as black as jet.

The common Guelder rose (*Viburnum opulus*) or snowball tree, that is so familiar in our gardens, does not differ from the wild tree of the same name in any essential particular. It is, however, much handsomer, as the result of long cultivation, and probably the improved forms were introduced to our gardens from the district of Holland its familiar name commemorates. Gerarde describes it as known to the Dutch as "Gheldersche Roose," but he says nothing of the origin of the garden variety; and Dodoens, who describes it as "Marris (or marsh) Elder, Ople, or Dwarffe Plane Tree," throws no light upon the subject. It is of little consequence; but as names are often, like caskets, filled with information for such as can unlock them, we shall assume that in the case before us we have direct suggestion of the indebtedness of our gardens to the horticulture of the Low Countries.

The snowball tree makes a growth in many respects like the common hedge maple, and the leaves are similarly lobed. In the early summer the leafage is of a brilliant light green colour; and in May and June, when the flowers appear, often in prodigal profusion, the round white clusters show with striking effect, and serve as a beautiful link between the coming summer and the passing spring. Between the showy flowers of the garden tree and the less attractive flowers of the wild tree some differences are observable, and they are of the kind which may be seen in a peculiarly interesting manner in that beautiful hardy shrub, *Hydrangea Japonica*. In the centre of the clusters the flowers are small, and show stamens and pistils; but those

on the circumference are large and sterile. The garden tree agrees in these particulars, but affords a less interesting study, owing to the crowded state of the clusters.

In every garden the Guelder rose should have a place, and it is particularly well adapted for the mixed shrubbery, as it does not suffer much if a little crowded. For a sheltered spot, or as a dwarf tree for a wall, we have *Viburnum plicatum*, with beautifully-plaited leaves of a fine dark green colour and handsome heads of white flowers. This is good enough for pot culture in a cool conservatory, where the climate is too cold for its well-doing in the open ground. Another and quite grand plant is the great-headed Chinese snowball (*Viburnum macrocephalum*), which comes near to our *V. lantana* in foliage, but bears immense heads of snow-white flowers. This also is worthy of pot culture in gardens that are too cold for it. A large-leaved species from Japan, *V. macrophyllum*, is worth attention, but is of less importance than the two named above.

A favourite tree on southern and western coasts is the evergreen laurestinus (*Viburnum tinus*), a tree of neat habit and beautiful appearance that puts forth an abundance of white flowers during the winter, its season ranging from November to April, as the climate of the district or the weather of the winter may influence it. This beauty is so much valued that it is often grown to a great size in tubs, being annually pruned or clipped to keep it to a round or elliptic form, to serve the same purposes in garden decoration as the sweet bays and orange-trees, also grown in tubs. In many parts of the country the laurestinus is useless as a garden tree, but then it is still one of the best of subjects for pot culture in the cool conservatory, and associates usefully with berried aucubas, skimmias,

pyracanthas, and escallonias, all of which are easily managed as pot plants, and by some of the more spirited amateurs are grown in quantity to group with specimen chrysanthemums in November and December. In the northern suburbs of London the laurestinus scarcely prospers in the open ground; but in the western suburbs, and particularly along the valley of the Thames, it grows and flowers almost as freely as at Bournemouth. It is not many years since we saw by some houses at Strand-on-the-Green, near Kew, laurestinuses rising above the level of the roof.

The viburnums are partial to a strong soil, and the common snowball tree will thrive in places that are too damp for many of the better kinds of flowering trees.

ALMOND.


THE

ALMOND.

ALMOND.

Amygdalus communis.

THE almond is an emblem of haste, for its flowers appear before the leaves are ready. In the Book of the Prophet Jeremiah we read: "The word of the Lord came unto me, saying, Jeremiah, what seest thou? And I said, I see a rod of an almond tree. Then said the Lord unto me, Thou hast well seen: for I will hasten my word to perform it" (i. 11, 12). Allusions to the almond tree occur in other places in the Divine record. The presents sent by Israel to Joseph, in the second journey into Egypt, when Benjamin was taken, included "a little balm, and a little honey, spices, and myrrh, nuts, and almonds" (Gen. xliii. 11). The almond was one of the subjects selected for the decoration of the golden candlestick of beaten work that

was to be employed in the tabernacle (Ex. xxv. 33); and the symbol obtained special significance when the rod of Aaron, in the tabernacle of witness, brought forth buds, and bloomed blossoms, and yielded almonds (Num. xvii. 8). These passages testify to the importance of the tree in Palestine, of which it is a native; and they suggest an inheritance of ideas from the further East, for the almond has a considerable range in Arabia and Persia. To be valued for its fruit by nomads little given to cultivation was a matter of necessity. But we are taken into the region of true poetry when it is perceived that the acceptance of the almond as a symbol under Divine sanction turns upon its flowering first amongst all the trees of the wood, and in such haste that it cannot wait to appear in its proper garments. To the Oriental mind, sensitive to imagery, and leaning to the ideal in the observation of nature, such simple facts are pregnant with deeper meanings than Western thought is capable of grasping without an effort.

But in these less fanciful lands the almond does not escape such honours as poets can bestow. Spenser crowns the great Arthur with the bloom of the immortal tree by means of a splendid figure:—

> "Upon the top of all, his lofty crest—
> A bunch of hairs discolour'd diversly,
> With sprinkled pearl and gold full richly drest—
> Did shake, and seem'd to dance for jollity.
> Like to an almond-tree ymounted high
> On top of green Selinis all alone,
> With blossoms brave bedeckèd daintily,
> Whose tender locks do tremble every one
> At every little breath that under heaven is blown."

A good old Greek fable associates the tree with human sympathies in a more serious way than in the allegory

of the East. Servius tells that Phyllis was changed by the gods into an almond tree as an eternal compensation for her desertion by her lover, Demophoon, which caused her death by grief. But when it was all too late to claim his bride, Demophoon returned, and the tree, leafless, flowerless, and forlorn, was shown him as the memorial of Phyllis. He clasped the tree in his arms, and thereupon it shot forth a new growth, and flowered gloriously—an emblem of the true love that even death cannot extinguish.

The almond is one of the best of garden trees, for when its early and delightful flowers have given us gladness, its green leaves appear, and render it a most cheerful occupant of the shrubbery. In the southern counties it is no uncommon event for the tree to produce a fair crop of fruit; but in less favoured parts the production of fruit is a rare occurrence.

In a few gardens in France and Belgium the almond is grown for its fruit, in which case the tender-shelled varieties are preferred, and the cultivation is the same as for the peach. In this country we occasionally meet with the almond as a fruit tree grown in pots in the orchard or peach-house, in which case a variety known as "The Princess" has the preference, because of its dwarf habit and readiness to fruit when young. The fruit of the almond, as it falls from the tree, may be likened to ugly, ill-favoured peaches; it has a downy coat of a dingy green colour, with a tinge of sad red; and a thin layer of austere flesh covers the shell of the proper almond. The sorts are distinguished as sweet and bitter; but the climate has something to do with that part of the business.

For ordinary garden purposes the common almond, as grown in all good nurseries, is sufficient. For the culti-

vator of choice trees we have a double-flowered variety, called *flore pleno;* a variety with large rosy flowers, called *grandiflora rosea;* a variety with drooping or "weeping" branches, called *pendula;* and one with long leaves like a willow, which is appropriately named *salicifolia.*

There are some dwarf almonds in cultivation that are well adapted for the front lines of shrubbery borders, and also to grow in pots to force for winter flowers. The best of these are known or classed as cherries, but for present purposes they may be regarded as almonds. Their trade names are *Cerasus Japonica, C. Japonica multiplex, C. Japonica multiplex alba plena.*

LARKSPUR.

LARKSPUR

LARKSPURS [illegible] and [illegible] really [illegible] dating [illegible] perennial [illegible] species [illegible] [illegible] and [illegible] they comprise a [illegible] very [illegible] forms [illegible] known as [illegible] rocket [illegible] [illegible], hyacinth-flowered, stock-flowered, and ranunculus-flowered. These are all worth cultivating, but for general purposes the best are the branching, the hyacinth-flowered, and the rocket, which may be had in all colours except shades of yellow, of which the genus

LARKSPUR.

Delphinium formosum.

LARKSPURS may be divided into two classes, the annual and the perennial. The figure represents the finest garden plant of the family, and one of the most generally useful and accommodating of all known hardy perennials. The annual larkspurs are the cross-bred descendants of *Delphinium ajacis* and *D. consolida*, and they comprise a series of very distinct forms severally known as dwarf, rocket, branching, candelabrum, hyacinth - flowered, stock-flowered, and ranunculus-flowered. These are all worth cultivating, but for general purposes the best are the branching, the hyacinth-flowered, and the rocket, which may be had in all colours except shades of yellow, of which the genus

LARKSPUR

[illegible]
[illegible]
[illegible]
branches [illegible]
a red, and the rocket, which [illegible]
[illegible] except shades of yellow, or [illegible]

Delphinium gives no examples, unless we recognise *D. ochroleucum* as a yellow, which, properly speaking, it is not. The annual larkspurs are amongst the gayest flowers of their class, and the bright blue varieties are brilliantly beautiful. They are unfortunately of brief duration when sown in spring, and spring sowing of annual flowers prevails so generally that not many growers of such have seen the best sorts in the best condition. The larkspurs make finer spikes of flowers and last much longer when the seed is sown in autumn, and this practice provides the garden with their agreeable verdure through the winter, for the plants are quite hardy, and fine clumps often appear from self-sown seeds. The parent species are limestone plants, and the garden varieties thrive on dry calcareous soils.

Perennial larkspurs are raised from seeds and divisions; they are quite hardy, and will thrive in almost any soil or situation. In common with a majority of the plants that command attention in the garden, they make a finer growth in a good soil than in a bad one, but it is worthy of special note that a hot dry soil is well adapted for them, provided the aid of a little manure is afforded. When a collection has been secured, it will be good practice to lift, and if needful divide and re-plant every three years, the soil to be well dug over and liberally enriched with the clearings from an old hotbed. In any case of failure, winter damp may be suspected as the cause, for as limestone plants, a somewhat dry soil suits larkspurs far better than a heavy soil retentive of moisture.

The raising of plants from seed is a quite simple matter, but needs a little care, on account of the liability of the young plants to "damp off" if too freely or too frequently watered. The best time to sow the seed is in summer or

autumn, as soon as it is fully ripe, but spring sowing usually answers and is generally practised. Sowing on the open border is not good practice, but self-sown plants which appear on their own account may always be left to manage their own affairs until large enough to be worth transplanting. Sow in shallow pans or boxes, using for the purpose good sandy loam without any manure; sow with care, to distribute the seed evenly and thinly, and cover with a mere dusting of soil. Keep the seed-pans in a frame, and lay slates or squares of glass, or even newspapers, over them to prevent evaporation, for it is always good practice to get up seeds by the aid of the original moisture of the soil, without giving any water until the young plants have made a fair start. As soon as the plants appear the coverings must be removed and the frame must be cautiously ventilated, so that by the aid of light and air, without exposure to a roasting sunshine or a frosty east wind, they may grow stout rather than tall, for seedlings that are "drawn" through being kept too close, and lacking light and air, will be weak in proportion to their slenderness, and a very slight accident, such as a little too much water when the weather is cold, may kill them outright. As hardy plants, larkspurs need no coddling, but protection and encouragement may be afforded without detriment to their natural vigour. The after-management consists in planting out in other pans or on an open border of kindly soil, to make free growth preparatory to planting them out. Where the soil is naturally dry and calcareous, autumn is a good time for transferring them to their permanent stations, but where the soil is heavy, it is advisable to defer the planting until spring, provided the nursery bed to which they have been transferred from the frame is well drained and in some degree sheltered.

Division of the roots is best accomplished in the spring, especially in places where winter damp is a known enemy to plants. None but an expert should cut the roots into small pieces, for the smaller they are the more careful nursing will they need in the way of shading and watering.

Delphinium formosum, the most generally useful of all this family, was largely employed a few years ago as a bedding plant associated with scarlet pelargoniums. The two kinds of plants being put out in alternate rows, the flowering shoots of the delphinium were carefully bent down and fixed with pegs, and thus the flowers were produced nearly on a level with those of the pelargoniums, the result being a very gay blending of the most brilliant blue with the most fiery scarlet.

The garden varieties of delphinium number about one hundred. Amongst the best of the single varieties are *Formosum, Madame Hock, Barlowi, Lavender*, and *Belladonna*. Conspicuous for beauty amongst the double varieties are *Madame Geny, Roi Léopold, Hermann Stenger, Keteleeri*, and *Azureum plenum*.

YELLOW JASMINE.

ALTHOU

[illegible]

J. humile, [illegible]

[illegible] shrubs, [illegible]

low flowers.

In former notes [illegible] species of Jasminum [illegible] have spoken of the fragrant white jasmine, the favourite of the family, and the winter-flowering species from China that has of late years proved quite hardy near London,

YELLOW JASMINE.

Jasminum revolutum.

ALTHOUGH somewhat common, this is not an old plant, for it flowered for the first time in this country in the garden of the Right Hon. Charles Long, at Bromley, in Kent, in the year 1814. The flowers then produced served for the first figure of it published, forming No. 1,731 of the *Botanical Magazine,* issued in the year 1815. The tree is a native of Northern India, but in general characters comes near to the European *J. fruticans* and *J. humile,* which are useful border shrubs, producing yellow flowers.

In former notes on species of Jasminum we have spoken of the fragrant white jasmine, the favourite of the family, and the winter-flowering species from China that has of late years proved quite hardy near London,

though for some years it was grown in the greenhouse, as too tender for the open ground. This winter-flowering plant, *Jasminum nudiflorum*—so called because the flowers appear without any accompanying leaves—began to flower at Kew on the 1st of November, 1885, and continued flowering until the end of March, 1886. No one particular tree was in flower during the whole of these five months, but some trees flowered early, some at mid-winter, and some in the dawn of spring, the aspect and degree of shelter being the chief determining causes of the difference. The fact appears worthy of record, because frost and snow were not unknown in the winter when the facts were noted.

The yellow jasmine reminds us of the great wealth of our gardens in flowering trees and shrubs. When we say "our gardens," we are not unmindful of the poverty of many gardens, wherein the lilac and the laburnum divide between them all the honours that may be due to flowering trees. We have not a word of disparagement to say of either of these cheerful friends. They are hardy enough to manage their own affairs, and in return for the little space they occupy—occasioning absolutely no trouble at all—they make return in harvests of delightful flowers. But there are other good things at command for the lovers of gardens who will be liberal in planting. As companions to the jasmine we have several species of ornamental currants and gooseberries, such as *Ribes aureum*, with yellow flowers; *R. speciosum*, with crimson flowers, like miniature fuchsias; and *R. niveum*, with white flowers. At another turn we come upon the weigela or diervilla; and if only one of this fine group can be accommodated, it should be the old *Weigela rosea*, which makes a grand bouquet of rosy flowers, sweetly shaded with white and

crimson in the "merry month of May." It is not a violent transition to pass from this gay thing to the grander and more glorious *Pyrus japonica*—which it is the fashion now to class as a Cydonia—a tree that is worth having for its bright leafage, but is almost terrific in its splendour of crimson flowers when spring bursts upon us suddenly, and they all come out at once. But this good friend is everywhere so badly grown, being systematically crippled with the pruning-knife, that not many people know it in proper character. There is, however, one perfect specimen, in the garden of the Royal Horticultural Society at Chiswick. It is a mountain of green, lighted with a thousand crimson flames in the month of April; and one reason of its exceeding massiveness and splendour is that it is never pruned at all.

Mention of the laburnum should remind us that it belongs to the great family of papilionaceous plants, for in that family we find two magnificent garden trees, the rose acacia (*Robinia hispida*) and the Judas tree (*Cercis siliquastrum*). The first produces a profuse leafage, and large racemes of handsome purplish-rosy flowers. The second has peculiar roundish leaves, and in early summer it is quite richly dotted with small flowers of an intensely rich crimson or carmine-tinted rose colour. These flowers appear on the young wood and the old wood alike; and sometimes we see them on the rough stem of the tree, as though fixed there by some eccentric genius to deceive us. But it is Nature's doing; the eccentricities of man are as nothing to her infinite resources when in a whimsical humour.

Of syringas and spiræas we have discoursed; but the flowering shrubs and trees are so many that one does not

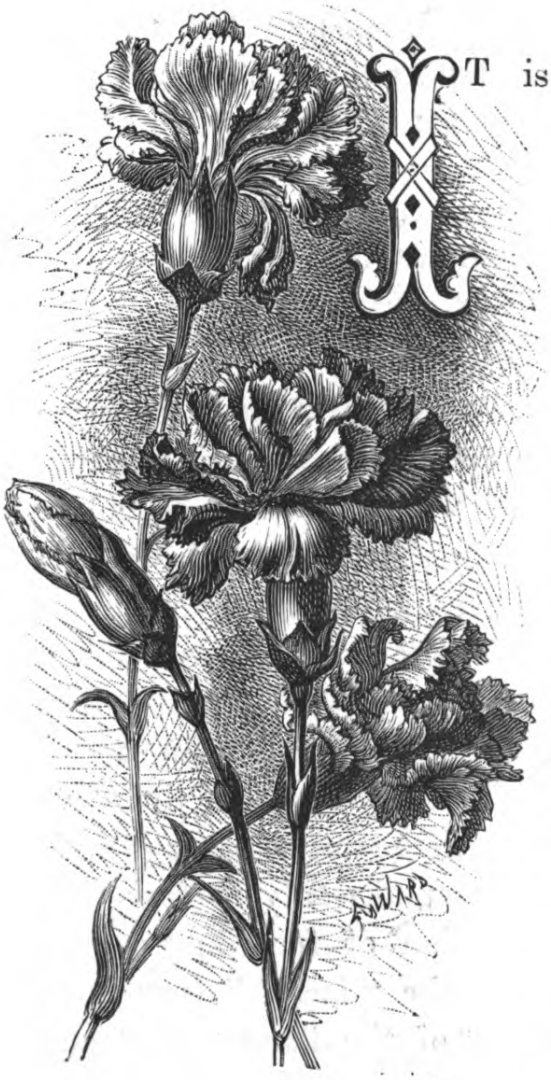
soon reach the end of them. We have, for example, a group of brambles of the most delightful character, if regarded only as ornamental plants. The trailing *Rubus arcticus* is a gem for the rockery; the upright-growing *Rubus odoratus* is a stout bush, producing large flowers, like single purple roses; the daisy-flowered bramble, *Rubus bellidiflorus*, covers itself in high summer with myriads of rosy daisies, for its flowers are just of the pattern of double daisies of the most delicate character. And again, there is a grand but somewhat quaint bramble, with stems perfectly white, as though it had with its terrible thorns lacerated a princess of fairyland, and had been whitewashed by the lawyers of the same province to redeem it from disgrace. It is appropriately named *Rubus leucodermis*.

BORDER PINKS.

plants, [illegible] pink [illegible] rocks, the wild clove [illegible] "castle pink" of poetry, the pheasant's-

BORDER PINKS.

Dianthus plumarius.



IT is an easy matter to write *Dianthus plumarius*, and then regard the name as a sign that we have traced the pink to its source. But here, as elsewhere, there is room for difference of opinion, because between the wild flower and the flower of the garden there is a great gulf fixed. It is convenient to regard *D. caryophyllus* as the origin of the carnation, and the species named above as the origin of the pink, but other species come near to both flowers, and in their garden forms the two sweet old favourites are very distinct. All the allied forms may be termed mural plants, for the Cheddar pink loves limestone rocks, the wild clove is the "castle pink" of poetry, the pheasant's-

eye pink (*D. plumarius*) has a special love for the walls of Ludlow Castle, and the Deptford pink (*D. armeria*) haunts dry chalky banks about Cobham, Higham, and Sandwich, and joins with all the rest in hinting to the lover of pinks that to grow such flowers well a dry calcareous soil is much to be desired.

We call pinks "old-fashioned" flowers, and perhaps we should find them more often mentioned in old than in modern books. Cowper, in his tender lines on his mother's picture, includes the pink amongst the favourites of his childhood :—

> "Could time, his flight reversed, restore the hours,
> When, playing with thy vesture's tissued flowers,
> The violet, the pink, and jessamine,
> I pricked them into paper with a pin."

In the "Paradisus" of John Parkinson we have evidence of the importance of these flowers in old English gardens, and it may interest readers of the dry-as-dust school to look upon a pink or carnation in the first place as a true gilly-flower, and next as the true clove that served for the payment of a reserve, or, at all events, as the emblem of acknowledgment in the constitution of a tenure. The authority for this is Turner's paper on the horticulture of the Middle Ages, and it dates from a time when the clove of commerce and the peppercorn were equally unknown.

Border pinks differ from show pinks only in flowering more freely, and with less perfection of form and colour, many of them being destitute of the "lacing" that is so much valued as a characteristic of the flowers that are grown for exhibition. The show pinks are richly and regularly marked with broad bands of colour on each petal, but border pinks are irregularly marked, or are self-coloured :

that is, of one colour only. The true pinks, whether show or border flowers, are generally esteemed for their spicy fragrance. But there is a class also much valued that are often quite wanting in fragrance: these are known as "mule" pinks, being hybrids of *Dianthus plumarius* with other species, such as, perhaps, *D. cæsius*, *D. sinensis*, and *D. superbus*. The mule pinks are not only useful as border plants, but are often grown in pots for forcing, being easily managed to supply flowers throughout the winter, and more especially at the dawn of spring, when flowers are much in demand, and are often very scarce.

There is no flower in the garden on which the amateur may with greater advantage bestow attention than on the pink. The shortest and surest way of securing a fine lot is to sow a pinch of good seed in the month of April, and raise the young stock in a frame. Sow in pots filled with sandy loam, and keep these moderately moist, and closely shut up and shaded in the frame until the young plants appear, when the tactics must be changed in favour of air and light. All seeds germinate more regularly and vigorously if screened from the light, but the growth that young plants make in a subdued light is likely to be weak and unhealthy. Give them as much air as the weather will allow, with water enough, but no excess, for the pink is a dry plant, and sooner suffers from damp than cold. When they are large enough to handle, plant them out on a border of fine soil in a sunny position, at about three inches apart. In the event of having to prepare a border for them, make it up of sifted turfy loam and sharp sand in about equal proportions. When the pinks begin to crowd one another, take them up, and plant them where they are to remain for flowering.

When pinks are grown in any quantity, a good bed should be prepared for them, rich and deep, but in a sunny, well-drained situation. The month of September is the best time for a general planting of pinks, more especially when the plants are purchased and named varieties are preferred.

Named pinks are multiplied from layers and pipings, the last being most in favour. Pipings are taken from the slender shoots at the time the plants are in flower. They should be cut at a length of three or four joints below the growing tuft, or "grass," and this tuft, or grass, must be somewhat shortened. A bed should be prepared in a cool shady spot, such as the north side of a hedge, or in the partial shade of old gooseberry-trees. About four inches of fresh fine soil should be spread, and on this the pipings should be firmly planted three inches apart.

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SWEET WILLIAM.

SWEET WILLIAM.

THE SWEET WILLIAM.

Dianthus barbatus.

NARROW-LEAVED varieties of this useful flower are called in the old books "Sweet Johns," and the broad-leaved "Sweet Williams." We speak of the carnations and pinks as the true gilly-flowers, and have ample authority for so doing. But at the present time the gilly-flower of the midland counties is the wallflower, and in old times the wallflower was called the sweet william. These confusions of popular names serve as a perpetual justification for the use of the Latin names of plants whenever it is intended to specify particular things, and leave no margin for the exercise of fancy or the changeable vagaries of custom. The plant before us is *Dianthus barbatus,* the bearded pink, and the name applies to this and no other. The French know it as

the nosegay of pinks, we know it as the sweet william, and it has been known as Jove's flower, London pride, tolmeiners, and London tufts. For the association with Jove there is good excuse, the name *Dianthus* giving the key thereto. Cowley, in the fourth book of his poem on plants, makes a special passage on the subject—

> "Sweet william small has form and aspect bright,
> Like that sweet flower that yields great Jove delight;
> Had he majestic bulk, he'd now be styled
> Jove's flower: and if my skill is not beguil'd,
> He was Jove's flower when Jove was but a child.
> Take him with many flowers in one conferr'd,
> He's worthy Jove, e'en now he has a beard."

There is no flower of the garden better adapted than the sweet william to the means and requirements of the town amateur, for it is most easily grown and always gives delight, even when far removed from the perfection it attains in the hands of skilful florists. And it will be well for the lovers of cheap hardy flowers to know the florist's model of a sweet william, for what are called "auricula-eyed" flowers are sumptuously beautiful and as easy to grow and keep as the commonest, for it is the good breeding in them, accomplished by regular crossing and severe selecting, that has brought the flowers to the splendid standard with which we are now familiar.

These cheerful favourites are grown from seeds and cuttings, the last-named method being resorted to only in the case of the double-flowered kinds or those of the single that are required for some special purpose for which they must be all alike. To raise a stock from seed requires no appliances whatever, as the seed may be sown in the border, and the plants may be transplanted to where they are wanted when large enough. But the best way is to sow the

seed on a bed of fine soil in a frame in a sunny position in the month of April or May. As soon as the young plants begin to crowd one another transplant them to a sunny border four inches apart, and in September remove them to the places they are to occupy for flowering the next season. It is a good plan in decorating a mixed border to put them in clumps, but single plants make fine heads of flowers, and should need no support whatever and no special care in the management. Sweet williams certainly like a rich soil, and in hot, dry weather water is good for them, as for many other beauties; but we have here no delicate subject that needs much nursing, and the principal point is to give every plant a good place, with food below and light above, for in shady and sour places they are of no use whatever.

To raise a stock from cuttings is an easy matter, but requires care, because the cuttings must be taken in the height of summer, when any neglect may prove fatal to them. Any plant it is intended to propagate in this way will supply a number of slender shoots at the base, those that rise in a robust manner for flowering being quite unsuitable. The best cuttings are about two inches in length, or three at the utmost, and it is well to plant them in a frame or under hand-glasses. However, a shady spot near a hedge will answer very well with the help of a sprinkling of water twice a day. It was part of our business when forming a fine strain of sweet williams some years ago to raise a very considerable number from cuttings to insure the finest possible quality of plants for seeding. And it proved an exceedingly easy task to root the cuttings in the border of a cucumber house amongst the cucumbers, the cuttings having the advantage of the warmth and moisture

necessary for the cucumbers together with the shade afforded by their large leaves.

When thriving in a good border sweet williams last many years, although classed as biennials. But often the ripening of seed proves fatal to them; therefore, any that are worth keeping should be assisted by the removal of the faded flowers before the seed-pods swell. There is no special advantage, however, in keeping them, because young plants produce the finest flowers, and it is advisable to raise a fresh stock every year.

These flowers are not often grown in pots, and for general purposes it would be waste of time to pot them. But an exception occurs in the case of the splendid double crimson variety, the flowers of which are large, rich, and appear in profusion, while the plants are truly perennial, and make fine pot-plants for windows and boxes.

FORGET-ME-NOT.

FORGET ME-NOT.

FORGET-ME-NOT.

Myosotis palustris.

FROM a scorpion grass to a forget-me-not is in words a strange transition, but the differing names represent one and the same thing. A myosotis is a mouse's ear, which is but a poor similitude for such a pretty plant as the one before us. As for the name suggestive of its use against a venomous creature, it may interest the reader to learn that so-called scorpion plants were abundant in old times, and their appearance in such books as Turner's Herbal tells a tale of some importance. It illustrates the fact that our early writers followed the lead of continental botanists in a slavish manner, and as in the south of Europe plants that twist in the way of a scorpion were supposed to be specifics against the bite of

the creature, so the English writers provided plants for the same purpose, in apparent ignorance of the fact that in England there were no scorpions. The story of the knight who was drowned in obtaining a tuft of forget-me-not for his lady love is a modern affair, and, therefore, not true. Were it but very old, it would be better entitled to credence, for age improves a fantastic tale more surely than it improves wine, and we can easily believe anything that belongs to the dark ages. But the story has its uses for the amateur gardener, because it takes him to the brook-side, where the true forget-me-not (*Myosotis palustris*) will be found with its feet in the water, and probably having for a companion another blue flower, the brooklime (*Veronica beccabunga*).

Thus we obtain through romance a key to the cultivation of forget-me-nots. One species, *Myosotis rupicola,* which we shall note again as *M. alpestris,* loves rocks and stones, and will thrive in a comparatively dry position, but all the rest require a moist soil, and will generally look happy in borders near a stream or in damp situations that many rock plants would not thrive in. Our native species, referred to above, although when growing wild a constant searcher for water, may be well grown in an ordinary border if accommodated with a moist rather than a dry position. It is a good subject for surfacing the ground under shrubs and amongst ferns in a moist spot, for its leafage is neat and its flowers are beautiful: it is from these the jewellers take their model when working up turquoises in rings and other such work. The yellow centre is a distinctive mark of our common forget-me-not, and suits at once the taste of the artificer and the customer, for by this mark is the flower known to all the world. The yellow centre is not wanting

in other species, but in this it is conspicuous, and combined with a peculiar tone of light starchy blue; it is

> "The blue and bright-eyed floweret of the brook,
> Hope's gentle gem! the sweet forget-me-not."

The British species of myosotis are eight in number, and all are called "scorpion grasses" because of the twist of the flower-stem, which is supposed to resemble a scorpion's tail. Amongst our native species, the best for the garden is *M. alpestris*, referred to above, a real mountaineer, found in plenty on some high limestone ranges in the north; it produces flowers that come near to those of *M. palustris*. This alpine plant is well adapted for the rockery, but must have a deep bed of gritty soil, which may be improved for the purpose by an admixture of some proportion of calcareous matter. Its large head of bright blue flowers is occasionally sweet-scented.

Very near the last is the woodland species, *M. sylvatica*, which is rare as a wild plant, but one of the best known in gardens, for it is a favourite as a bedding plant, and extensively grown in such noted gardens as those of Cliveden and Belvoir Castle. It is not so partial to moisture as *palustris*, but requires a deep soil, and will thrive either in sun or shade. There are white, rose, and striped varieties.

Perhaps the most useful of all in the gardens is the early flowering *M. dissitiflora*, which produces large sky-blue flowers, which sometimes pass into rosy red or pure white. This requires a moist soil, and is of great service for spring bedding.

The most distinct, but not the most useful, because it is somewhat tender, is the Azorian forget-me-not (*M. Azorica*), which produces flowers of the deepest blue, with an almost

infinitesimal eye. A sandy soil in either sun or shade will suit this beauty, of which there is a splendid variety named *Impératrice Elizabeth.*

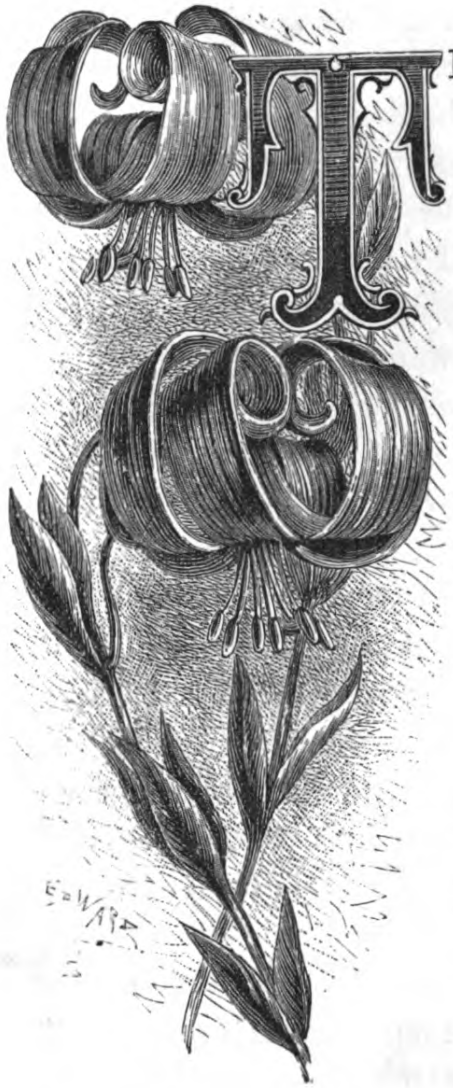
Forget-me-nots are found serviceable as pot-plants, and also to grow in beds, in frames, and pits, to furnish early flowers. In winter and spring their flowers are as much valued as violets, and are as easily secured; but the reader may be warned that what is called "forcing" must not be attempted, for a strong heat in the dark days would ruin forget-me-nots. Whether in pots or a bed, the soil should be loamy, with much grit, and, if possible, clean leaf-mould. Water forget-me-nots must have in plenty, and air and light they will need if stout, well-coloured flowers are desired. It is a good plan to take up from the borders in the autumn large clumps, and pot them without breaking them up. These wintered in a frame with plenty of air will give a fine crop of early flowers, and may then be thrown away.

LILY OF THE FIELD.

THE

LILY OF THE FIELD.

Lilium chalcedonicum.



THE lily of the field is not of necessity a lily of any kind that will correspond to our definitions; it may be understood as a flower, and that is sufficient. To make a serious botanical study of the purport of the impressive lesson of the lily in the Sermon on the Mount would be to put our paltry views of nature on a level with the most homely and searching of Divine admonitions. It must suffice, therefore, to say that the frail flower painted by the creative hand surpasses in glory the greatest works of man, and teaches him the sources of his benefits and his dependence on the bounty of Heaven. But associations have their uses to the mind of man, and it is neither irreverent nor unreasonable to ask if any particular lily might be associated with the lesson that has sunk deeper perhaps

than any into the human heart. There are probably only two species of lilium common to the Holy Land; at all events only two are mentioned in Dr. Tristram's "Survey of Western Palestine." These are *Lilium candidum,* seen wild on Lebanon, and *L. chalcedonicum,* marked as not seen, though known to be in the country.

This lily is known in gardens as the scarlet martagon. It is, however, quite distinct from *Lilium martagon,* which is commonly called the Turk's cap. The last is one of the commonest lilies, but a good border flower for all that, and one that has many forms, as, for example, the pure white and the Dalmatic, the colour of which is blackish-purple. The common variety is of a dull purple colour, by no means attractive, nevertheless pleasing and useful.

The scarlet martagon is not common, although easy to cultivate and resplendent in its beauty. In the later days of July it presents a liberal head of turban-shaped flowers of the most brilliant sealing-wax red colour. It is quite hardy, and thrives in any good soil, but is not happy in a calcareous soil nor in one that is of a poor dry nature.

How far east this lily extends we do not know. It is probably scattered through the temperate parts of Southern Asia, for we meet with one very much like it in Japan, the book name of which is *L. callosum,* less in growth than *chalcedonicum,* but serving fairly well as a small copy of it. Another nearly related kind is *L. carniolicum,* of which there are vermilion and yellow varieties.

For the full enjoyment of lilies a considerable extent of garden is necessary, for when many kinds are planted in proximity their several beauties seem to neutralise each other. In isolated clumps and groups, set off by masses of leafy vegetation, these distinct and striking flowers appear

to singular advantage. Most delightful is it in a walk through a woodland scene to come upon great clumps of *L. auratum,* the golden-rayed lily of Japan ; or the cream-tinted, sometimes buff-coloured, *L. testaceum,* also known as *L. excelsum ;* or, most noble of all, and least of all understood, *L. giganteum,* that loves a deep, damp bed of loam or peat, and needs shelter in the spring from the frosts that are then so destructive.

The cultivation of lilies in pots is much practised, and with many special advantages. In large gardens pot lilies are needed for the conservatory and entrance hall ; in market gardens they are wanted to supply cut flowers in advance of the season for lilies in the open ground. The amateur who would succeed in growing lilies in pots must observe a few golden rules. In the first place the potting should be completed at the earliest time possible after the plants have flowered, for immediately the flowering is over they begin to make new roots. If the bulbs have to be purchased, therefore, orders should be given early, and the potting should be completed immediately the bulbs come to hand.

Another golden rule is to insure perfect drainage by packing the crooks with care before the compost is put in the pots, for unless surplus water can escape readily, the soil will become sour, and the plants will not prosper. As regards the soil, a mellow hazel loam containing abundance of vegetable fibre, such as loam from rotted turf, will suit any lilies, as will also turfy peat of the best quality. The lovely *L. longiflorum* is decidedly partial to peat, but will thrive in loam with the rest. A calcareous soil is not good for any of them. Finally, all lilies enjoy liberal watering and abundance of light and air.

The most useful lilies are the following:—*L. Browni*, with very large trumpet-shaped flowers, white, delicately striped outside with purple. *L. auratum*, a giant of its race, the flowers expanded, with yellow or red stripes on a white ground. *L. candidum*, the common white lily, thriving almost anywhere, and yet a little fastidious. *L. chalcedonicum*, always thriving best in a rich deep loam. *L. croceum*, good and cheap, very accommodating. *L. elegans*, usually orange red, but variable, and always useful. *L. longiflorum*, a lovely trumpet-shaped flower of the purest white; it requires a peaty soil, but is not very particular; in a cold locality a sheltered spot should be selected for it. *L. tigrinum*, the tiger lily, is very gay, and some varieties flower late; hence the Laureate puts it into the autumn garland:

"Heavily hangs the broad sunflower
Over its grave in the earth so chilly,
Heavily hangs the hollyhock,
Heavily hangs the tiger-lily."

VERBENA.

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VERBENA.

THE VERBENA.

Verbena hybrida.

ALTHOUGH there is no such plant in the learned books as *Verbena hybrida*, the name may be allowable now as compassing the fact, and as suggesting interesting possibilities. A flower has been formed from the inter-crossing of *Verbena melindres*, *V. Tweediana*, *V. incisa*, and other species of South American origin, and this compound we call *the* verbena, which, in its collective character, may for garden purposes have the rank of a species. It is not improbable that it has the power of a species too, for the cultivators cross the varieties only now, fearing to spoil the flower by the introduction of any more alien blood. The great range of variation of this favourite is explained by its origin: it presents us with all colours save yellow, but its

VERBENA.

[illegible] VERBENA.

[illegible] hybrida.

ALTHOUGH there is no su[illegible] in the learned books a[illegible] *hybrida*, the name may [illegible] able now as compas[illegible] fact, and as sugge[illegible] teresting possibilities. [illegible] has been formed fro[illegible] ter-crossing of *Verbe*[illegible] *dres*, *V. Tweediana*, [illegible] and other species [illegible] American origin, and [illegible] pound we call *the* [illegible] which, in its collectiv[illegible] ter, may for garden [illegible] have the rank of a sp[illegible] is not improbable th[illegible] the power of a specie[illegible] the cultivators cross [illegible] ties only now, fearin[illegible] the flower by the in[illegible] of any more alien bl[illegible] great range of variati[illegible] [illegible] origin: it p[illegible] us w[illegible] save yellow, that its

range is chiefly in the shades of red and purple, passing to pure white in one direction, and purple-blue in another. The parent species were introduced to cultivation from 1826 to 1837, and therefore we may regard the present subject as somewhat of a novelty, although, in the language of the garden, the verbena is quite an old flower, because we have seen it come in and go out of fashion. Its beauty remains—change of fashion does not affect that; and its usefulness is not greatly diminished, even though the verbena is no longer in much request as a bedding subject.

The generic name refers to the vervain, or ferfain of Celtic superstition. This, the *Verbena officinalis* of British botany, was in great repute in pagan times as a herb of sacrifice and a medicine of great power. The Roman poets frequently allude to it, and the later gatherers of mystic lore found it useful to adorn their verses. Spenser associates the "dull poppy" with the "vein-healing verven;" and Drayton declares the "holy vervayne" to be "'gainst witchcraft much availing." The vervain is as nearly destitute as may be of any useful property, and the South American verbenas are in the like case; they have but their beauty to recommend them, and that is sufficient.

The garden verbena fell from its high estate in a way that many other favourites have fallen: not through the frown of public disfavour, but by the prevalence of a mortal plague. What was called "verbena disease" compelled in many cases a discontinuance of the cultivation; but as the plant fell into neglect the disease disappeared, and its health and vigour were restored—a fact very suggestive of the evil of what has been termed "over-cultivation." The fact is, the gardeners had to crowd and starve thousands of plants to keep pace with the demands of the

bedding system, and the verbena suffered most of any, for the sufficient reason that it cannot endure to be crowded and starved. It requires generous culture, in a somewhat pure air; and being nearly hardy, debility of constitution must result from crowding it in warm houses for months together, to be followed by planting it in poor soil to brave the summer heat with insufficient root hold.

The verbena requires a rich loamy soil, a somewhat moist position, and a free and pure air. The heat of the stove is deadly to it; and to be dry at the root for any length of time—as must happen often when large numbers of plants are wintered with the aid of but few attentions—is certainly injurious, if not deadly. When employed for bedding, the plants should be wintered in a cool, airy house, with the aid of sufficient heat to keep out frost; and a new stock should be propagated from cuttings of the tender-growing tops in the month of March. When carefully managed, these young plants have the vigour of seedlings, and when planted out at the end of May, in beds of rich loamy soil, make a free growth and flower superbly. It is not good at any time to pot rooted runners or to divide old plants; it is always best to make plants from cuttings in the autumn, and from these to make a fresh stock from cuttings in the spring. The verbena roots so readily, and is of such kindly growth when treated fairly, that there should be no difficulty in its management as one of the best of plants for the summer flower garden.

As a frame plant, to grow into specimen form, the verbena is of great value. For this purpose, a beginning should be made with autumn cuttings, and in the spring these should be put into five-inch pots, and be shifted on until they fill eight-inch pots, the growth being trained out

on a wire balloon, or any kind of trellis that may be preferred. Having flowered, they should be destroyed, and the stock of specimens kept up by a succession of young plants.

It is a simple matter, and especially worthy of the attention of amateur cultivators, that the verbena may be grown as an annual from seed, and will afford a delightful display of colour in the summer and autumn. The seed may be sown in autumn, and the plants may be wintered on a shelf near the glass, and being shifted in March to insure vigour of growth, may be planted out in May for flowering. But where this routine might be inconvenient, sowing in March will suffice; a moderate heat will soon bring up the seed, and the young plants will need only the usual treatment of half-hardy annuals to insure the most satisfactory results.

MAJOR CONVOLVULUS

MAJOR
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major.

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MAJOR CONVOLVULUS.

MAJOR CONVOLVULUS.

Convolvulus major.

THIS sweet old favourite is best known to botanists as *Pharbitis hispida* or *Ipomœa purpurea;* but the garden name of Morning Glory might be sufficient for present purposes, for it is universally understood. The plant was known to Parkinson, who, in 1656, described it as the "greater blew Bindweede, or Bell-flower with round leaves." Linnæus named it *Convolvulus purpureus,* under which name it was figured and described in the *Botanical Magazine,* 1790, tab. 113. In Miller's "Gardeners' Dictionary" it is described as "an annual plant, which grows naturally in Asia and America, but has been long cultivated in English gardens by the title of *Convolvulus major.* Of this there are three or four lasting varieties; the most common hath a purple flower, but there is one with a white,

another with a red, and one with a whitish-blue flower, which hath white seeds." Miller recommends sowing on the open border, "where the plants are designed to remain;" but it is better practice to sow the seeds in pans or pots, and nurse them under glass, so as to be strong and growing when put out in May for flowering. This secures to our subject a longer growing season than it can possibly have when sown in the open ground; and if planted out in rich light soil, it will soon run to ten or twelve feet, and present its lovely flowers in profusion. There is not a finer subject at our command for the study of delicate gradations of colour than this; its shades of red, blue, and purple are unique, and in its beauty of form it will ever surprise us, however familiar we may be with it. In the catalogues of the seed-houses, about a dozen varieties are offered, but they are all to be found in a packet of mixed seed.

A hardier species of convolvulus is that known as *Ipomœa hederacea*, or the ivy-leaved pharbitis. The leaves are three to five lobed, the middle lobe ovate—a character peculiar to this species. The usual colour of the flower is deep glossy blue; the petals are rough, with yellowish hairs. This species may be sown on the open border with better prospect of success than the finer and more free-growing plant above described, and both are worth a place in any garden.

A grander plant than either of the foregoing is the red and blue convolvulus (*Ipomœa rubro-cærulea*), a native of Mexico, introduced about 1823, but not fully recognised until the year 1834, when it was figured in the *Botanical Magazine*, t. 3,297, from specimens flowered in the garden of John Allcard, Esq., of Stratford Green, Essex. The seeds from which Mr. Allcard's plants were grown were

collected by Mr. Samuel Richardson, in the province of Guanaxuato, in Mexico, and were sent over to Mr. Powles, of Stamford Hill, who liberally distributed them.

This fine plant has purple-tinted branches, large cordate pale green leaves, and axillary clusters of flowers, which are most elegantly wreathed in spiral folds of red and white while in bud, but finally open to flowers that are five-lobed, and of a clear pale blue colour, sometimes striped with white. Being raised from seed, and sown in February or March, and carefully grown on in a warm house, the plants may be put out in June in a warm, sheltered situation, and soon after will begin to show their lovely flowers.

The minor convolvulus (already figured and described: Vol. I., page 81) is known as *Convolvulus minor* and *Convolvulus tricolor*, the three-coloured convolvulus. This is truly a hardy annual, that may be sown in autumn to stand the winter, or with other annuals in the spring. It forms a beautiful bed when in a sunny position on the north or west side of a house within view from the windows. The fresh flowers that open with the morning will all turn their faces to the south or east, and thus will be seen to peculiar advantage. The combinations of blue, yellow, and white in the flowers afford a rare lesson in colour. There are many varieties, and mixtures are generally preferred. But the finest form is undoubtedly the dark purple; it is truly sumptuous in colour.

A sweet rockery plant is the Mauritanian convolvulus (*C. Mauritanicus*), of dwarf habit, producing in summer lovely light blue flowers. It is not quite hardy, and must, therefore, be wintered with other tender bedding plants under glass, and planted out again in summer. It is

admirably adapted for baskets to suspend in the greenhouse, but is very happy in a sheltered nook in front of the rockery.

There are a few hardy species worth a permanent place in the garden. *Convolvulus dahuricus* is a fine twining perennial with purple flowers. *C. sepium* is a grand plant with white flowers, but a dangerous intruder if allowed to run at its own sweet will. *C. sylvaticus* is a delightful plant to run over a rough bank, and *C. scammonia* makes a pretty pole plant, full of delicate suggestions for an artist.

LAPAGERIA.

LAPAGERIA.

Lapageria [illegible]

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LAPAGERIA.

LAPAGERIA.

Lapageria rosea.

PLANTS of recent introduction, more especially those from the great Western continent that we call the New World, do not willingly lend themselves to literary treatment. In respect of the book treatment of natural history subjects, we run in vicious grooves; and if the garrulous "ancients" have nothing to say, we seem to be struck dumb, for the sources of knowledge appear to the mere bookmaker to be in what are called the "classics." Alas, for the case before us! Theophrastus and Ovid knew not the lapageria; and it has not been known to our gardens at the present date for so many as fifty years. The flowers had been described by Ruiz and Pavon as "Formosissim;" but the lapageria was unseen at Kew until 1847,

when an American gentleman, Mr. R. Wheelwright, presented a plant obtained from Concepcion, Chili, and very shortly thereafter it was talked about, as it deserved to be, as one of the wonders of botanical discovery. Messrs. Veitch, about the same time, secured it through their successful collector, the late Mr. Thomas Lobb; and, as a matter of course, it was cultivated by them for commercial purposes.

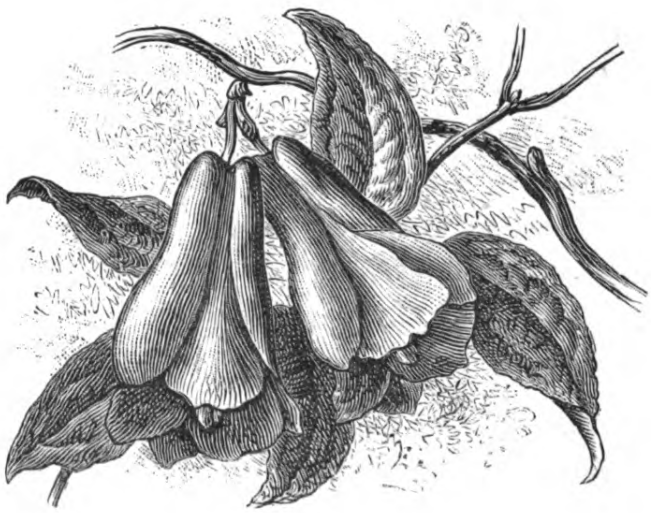
At this point we wish to mention an incident in the history of the lapageria of interest much greater, even if less attractive, than any possible association of the unknown thing with human loves or inhuman follies in Greek or Roman poetry might be. The plant was figured in the *Botanical Magazine* in 1849 (t. 4,447), and reference thereto will enable any one who knows the flower to say that the figure is admirably lifelike. But read the story that accompanies it, and you will learn that the artist, Mr. Walter Fitch, had no living flowers at command, for none had then been seen in this country. The story declares that "our flowers are taken from dried specimens, aided by coloured figures made in the native locality." Thus we leave the overworn "classic" groove; we are not to consult the ancients about a flower that for them did not exist, but we have forced upon our attention the fact that a botanical draughtsman may, by means of dried specimens and secondary helps, produce a portrait that shall have, for both pictorial and scientific purposes, the value of a drawing from the life. To this remark it should be added that very much of botanical draughtsmanship in recent years has been founded on dried specimens and descriptions, and, generally speaking, technical accuracy has been secured thereby.

The lapageria belongs to the Smilax family, and therefore, by a little adroit management, it may be dragged

into the classical connection; but we shall resist the temptation, and say that in the country it adorns its roots are used for the same purposes as sarsaparilla, while the ripe pulpy fruit is eaten, and is much prized for its agreeable flavour. It was first described, as noted above, by Ruiz and Pavon, in "Flora Peruviana," and was by Dr. Lindley included in a new order called Philesieæ; but Dr. Hooker, in his "Flora Antarctica," placed it in the Smilax alliance, and there it remains most properly. The genus is named in honour of Josephine Lapagerie, wife of Napoleon Bonaparte, who, in her gardens of Malmaison, rendered some special services to botany.

Lapageria rosea, and its white variety *alba*, have given much trouble to cultivators; but being now well understood, they occasion trouble no longer. They are so nearly hardy, that the cool plant-house is the best place for them, generally speaking, while it is probable that in some favoured spots in Devon and Cornwall they may prove to be sufficiently hardy to thrive on open walls and trellises through a series of average seasons, and perhaps survive the occasional severe winters that put all such plants of doubtful hardiness to the extreme and final test. The soil for the lapageria should be good turfy peat, with a considerable mixture of sharp siliceous grit. It should be free from calcareous matter, and, generally speaking, what is known as silver-sand and brown orchid peat are the safest materials for a compost. We have found that the fine grit sifted out of the sweepings of gravel roads and paths is the best of grit for such a purpose, provided the material is siliceous, and not calcareous—a point on which any one may be easily satisfied. Another requisite is an abundance of root moisture. It is not, indeed, necessary to provide the

roots with a running rill of water; but a large bulk of soil must be provided, and the supply of water must be copious and constant all through the growing season. Liberal root room, and correspondingly liberal head room, are conditions of importance in the cultivation of this superb climber. When these are provided, there is little else to do beyond training the plant to the wire or rafter near the glass, and shortening the growth only when it becomes too luxuriant for the situation. When in any way cramped or starved, the lapageria is more plague than profit. Better always a thriving tuft of native chickweed than a poor example of any grand exotic!



AFRICAN LILY.

AFRICAN LILY.

Agapanthus umbellatus.

NOTHING that the great African continent has given us in the way of flowers can surpass in value the glorious old African lily, which is not a lily, but an amaryllis, and is none the worse for that. From Africa we have the magnificent terrestrial orchids called disas, any number of heaths and pelargoniums, not a few of the finest palms, and the hard-leaved cycads. But for usefulness, the agapanthus stands alone; and if we are called upon to find a companion for it, the *Vallota purpurea* shall have the preference over all other African plants; and this also, although called "Scarborough Lily," is, strictly speaking, an amaryllis. The agapanthus, or African lily, has been classed as a crinum, as a hyacinth, as a polyanthus,

and a tulbaghia; its modern name dates from the publication of Aiton's "Hortus Kewensis," wherein, on the authority of L'Heritier, it is entered by the name now universally recognised. It was cultivated in the Royal Gardens at Hampton Court in 1692, therefore it is no novelty; and yet of its history there is not much to be said.

This fine plant is commonly and advantageously regarded as requiring protection in winter, and is, therefore, grown in pots and tubs. It is, however, quite hardy in the southern counties, and in London survives an ordinary winter in the open border, where, if spared for a few years the trial of a severe and prolonged frost, it increases to a large mass, and flowers freely in the month of September. The winter of 1885-6, the longest we have known, though certainly not the severest, affected out-door plants at Kew so slightly, that when, in the month of April, the spring renewed the growth of vegetation, they were found to be fresh and green, and scarcely touched by the winter frost. In the Botanical Gardens of Manchester some large clumps have stood out in borders for several years, with but little harm, from which they have soon recovered. Some very fine clumps that we had in the open border, on heavy land, in a northern suburb of London, were so much injured by the keen frost that occurred in the month of March, 1880, that it was not until the end of May that they presented above ground a new growth of green leaves from the roots; and in that year they did not flower, having enough to do to accomplish their re-establishment.

We are particular to set forth these facts, because, when a noble plant, such as the one before us, proves to be hardy enough to brave an average winter in the open ground, the gain to all lovers of a garden is immense.

But, as remarked above, the plant is with advantage treated as requiring protection in winter, and, generally speaking, the amateur cultivator will insure the best success by practising pot-culture.

The agapanthus requires a rich, strong, loamy soil, in which it produces a large mass of stout, fleshy roots, that are thirsty in high summer time. It is a mistake to prepare a light sandy compost, except when the plants have been cut up for increase; in which case, for the first potting they should have a sandy soil of a rather poor character, and be put into pots as small as possible. But when they have made new growth, and require more room, the soil should be a rich, strong loam, the pots should be large in proportion to the plants, and from June to August they should stand in pans of water. By this treatment they will make a grand growth, and flower finely. During winter a stable or shed will suffice to shelter them, but the best place is a plant-house, heated sufficiently to keep out frost. It is a good practice to shift the plants into pots one size larger than the last when growth commences in the spring, and to continue this practice until they become too large for the purposes required, when they may be divided by carefully cutting through at the crown, while being cautious not to seriously mutilate the roots. Each piece removed should have a bunch of roots of its own; and if these are unmanageable when they are potted, they may be shortened, but must not be severely cut back. For some time after the divided pieces have been potted in small pots very little water should be given. To be out of doors from the 1st of May to the 1st of October will suit the agapanthus well.

There are some half-dozen varieties of *Agapanthus*

umbellatus, comprising one with flowers of a pure white colour, one of very dwarf habit with narrow leaves, and one the leaves of which are beautifully variegated. For all ordinary purposes, the common blue robust variety is the best. We have had large plantations of this plant, mixed with tritomas, gladioli, and lilies. They gave but little trouble, and made an impressive display of their various and magnificent flowers—a kind of "hardy gardening" not often seen, though neither costly nor difficult.

MIGNONETTE.

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MIGNONETTE.

Reseda odorata.

A PLANT may have no history, and yet be full of fame. It is so with the mignonette, which was unknown to the authors of the best of our old English gardening books, and the history of which may be written on the thumb-nail. It is a plentiful weed in Northern Africa, and more particularly in Egypt, whence it travelled to Italy, and made its way northward. In 1742 Lord Bateman saw it in the Royal Garden of Paris, and secured seed for its introduction to this country, where it soon became as famous as in France, its delightfully fresh perfume being a sufficient recommendation. The French gave it the familiar name it bears of "little darling," and none would desire to improve upon that. It is never spoken of as a *reseda* except in botanic gardens, and the most enlightened company would be nonplussed if one were to

remark on the sweetness of *Reseda odorata* without at the same time giving it the name by which it is more commonly known.

The mignonette is an annual or a perennial, at the command of the cultivator. At the moment of writing this we have near at hand plants of gigantic stature, that have flowered almost continuously winter and summer through a term of seven years, and appear capable of continuing the delightful performance for seven years more, if aided with a reasonable amount of care. Any one who has a greenhouse may easily grow mignonette to a great size, say, for example, to the stature of a man, and of breadth proportionate to form a noble tree, the two requisites being a rich light soil and complete immunity from frost, in a house well supplied with air and light. At the moment of writing this we can see on a garden border a patch of self-sown mignonette, and by this example we can rank it with the weeds of the garden. Indeed, for many years past we have always had as much outdoor mignonette as we needed without sowing a single grain of seed. The self-sown plants scatter seed freely, and we have to destroy a considerable number of the plants that appear uninvited and in excess of requirements. Thus we have presented the two extremes of mignonette culture; but we must add that the pot culture of mignonette is the most remunerative, for well-grown specimens are unique in beauty, and their fragrance in the conservatory or dwelling-house is invaluable.

It was a happy thought of the man who first entered upon the work of improving the mignonette. We call to mind the time when only one sort was known, and now we can find a round dozen. They are not all good; but two

or three of the number are characterised by fine qualities of colour, growth, and perfume. The most distinct of the varieties are the following :—*Parson's White* has white flowers, and for that reason is interesting; another of the same class is *Garraway's White.* These are of quite secondary importance; they are scarcely white enough to attract attention, and they are somewhat deficient in constitutional vigour. *Miles's Spiral* has the yellowish-brown flowers of the common sort, but a fine, compact habit of growth, the flowers appearing in numerous bold spiral clusters. The *Tall Pyramidal* is of vigorous habit, and well adapted for pot culture to form handsome specimens. The very best of the series is the one called *Golden Queen.* This is of dwarf, but robust, habit; the flowers are of the colour known as "old gold," and a well-grown bed or clump has a distinct and pleasing appearance.

The most useful form of mignonette is in small pot specimens, which may be destroyed after one season of flowering. The seed may be sown at any time; but the usual time of sowing is the month of August. About half a dozen seeds are sown in a five-inch pot, the soil employed being a rich, light, loamy compost. When the plants appear, all but the three strongest are removed. A light, warm, airy place in the greenhouse is selected for the plants, which soon make a healthy growth, and flower from Christmas until late in the spring, giving from first to last the least imaginable amount of trouble, and proving their usefulness by the delight of every one who can see or smell them. When large specimens are required, the seed should be sown in three-inch pots, and one plant only left in the pot to grow. This must be shifted into a five-inch pot as soon as it needs more root room, and again to a six

or eight-inch pot, great care being taken to prevent any injury to the roots. A certain amount of training will be necessary to form a handsome tree, and the golden rule must be observed, never to allow it to ripen a single seed; in fact, the seed-pods should be assiduously removed as fast as they appear.

HOLLYHOCK.

HOLLYHOCK.

Althæa rosea.

THE eclipse of a grand garden flower must be reckoned as a domestic calamity, and this we have had to endure in the cultivation of the hollyhock. But an eclipse is only a temporary obscuration; if suns and moons recover their wonted brightness, we may reasonably hope to see the hollyhock once more in its proper splendour, the noblest occupant of the country garden. Remembering the late Cecil Lawson's magnificent picture, "The Minister's Garden," we feel that the restoration of the hollyhock must be attempted, in the interests of art no less than to maintain the high delights of the summer garden, and the pleasant memories it treasures for reflective observers.

The hollyhock was introduced from China in sufficient time for the enjoyment of our grand old gardeners, for

Parkinson figures the double hollyhock under the name of *Malva rosea multiplex*, a name it might still bear with propriety, for it is a true mallow, and may be grown for fibre or fodder with possible advantage. As a garden flower it attained its highest fame in the first half of the present century, Lord Hawke, as an amateur, and Mr. Chater, of Saffron Walden, as a trade cultivator, being its best representatives. As an exhibition flower it ranked equal with the dahlia, and good collections comprised flowers of all colours, the size, the form, and the fashion thereof being truly sumptuous. But the eclipse came. It is but a paltry shadow that for a season blots the sun from the heavens. It was a paltry fungus, finding a home first on the common mallow of the fields, and thence spreading to the garden, that caused the eclipse of the hollyhock. Beyond all doubt the railways were the proximate cause of the mischief, for on railway banks the mallows run riot, and form the breeding grounds for the pest that for a time excluded the hollyhock from our autumnal exhibitions. In view of the facts, we can with emphasis repeat the advice of Thomas Tusser, who, occasionally, in his "Five Hundred Points of Good Husbandry," says "destroy mallow." The grower of the hollyhock should allow no wild mallows to come near his garden.

It is possible the cultivators contributed in some degree to the eclipse. The new varieties were in great demand, at prices decidedly remunerative, and it was the custom to propagate them in a high temperature, and often, with a view to increase the plants rapidly, the more expensive named kinds were grafted on roots of unnamed seedlings; and in order to promote a perfect junction of the graft with the stock, it was necessary to keep them for a time in a

steaming heat, which caused a quick growth and a corresponding debility of constitution. The practice has been abandoned, because the demand for named hollyhocks has declined, and now the plants are generally raised from seed, and as such are biennials, flowering in the second year, but becoming perennials, if needful, at the discretion of the cultivator.

It is a fortunate circumstance that seedling hollyhocks do not greatly vary from the form and colour of the parent flowers. It follows that, when the seed is obtained from plants carefully selected for their fine qualities, a good bloom may be expected by adopting the simplest and the cheapest method of cultivation. The seeds may be sown at any time from March to August; but early sowing is advisable, as the plants can be put out in time to make a free growth the first season, to prepare them for a strong bloom in the season following.

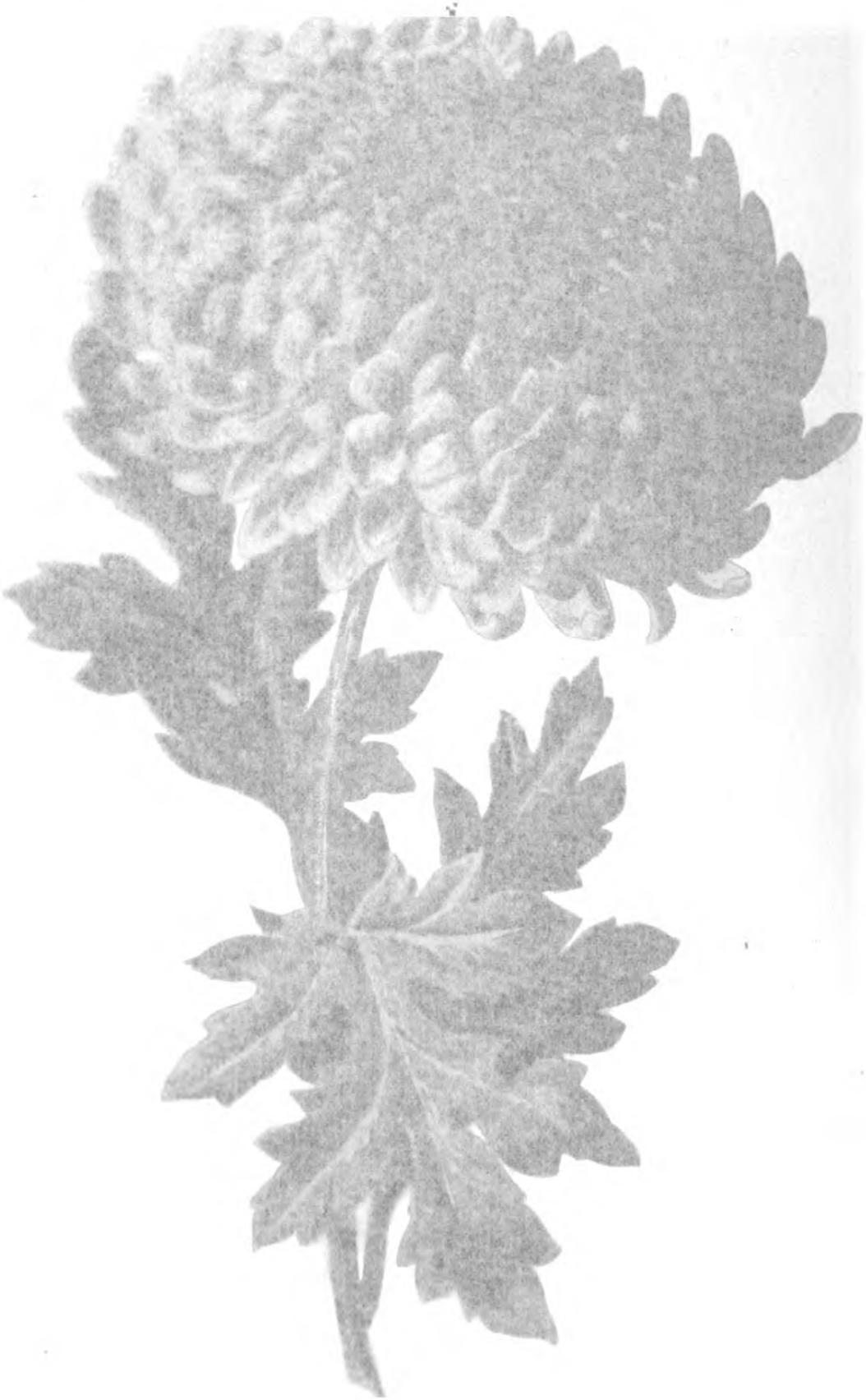
As a considerable number of the finest named sorts, that were things of renown fifty years ago, are still in cultivation, the propagation by divisions and cuttings is still a matter of some importance. The time for this business is in the decline of the summer, or early in the autumn. It is an easy matter to detach from the base a short shoot or portion of the stool, and these being potted, and kept through the winter in a frame, will grow freely in the spring, and should be planted out as soon as the weather permits in April or May—the earlier the better, provided there is no particular danger of injury from frost. In places much exposed the planting must be later than in warm, sheltered situations.

The requisites for the production of a fine bloom of hollyhocks are a deep, rich, moist soil; perfect drainage, to

prevent injury by winter damp; and full exposure to air and light. In places much overshadowed by trees, or where much hemmed in by walls and fences, hollyhocks do not prosper. They love sunshine and fresh air; they love good living; and in a hot, dry season may with great advantage be liberally supplied with water.

On the question of single versus double hollyhocks there is not much to be said, because what is preferred to-day may be rejected to-morrow. Having through a course of years grown collections of the finest named hollyhocks, our own taste inclines to the double flowers, the beauty of which might tempt one to speak of them as sublime. But few, very few, of the lovers of flowers in the present day have any proper idea of what a hollyhock of the florist's type is like; in the days when they were freely and finely exhibited they filled with surprise the novitiates, and we hope to see them do so again, for, as we have said above, between eclipse and annihilation there is a difference. Disease has not destroyed the potato, and this, our grandest of border-flowers, gives many welcome signs of its intention to live through the trial.

CHRYSANTHEMUM.



CHRYSANTHEMUM.

Chrysanthemum Indicum.

CHRYSANTHEMUMS have been known in Europe for fully two hundred years, yet they have been but recently "discovered," for as a familiar garden flower the history of the plant dates from the year 1843, when the first public exhibition of chrysanthemums was held in the ancient city of Norwich. Very soon thereafter followed the formation of the Stoke Newington Chrysanthemum Society, the first exhibition of which was held in the year 1846. This society may be regarded as the parent of a thousand, for although three years later in its birth than that at Norwich, it has served as the model for all similar societies, and as the school of chrysanthemum culture for the whole world. During a run of about forty years the village that has become so identified with this flower was better known to the floral world than any other suburb

CHRYSANTHEMUM.

of London, for with the return of the chrysanthemum season Stoke Newington was "in everybody's mouth." Alas! history will not keep to established grooves; this model society has become "National," and the flower, through the growth of its renown, has actually lost one of its most picturesque associations.

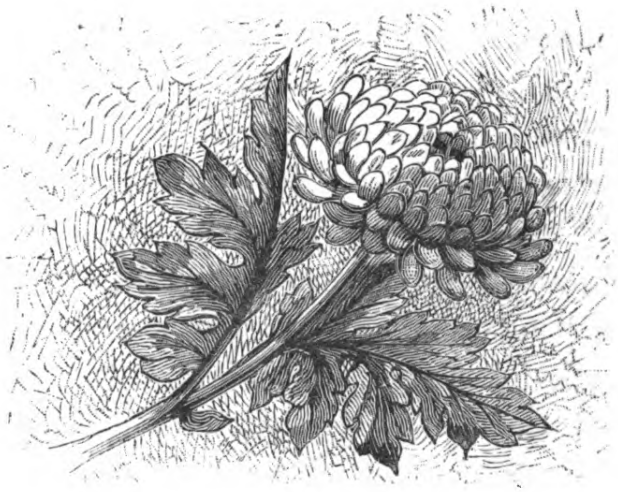
Pictorial art in China and Japan owes much of its life to the chrysanthemum and the pæony. These flowers are seen on their splendid pottery, and in the fantastic pictures of the native artists, in all possible degrees of naturalism and conventionalism, both flowers happily lending themselves to the invention that likes to make a toy of the truth. The chrysanthemum is in both countries a greater favourite than the pæony; and it must be confessed that, while we have derived from China and Japan the parents of our finest varieties and the types of the most distinctive forms, we are not the less indebted to them for the lessons that are the basis of our chrysanthemum cultivation. From the Chinese our gardeners have learned the art of producing specimen flowers of the most finished "incurved" form, such as the figure of *Jardin des Plantes* accompanying these remarks may suggest to the reader. For a full-sized specimen the size of the page does not suffice, for we are familiar with flowers that could not be put into a man's hat, so large are they.

The Chinese chrysanthemum was first accurately described by Breynius, in his "Prodromus," 1689, under the name of *Matricaria Japonica maxima*, and he states that six varieties were at that time in cultivation in Holland. It received its present botanical name of *Chrysanthemum Indicum* from Linnæus, whose "Species Plantarum" first appeared in the year 1753. The first specimen known to have been

grown in England was one that bore small yellow flowers, in the Botanic Garden, Chelsea, in the year 1764. It is interesting to be enabled to add that a dried specimen of this very plant was (with others) presented by the famous gardener at Chelsea, Philip Miller, to the Royal Society, and is now in the herbarium of the British Museum, in the series known as "Miller's Specimens." But this plant perished soon after the transfer of Miller's specimens; and it was not until the year 1789 that the true Chinese chrysanthemum obtained a place in Europe. In that year M. Blanchard, a merchant of Marseilles, imported three plants, the white, purple, and violet; but the purple only survived that expedition to become a garden flower. In the year following the Royal Gardens, Kew, obtained a specimen of this purple chrysanthemum; and thus the large-flowering chrysanthemum, the queen of autumnal flowers, obtained a home in this country. One hundred years have passed, and every year has seen something of importance added to its history, for from the first flowering of well-grown plants in Colville's nursery, at Chelsea, in the year 1795, it has been a subject of public interest and of increasing importance in the social circle. There are now over two thousand varieties named and registered, and hundreds of societies that especially recognise and encourage the cultivation. The number of these societies being ever increasing is an intimation that the chrysanthemum has not even yet reached the zenith of its fame.

In the cultivation of this plant, it should be kept in mind that it is not perfectly hardy in this country, and, therefore, as a garden flower that every year challenges the winter by flowering late, it is often much marred by unkind weather. In the autumn of a recent year, the

chrysanthemums in London gardens being spared frost, fog, and heavy rain, made a wondrous display, and compelled all observers to note the exceeding rarity of such a November festival. Then we saw the colours of the flowers in their highest perfection, far exceeding in depth, purity, and brilliancy the best specimens as seen in exhibitions, for these last are necessarily flowered under glass. The severest winters do not indeed kill the plants, but one or two days of "dirty weather" in November may damage the bloom so far as to deprive it of all beauty.



CACTUS.

CACTUS.

Phyllocactus crenatus.

PHYLLOCACTUS is a "leafy" cactus, as distinguished from a melocactus, which resembles a melon, or an echinocactus, which may be likened to a hedgehog. The phyllocactus section of "Indian figs" includes many that were formerly classed with *cereus*, the torch thistle, and with *epiphyllum*, the "leaf-flowering" section. For all ordinary purposes these leaf-flowering cactuses are the most useful of any, being of rapid growth, flowering freely and gaily, and requiring no particular care either to multiply them or to keep them through the winter.

The cactuses are now freely scattered throughout the world, and are familiar weeds in many countries that afford them a dry bed in winter and a glowing sun in summer, with sufficient rain at times to enable them to make their annual growth for extension and renewal.

Their frequent appearance on the shores of the Mediterranean has led many an artist astray, and we call to mind at this moment a fine picture, "Ruth and Naomi," in the Academy of 1885, wherein a group of flowering cactuses adorns a corner of the vineyard of Boaz. But the persons represented in the picture never saw the cactus, for it is, in all its forms, a strictly American plant, and was unknown in the old world until some time after the discovery of the new by Columbus in the year 1498, when, in his third expedition, he first landed on *terra firma* in the immediate vicinity of Trinidad. That Spain and Portugal should first become possessed of plants from tropical America was not only a proper consequence of the nationality of the early adventurers in the West, but a consequence also of the fitness of their conditions, for the rugged mountain sides of the sunny peninsula present a proper home for a large proportion of these curious plants. Their own seat of power is Mexico: there they run riot on hot sandy plains, or barricade the mountain pass against the traveller with their wreathing, snake-like growth, that must be approached with caution because of its formidable spines; or by covering the ground with spherical masses more terrible than the caltrops that the ancient warriors threw upon the field to cripple the enemy's horses.

A considerable proportion of the members of the great cactus family are wholesome and useful; but there are exceptions, for a few that exude a milky fluid have the acridity of euphorbias. The globular kinds are of great service to the wild horses, which break them with their hoofs to obtain the cool, juicy flesh free from contact with the dreadful spines; and a considerable number produce edible fruits, the plant before us being an example. The

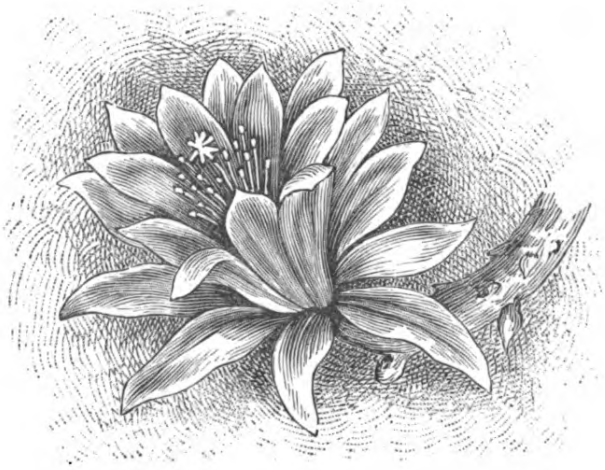
prickly pear, or Indian fig of commerce, is the product of *Opuntia vulgaris,* a very handsome greenhouse plant that grows in a succession of green oval disks dotted with spines, and produces in the early days of summer a glorious show of large, satiny, yellow flowers. The much-valued cochineal is the produce of an insect, the *Coccus cacti,* that lives on the cochineal cactus, *Opuntia cochinillifera,* a Mexican plant now largely established in the Canaries and in Java, but which has been put in the shade somewhat by the competition of aniline dyes, which have at least the merit of cheapness.

In the cultivation of cactuses, the requirements are few and simple, but must not be trifled with. Cactuses demand a somewhat calcareous sandy soil, with the most perfect drainage, for damp is their greatest enemy. It is too much the rule with cultivators to employ a very poor soil; but this is a mistake. A really generous soil is requisite to ensure free growth and fine flowers; but the drainage must always be the first consideration, for that being faulty, all other conditions, however suitable, are of no value whatever. At all times cactuses should be in the fullest light possible, and throughout the winter they should have no water, or no more than will just suffice to prevent shrivelling.

The summer treatment should include liberal supplies of water, and in the case of fine specimens that show promise of producing a great crop of flowers, weak liquid manure may be given until the flowering is over. It is a common error to keep these plants on short commons all the summer long, the result being a poor growth and very few flowers. They want warmth, light, air, and substantial food, and, as a rule, should be under glass the whole

year round. Some half-dozen species, of which *Opuntia Rafinesquiana* is an example, may be planted on the open rockery to run the race with other hardy plants; but the situation must be dry and warm, and lodgment of water in winter must be carefully guarded against.

The following are the best of the cactus family for an amateur's garden:—*Mammillaria applanata, M. gracilis, M. caput-medusa, M. decipiens, Echinocactus Simpsoni, Cereus grandiflora, C. flagilliformis, Echinocactus pectinatus, Phyllocactus Ackermanni, P. anguliger, Opuntia monacantha, O. curassavica.* With these by all means place a Stapelia, which loves a warm window and judicious neglect.



GENTIANELLA.

GENTIANELLA.

Gentiana acaulis.

BLUE flowers are the least plentiful, and the philosophers tell us the reason why. All flowers, they say, were at first green; from this they diverged to yellow and white; their next advance was to shades of red. Their triumphant colour—or, say, their final stage in chromatic evolution—is blue. If we accept the hypothesis—for theory it is not—we must regard the gentians as incapable of further change in respect of colour; they have passed through all the prescribed phases, and having reached the goal, may rest and be thankful, while myriads of flowers in the earlier stages are still slowly fighting their way to the "blue ribbon" of the turf amidst which they sparkle and glow.

Gentians rank amongst the noblest of Alpine flowers, and they give us tones of blue that never fail to excite surprise, no matter how familiar we may be with them. Their geographical range is certainly South European; but their head-quarters are the mountains that run east and west from Transylvania to Cape Finisterre. India, too, has its true gentians and its exacums, these last being marvels of colour—the petals intensely blue, and the stamens intensely yellow.

Conjuring is easy when you know how to do it; and so also is the growing of gentians. It is given to few to succeed, while many fail, and our business in these pages is to point out the way to success for any and every lover of these much-loved flowers. Go with us up the mountain, and you shall see them in the pastures, and in nooks amongst the rocks, where they are exposed to the fullest light, and are frequently bathed in mountain moisture. You will never see them in a dry soil; you will never see them in such shaded hollows as the ferns creep into; and you will not often see them where keen breezes prevail. They like sheltered nooks, open to all the light of heaven and to the kindlier airs of the mountain; and their roots must have constant supplies of moisture, or the plants will surely fade away. These conditions may all be secured in gardens; and as a matter of fact, all the gentians are well grown in gardens by the few—it is with no pleasure we say the very few—who know how to do it.

The gentianella (*Gentiana acaulis*) is one of the easiest to manage as a garden plant, but is useless on a very dry soil. A deep moist loam will suit it well, and a surfacing of stones seems always to its taste; in fact, a stony soil, deep and moist, will suit this and many more of the gentian

family. We have seen this flower employed with excellent effect as an edging, its compact tufts of deep green leaves rendering it a quite respectable plant. Its usual place is the rockery, for which it is so well adapted that if only a score of rock plants are wanted, the gentianella should be one of them. The custom of planting little mites of plants we shall not object to, because the planter must have freedom of action when the purse is appealed to; but we are bound to say that a small tuft of this beauty is never sufficient for its vindication as the perfection of a rock plant. A few large patches or carpets are required, and it is easy to obtain them by sowing the seeds every year in pans in a frame, and nursing the young plants carefully, remembering also that they are perfectly hardy, and are more in need of protection against drought than against frost or wind or sun.

The spring gentian, or *Gentiana verna,* is the proper companion to the gentianella. It will generally thrive in the same soil, and both will sometimes display a vagrant quality in spreading from the comfortable bed prepared for them to the adjoining gravel-walk, in which, if allowed, they will run riot, as if to show how they love to be in contact with stones. The vernal gentian, however, needs a moist, sandy soil, and it is an advantage if smallish pieces of sandstone are mixed with it; but moisture is before all things important, the sure result of dryness at the roots during May and June being the death of the plants. In a soil they like they root deeply, and the stones on the surface check evaporation and help to sustain the plant by the retention of moisture.

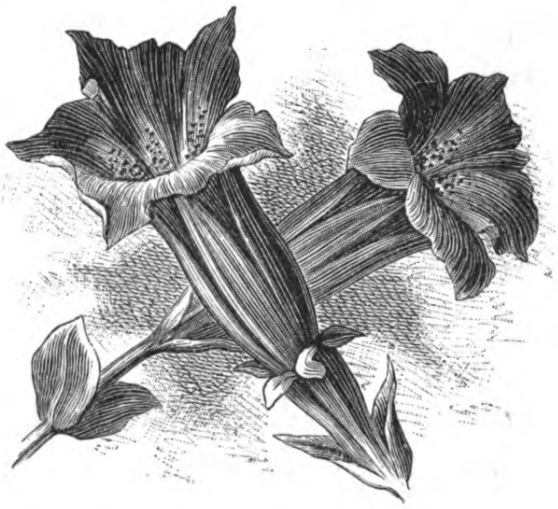
The Bavarian gentian (*G. Bavarica*) is like the vernal gentian, but has fewer leaves, and the flower-stems are

thickly clothed with a leafy setting for its brilliant blue flowers. This requires a boggy soil, and in making a bed for it, spongy peat should be selected.

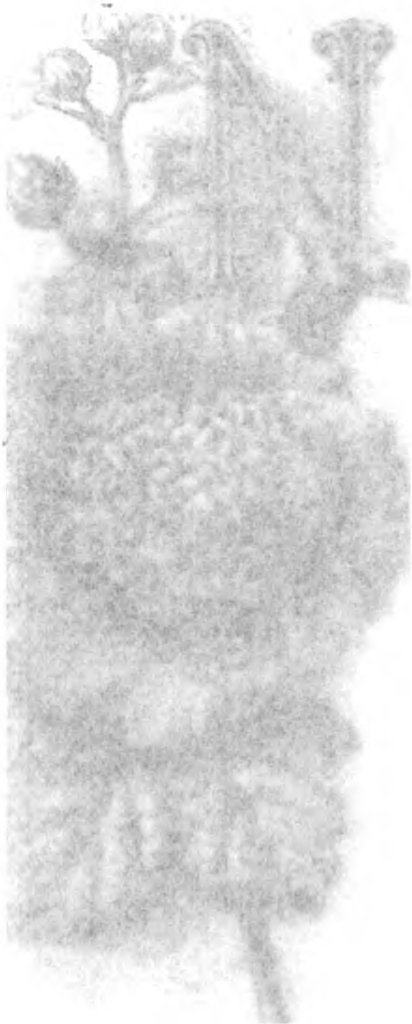
The swallowwort gentian (*G. asclepiadea*) is a free-growing, herbaceous plant, bearing blue or white flowers on long leafy sprays. It will thrive in a moist loam or peat, and appears always to be happiest when slightly shaded.

The crested gentian (*G. septemfida*) is a very fine plant, of moderate growth; the flowers are set in clusters, the colours being blue and white within, and greenish-brown without, while the alternate petals are finely fringed. This gentian requires moist, sandy peat.

The easiest mode of increasing gentians is to divide the roots, but this should never be done until the plants have spread in large patches, for it is difficult to keep small pieces alive. The three that have first place in our list afford seed in plenty, and to raise a stock of plants is at once a simple and entertaining business.



GIANT BALSAM.



GIANT BALSAM.

Impatiens glandulifera.

"NOLI ME TANGERE" are brave words for a shield or banner, but with the lovers of fun in ancient Rome it was an expression of irony, and had reference to temper rather than courage, or to a calamity of the nose rather than to stoutness of heart. In later days these words had a more solemn signification in connection with pictures in Christian churches illustrative of a moving episode in the New Testament story. When the balsam was first called "Touch-me-not" it would be hard to say, but the name reaches far back in the usage of gardens.

It is a question if any balsam can be considered a native of Britain. We have, however, two British species in the books. They are

GIANT BALSAM.

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Impatiens noli me tangere, the yellow touch-me-not, found in Northern England and Wales, but not in Scotland or Ireland; and the coppery touch-me-not (*I. fulva*), to be found only in a few places near rivers in the county of Surrey. The giant balsam, rising to the height of a man, with coarse but somewhat noble herbage and handsome purple or rosy flowers, is *Impatiens glandulifera,* so called because of the glands at the base of the serratures; it is a native of Northern India.

It is easy to demonstrate the appropriateness of the familiar name of this plant, and any kind of balsam will serve the purpose. When the seed-pod is ripe, a touch causes it to explode and scatter the seed far and wide. Nature has various ways of distributing the seeds of plants: some are furnished with wings, and fly to new pastures; some attach themselves to the animals that browse amongst them, while others are swallowed with herbage as food, but resist the action of the digestive organs. There are many that are discharged by the plants into space, such as those of the violet, the squirting cucumber, and the balsam.

It is common to see in half-neglected gardens great masses of the three balsams mentioned above, the consequence of the freedom with which the plants scatter their seeds from year to year. It often happens that the yellow and the purple get mixed together, and a difficulty arises as to their identification. It may be useful, therefore, to the reader if we briefly describe each so far as regards their distinctive characters.

The yellow balsam grows one to two feet high; the stems are swollen at the nodes, the leaves are pale green, toothed, flaccid; the perfect flowers grow on axillary stems,

singly or in pairs, the hooded sepal ending in a long spur, which is bent back upon the flower. It is a curious fact that these flowers, which are so particularly noticeable, are infertile; the seeds are produced by minute, imperfect flowers that are seldom noticed by anybody.

The copper or orange-coloured balsam resembles the yellow, except that the flowers are of a deeper colour, spotted with reddish-brown, and the spur is very closely bent back, and slightly notched at the extremity.

The glandular balsam rises to six, eight, or even twelve feet, and is of coarse though noble growth in a rich soil when aided by a rainy season. In a dry season it makes a good growth, and scatters seed freely; but it is evidently a rainy-climate plant, and makes a grand appearance in the autumn following upon a wet summer. The leaves are three to five inches long, ovate, sharply serrated, the serratures at the base being glandular. The flowers appear in clusters of three or more, and many of these clusters being closely associated, and all arising from axils of leaves, constitute a large leafy corymb or panicle. The flowers are large, and of various shades of purple; the seed-vessels, when ripe, burst on the slightest touch with much force, and the seed is sent flying in all directions to a considerable distance from the parent plant.

From the interesting family of balsams our gardens have derived a few of their choicest treasures. The very useful *Balsaminea hortensis*, which is *the* balsam of the flower garden, we have spoken of. But we should now mention two that are less known, but quite worthy of a place in our budget.

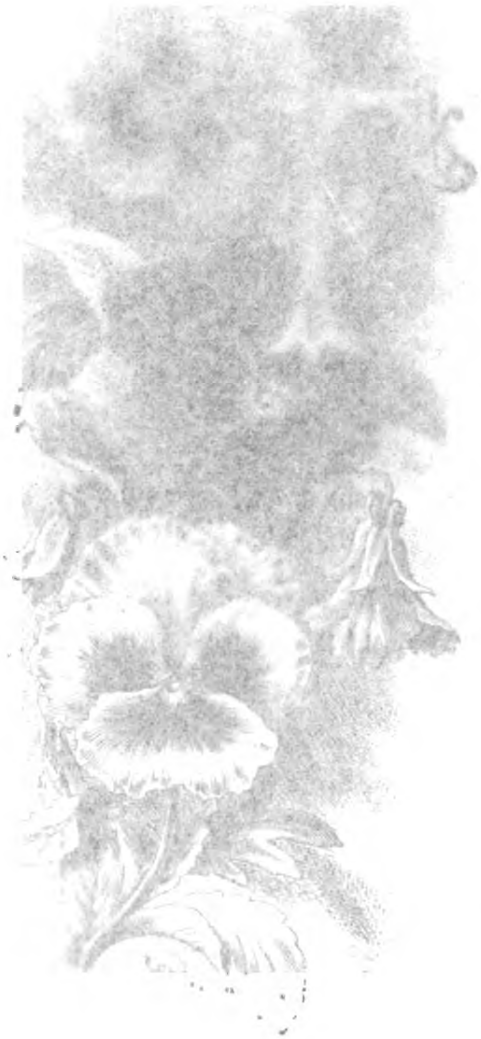
Hooker's balsam (*Impatiens Hookeriana*) is a native of Ceylon, requiring stove culture to insure a display of its

curious flowers. These are of large size, white, with a few red stripes; the spur is long and stout, and curved in a half-circle when the flower is mature, but when in bud, it forms beneath the bud a large circle, like a big letter **O**.

Mrs. Jerdon's balsam (*Impatiens Jerdoniæ*) is a beautiful curiosity, native of the Neilgherries, requiring warm greenhouse cultivation. The stems are almost tuberous, and in any case noticeable for their swollen appearance. The leaves appear only on the upper part of the gouty stems; they are ovate, and at their junction with the petiole there are two or three purple glands. The flowers are brilliant red and yellow, with a very short spur.

PANSIES.

THE PA[illegible]



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PANSIES.

THE PANSY.

Viola tricolor.

FLORISTS who make a speciality of pansies will not, owing to their colour, approve of the specimens set before us in the plate. It is by no accident that we disappoint the florist of the model flowers he would like to see portrayed, but of set purpose and serious intention. It would be poor policy in such a work as this to set forth floral models, for our business is to figure and describe familiar flowers. These pansies have been selected from a garden border as samples of the general average; such flowers as the great world loves, and, while loving them, entertains no disrespect for the more technically perfect flowers of the florist, but recognises the broad truth that in what may be termed nature's imperfections there are beauties that

the products of human skill do not reveal. The florist's double rose is a glorious thing, but the "canker of the hedge" has charms that the exhibition roses give no hint of; indeed, when a "show-rose" shows an "eye" it is condemned, and it is the eye or yellow centre of the gauzy-textured "sweet wild-rose" that, as compared with garden roses, gives it a peculiarly distinct and delightful character. A rose with an eye is an awful thing, and a pansy with rough petals and blotches put on the "wrong way" is not less awful; but, for all that, it is one of the familiar flowers which the world will not willingly let die.

Pansies may be described as hardy plants that will grow anywhere and in any kind of soil. The humblest cottager can grow pansies, and not a few cottagers are pansy fanciers. Still, it cannot be said with any approach to truth that the pansy can be grown anywhere under a great variety of conditions. As a matter of fact, it is a somewhat fastidious flower, but as easy to manage as any when the conditions are suitable. It requires a deep moist sandy soil. In a dry starving land it will scarcely live, but a real sandy loam suits it to a nicety. It is comparatively useless as a town flower, and is certainly one of the very worst of London flowers. Country air it likes, but that is not all. In the east of England it does not thrive as it does in the west, and in the south it is quite poor as compared with its free growth and exceeding beauty in the north. The reader possibly perceives the secret of success in the cultivation of the pansy. It likes pure air and humidity.

From a horticultural journal we learn that the annual rainfall in London averages twenty-four inches, in Bath twenty-nine inches, in Ayr, which is near Paisley, forty-

four inches. If other comparisons are made between what may be called pansy and non-pansy districts, it will be found that relative humidity goes far to explain the difference. Some people find delight in making soft showers by means of the water-engine in the flower garden. Some plants are benefited thereby and some are not. The roses and the pansies may all the summer long be gratified with a morning and evening shower, to their advantage; the geraniums, petunias, mesembryanthemums, and portulacas will do very well without it.

The routine cultivation of the pansy is quite simple, although in matters of detail there is much to be thought of in connection with the higher culture of the flower. In any and every case it is of the first importance to be for ever producing young plants. The easiest way to do it is to sow seed in pans filled with light rich soil, and keep the pans in a cold frame until the seed has started. Pansy seed may be sown at any time except in the depth of winter, and the very best time is immediately on its becoming fully ripe. The named varieties are grown from cuttings, and those may be easily struck in spring and summer in a cold frame, but there is one golden rule to be observed to insure success. The cuttings must be made from young shoots; the old shoots will strike, but they never make fine plants. To obtain a stock very easily for filling a bed, it is sufficient to divide the old plants into as many pieces as possible, taking care that each piece has a few roots. But this is a slovenly way; it is better to sow seeds or strike proper cuttings. However, the dividing process in careful hands answers fairly well, and if carried out during moist, kindly weather gives but little trouble, and every scrap will soon make a plant.

As remarked above, a sandy loam is the proper soil for the pansy. This may be enriched with leaf-mould and rotten hotbed manure for the production of fine flowers, but a soil rank with fresh manure is not fit for pansies; they require a deep moist roothold, but will never thrive in contact with powerful stimulants. The necessity for humidity is all-important; but mere damp is as injurious to pansies as to other flowers, and therefore good drainage is essential both for plants in beds and plants in pots. The show kinds and the best of the fancy pansies make beautiful pot-plants when carefully cultivated, and there is no flower more likely to gratify a painstaking amateur who has no ambition to become a competing florist than the fancy pansy grown in pots as a frame plant. The frame secures for the fancy pansy, under suitable management, the moist and comparatively pure air it so much loves.

LOVE-LIES-BLEEDING.

LOVE-LIES-BLEEDING.

Amaranthus caudatus.

THE amaranth is a fact and a fancy. It is the flower of immortality, the flower of love, the flower of fame, and the flower that accompanies Hope until she is ruthlessly swallowed by Despair. "Love-lies-bleeding" is a name needing no explanation to one who has seen the flower, for often the pendent inflorescence, of a brilliant crimson colour, may be likened to streams of blood; but as a figurative expression it might with equal propriety be called "Hate-lies-bleeding." Amaranthus is the unfading flower, *amar* giving the adjective to the noun. By a confusion common in the history of words, *amar* has been changed to *amor*, and thus the unfading flower becomes the flower of love: the outward characters explain the rest.

The mythical or fanciful part of the history of this flower admits us to the region of poesy, and we find the amaranth to be a flower of the gods. Better for us at present, perhaps, is the adoption of the flower by Milton for crowning the celestial beings that bow before the throne of the Most High, in "Paradise Lost"—

> "To the ground,
> With solemn adoration, down they cast
> Their crowns, inwove with amarant and gold:—
> Immortal amarant, a flower which once
> In Paradise, fast by the tree of life,
> Began to bloom; but soon for man's offence
> To heaven removed, where first it grew, there grows
> And flowers aloft, shading the fount of life,
> But where the river of bliss through midst of heaven
> Rolls o'er Elysian flowers her amber stream;
> With these that never fade, the spirits elect
> Bind their resplendent locks inwreathed with beams.
> Now in loose garlands thick thrown off, the bright
> Pavement, that like a sea of jasper shone,
> Impurpled with celestial roses, smiled."

It is fortunate for Milton that jasper has a great range of colours. It is best known in the world of art by the Wedgwood ware, so called; but it will scarcely be considered a mistake on our part to say that jasper has never been seen of the colour of any amaranth known in gardens.

Shelley, in "Rosalind and Helen," thus introduces our flower:—

> "Whose sad inhabitants each year would come,
> With willing steps climbing that rugged height,
> And hang long locks of hair, and garlands bound
> With amaranth flowers, which, in the clime's despite,
> Filled the frore air with unaccustom'd light.
> Such flowers as in the wintry memory bloom
> Of one friend left, adorned that frozen tomb."

It is a sad drop from the heights to which the poets carry us to the uncomfortable suggestions of the old French name for the flower, "Discipline des religieuses"—the nun's whipping-rope. Another French name takes the "amor" into consideration, for it is "Fleur de jalousie." The geographical enterprise of the Spanish and Portuguese is reflected in the name—"Papagayo"—it bears in the Peninsula; it is there the parrot flower, though quite unlike a parrot, except in its brilliant colour.

All the amaranths are annuals, and all that are known are worth growing. Three of the number are of considerable importance to amateurs who require flowers in plenty at the least possible expense, and needing but very little exercise of horticultural skill. They comprise the one here figured, *Amaranthus caudatus,* which will grow in any soil, but attains to a splendid character when located in a rich, deep, moist loam. It is sufficient to sow the seed on the border where it is to remain; but for a well-managed garden, the proper practice is to sow in pans or pots, and raise the plants in a frame, and plant them out when large enough. There is a yellow-flowered variety, and there is one with whitish flowers; but the common crimson is the most effective.

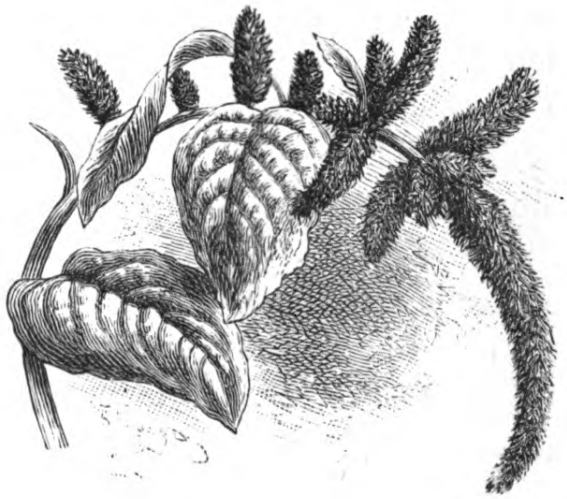
Prince's feather is a replica of the foregoing, but with upright instead of pendent inflorescence. Its book name is *Amaranthus hypochondriacus.* It is more hardy, grows to greater size, and lasts longer in flower than love-lies-bleeding; but though a fine plant, it must be placed second in order of merit as regards distinctive beauty.

A showy amaranthus is *A. speciosus,* a native of Nepaul, growing three to four feet high, with reddish-purple leaves, and crimson flowers in dense whorls. If sown in

the open border in April, it makes a fine plant, but it is better to sow in March, in a warm house or frame, to insure a longer season of growth and a fuller development.

The globe amaranth, the cockscomb, and the pyramidal celosia are true amaranths, the last-named being one of the most lovely plants of its class in cultivation. It is only an annual, and requires the warmth of the stove; but its feathery plumes of many colours are unequalled for distinctness and lustre. Its book name is *Celosia pyramidalis*.

How many of the amaranths are edible we cannot with precision say. We have grown *A. polygonoides* in a frame for use as spinach, and found it excellent. Another species, *A. tristis*, is largely used as food in India; and the young stems of *A. oleraceus* are in the same country eaten as a substitute for asparagus.



JAPANESE ANEMONE.

JAPANESE ANEMONE.

Anemone Japonica.

THE white anemone represented in the plate is variously known as the vine-leaved, or *Anemone vitifolia,* and by a name that brings it nearer to us, as *Honorine Jobert.* It should be understood at the outset that it is the white form of *Anemone Japonica,* of which we have a purplish-red form that is regarded as the specific type. As a matter of fact, we know not which of the two should be regarded as the specific type; nor does it matter. If we ask the evolutionists to help us, they will be bound to say that the white is the original, the "real Simon Pure."

The vine-leaved anemone is a different plant, not so good as the one before us, but a near relative, and in all

JAPANESE ANEMONE.

probability a form of it, thus making excuse for the confusion that has arisen as to their supposed identity. *Anemone vitifolia* is a native of Nepal, in the shady valleys of which it is plentiful, and though not equal to our present subject as a garden flower, it is a delicate beauty, flowering earlier than the Japanese plant, and being less in size and less pure in its whiteness; it is, in fact, tinged with purple, red, or bronze, as influenced by soil and various degrees of exposure. This plant is figured in the *Botanical Magazine* (t. 3,376), from plants grown by Mr. Don, at Knyppersley Gardens, Congleton; but we owe the introduction of *A. vitifolia* to Dr. Wallich, who may be styled the father of Indian botany. In describing it he says: "It grows in all the forests of the great valley and the surrounding mountains, delighting in the most shady, retired, and moist situations in the vicinity of rills and torrents." The figure in the *Botanical Register* (t. 1,385) shows a larger flower and stouter growth than the *B. M.* figure, and will justify our regarding the vine-leaved anemone as the Nepal form of our *Anemone Japonica.*

To Siebold's "Flora Japonica" we are indebted for the first description of this anemone, but to our own Robert Fortune for the plant itself. It was figured in the *Botanical Magazine,* in 1847 (t. 4,341), by Mr. W. H. Fitch, the red form alone being then known, and the figure showing it in higher colour than we have ever seen in the flower itself, although familiar with it from its first introduction. Sir W. J. Hooker, in describing it, said: "I cannot but fear that what have been transmitted to our gardens exhibit strong marks of the flowers being double, which may account for the fact mentioned by Siebold of the seeds rarely coming to perfection." The "fear" entertained

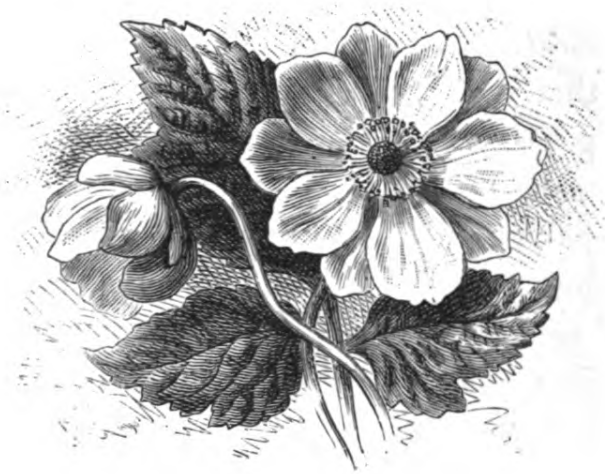
by the celebrated botanist it has been our fortune (or misfortune) to have realised, for a few years since, when botanising in North Wales with Mr. Alfred Slocombe, we met with *Anemone Japonica* in a garden at Conway in a completely double state. We must add that, having lost their central cluster of golden stamens, the double flowers were less beautiful than the single or semi-double examples common to our gardens.

The red form, then, was the one originally introduced. But the vine-leaved anemone, an older plant, served well as a complement to it, and but for an accident might by this time have acquired popularity as its proper companion in the hardy garden. The accident was the appearance in the garden of M. Jobert, at Verdun-sur-Meuse, as the product of the red-flowered anemone, of this lovely white form, which, in commemoration of its origin, was named *Honorine Jobert.* It is now, we hope, made evident to the reader that the name last cited is admissible for literary purposes, while the name often adopted for our subject, *Anemone vitifolia,* is inadmissible, because it represents the Nepal, and not the Japanese, form of the anemone. We have thus justified our head-line, this "autumnal white lily," as it has been playfully designated, being the white-flowering, and probably primal, form of *Anemone Japonica,* which "righted itself" by sporting from the red form in M. Jobert's garden.

The reader will not ask about the sowing of the seeds, because the story tells of the rarity of their ripening in this country, which Sir William Hooker unwisely attributed to the tendency of the red form to doubling. It must be understood that to obtain seeds is not a matter of routine, and for all ordinary purposes it may be said that

the plant does not produce seeds. However, that is of small consequence, because to divide the plants is an easy matter, and, moreover, every bit of the root will make a plant with skilful management.

The words of Wallich on the growth of the Nepal plant give the key to the cultivation of this beauty from Japan. It loves partial shade and moisture. For hot, dry, starving situations it is not well adapted; but, putting aside all extreme conditions, we may safely say that the Japanese anemone will grow anywhere.



SINGLE DAHLIA.

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SINGLE DAHLIA.

Dahlia variabilis.

FASHION brings into operation principles that are at once shallow, subtle, and complex. Previous to the year 1880 single dahlias were not in high repute, and, in fact, were scarcely known. Then, like some sky-rockets properly made and effectually lighted, they soared upwards, shedding new light on society, and, by a false glitter, filling the sky with imitation stars. Well, "It is an ill wind," &c. The suddenly-acquired popularity of the single dahlias drew attention to the double dahlias, which at that time were under a cloud, and immediate results were the formation of the National Dahlia Society, and the holding of a series of annual exhibitions in the Crystal Palace, Sydenham, for the advancement, not of

the doubles only, but for all kinds of dahlias, including the pompons and lilliputians, that are so signally serviceable for decorative purposes. Thus the single dahlias have accomplished some good in their new career, and while so employed have made a triumph of another kind, and one considered to be on the verge of the impossible: they have given society a new pleasure!

The dahlia was introduced from Mexico in 1789, and was named after Dahl, the Swedish botanist. There happens, however, to be a genus of fabaceous plants named Dalea, and, to prevent confusion, the new arrival from Mexico was renamed Georgina. But Dahl prevailed; the confusion that was feared never happened, and the disused name Georgina is still at the service of the botanists when events shall make excuse for using it. The first species of dahlia introduced was that called *superflua,* which does not mean that the plant is, in colloquial terms, "superfluous," but that it belongs to the Linnæan section of composites called *Syngenesia superflua,* in which the florets of the exterior differ from those of the centre of the flower. This same *Dahlia superflua* has been renamed *variabilis* and *crocata,* the first of these two being now generally adopted as indicating the variable nature of the plant to which we are indebted for our magnificent series of garden dahlias.

There is no risk incurred in the broad statement that the dahlia is entitled to stand in the very front rank of garden flowers. There is nothing easier to grow; there is nothing to which it may be properly compared that so rarely fails to satisfy; and there is absolutely nothing that could take its place for the same season, were it blotted out of existence. A plantation of dahlias will keep flowering

most abundantly for nearly four months; and even in the middle of November they will still be bright and full of flower, and will so continue until a decided frost occurs, which, of course, will effectually close their gay career.

To grow dahlias for exhibition demands skill and the enthusiasm that delights in conquering difficulties. To grow dahlias for delight is such an easy matter, that it is enough to plant the roots in April or May, and do nothing more but keep down weeds and wait patiently for mountains of flowers. The dahlia is, in fact, a flower for everybody, and any soil or situation will produce dahlias; for dahlias share with chrysanthemums the honour of brightening back yards in smoky towns, these two beauties being the flowers of all flowers in smokeland. To this it should be added that in a rich soil—and it can scarcely be too rich—and in country air, dahlias attain to a perfection that is not possible under less favourable conditions; and thus we present the two sides of dahlia culture, with the happy conviction that they are both bright sides, and differ but in degrees of brightness.

The routine of dahlia culture consists in starting the roots into growth in heat in March, and striking cuttings of the shoots produced to provide plants for planting out at the end of May. They should be put at from two and a half to five feet apart, according to the relative vigour of the varieties, the grand show class requiring a space of at least four to five feet from plant to plant. They must be well supported with stakes against the wind, or they must be made to support themselves by a clever twist that snaps but does not break the stem, and compels them to sit on the ground, as it were, and form spreading bush-like instead of tree-like masses. When in autumn frost has

blackened the tops, the roots are lifted and stored in dry earth in any shed or cellar, in the same way as potatoes, for they are as hardy as potatoes, and need no more care for their safe keeping.

Since the single dahlias have become popular, many persons have taken to raise dahlias from seeds, a practice that was left entirely to the florists previously. This is a very simple proceeding. The seeds are sown in light, rich soil, in February, and the young plants are raised on a hot-bed or in a warm plant-house, and have careful nursing to be stout and strong for planting out in June. Dahlias grow slowly for some time after being planted, and all the slugs and snails in the parish will scent them, and taste them if allowed. One settled mode of protecting them is to provide a crop of lettuces on the ground, for the vermin will feast on these and leave the dahlias alone, and in due time the lettuces, having served their purpose, may be taken away.

MARÉCHAL NIEL ROSE.

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MARECHAL NIEL ROSE

MARÉCHAL NIEL ROSE.

Maréchal Niel.

MARÉCHAL NIEL, who conquered the Malakoff at Sebastopol in 1855, helped to gain the Battle of Solferino in 1859, and filled the post of Minister of War in the French Government in 1867, is commemorated in the name of the finest of all yellow roses, which very nearly satisfies the immense requirements of one that may be characterised as the best of all the roses in the world. When well grown, and in perfection of flower, it is not within the power of the most learned rosarian to name a better variety; but that does not settle the question. One fault it has, and the only one we shall dare to name: it is not sufficiently hardy, and only in specially favoured places will it give complete satisfaction without the aid of glass. This point must be kept

in mind by the amateur. It is not here declared that glass is absolutely needful, for in truth we know of hundreds of gardens in which it is not only prosperous, but profitable, on open walls—as, for example, the famous Calcot Gardens, near Reading, where flowers are cut in great plenty for Covent Garden Market at a time when the value of each flower is represented by a silver coin, and not many are required to touch gold. But the fact remains, that though in some districts hardy enough, yet in many places, even in the south of England, the Maréchal Niel rose requires the help of glass.

The golden Maréchal was raised by M. Pradel, a great rose-grower of Montaubon, and first appeared in this country in the year 1864. To this gentleman the rose world is indebted for many exhibition roses—as, for example, Duc de Nassau, Madame Ristori, Vicomtesse de Cazes, and others.

The Maréchal Niel rose is certainly tinctured with the blood of the famous Gloire de Dijon, raised by M. Jacotot, of Dijon, and made known in this country in 1853. It is less hardy than the Dijon splendour, but of similar growth, being vigorous to a wonder, noble in leafage as well as in flower, profuse in its liberality of bloom, of fine form, delightfully sweet, and though varying from creamy primrose to something like an orange, as influenced by circumstances, having for its proper colour a rich buttercup yellow, a delight always, even in a ribbon for a brunette.

For complete success in the cultivation of this rose a spacious house and a good border are necessary. It must have free warren in a rich deep soil for its roots to forage, and plenty of room to run next the glass, with free ventila-

tion at all times, and sufficient heat in winter to exclude frost. It will submit to moderate forcing for an early bloom; but the cultivator must be cautious to use always the least possible amount of artificial heat for the purpose in view, for there are no roses, whether hardy or tender, that can endure a high temperature, except it be in summer, when growth is vigorous and air can be admitted freely. The result of injudicious forcing must always be a plague of insects first, and mildew to follow, with a bloom wanting in quality, and more especially wanting in colour.

The choice of the roots for any rose is always a matter of importance. This fine variety, in common with many others, thrives on its own roots; therefore when raised from cuttings is likely to prosper. But it does not thrive on the generally useful Manetti stock that is so largely employed in the propagation of useful garden roses. In all rose gardens the practice of the propagator is to bud Maréchal Niel on the English briar; and it appears to be well situated for healthy growth on briar stocks of three to five feet high. The amateur is, therefore, warned against experiments that may end in disappointment. There may be many suitable stocks for Maréchal Niel in addition to the English briar, but we do not know of them. The reader who is disposed to find a better may, for a first trial, try Mr. Bennett's grand rose Her Majesty, for that appears adapted to serve as a stock for the most vigorous-growing roses, such as the Maréchal, Gloire de Dijon, and the race of vigorous hybrid Bourbon roses.

The grave question of the pruning comes in here. In a few words we shall be enabled to combine a general with a particular lesson. In the first place, then, those who do not know exactly how to prune should not prune at all. This

applies to fruit trees, roses, and to trees and shrubs of all kinds. Generally speaking, fruit trees bear earlier and more abundantly when left entirely unpruned, for Nature is generous, and prefers her own modes of management. In the next place, when pruning is to be done, the manner of the growth should give the key to the method. The more vigorous the growth the less severe must be the pruning, for it is evident that long rods are required, and if we shorten them with a bold hand we may promote wood growth, and have no flowers. But roses that make but a moderate growth may be cut in rather closely. It suits Maréchal Niel, and Gloire de Dijon, and all other vigorous-growing roses, to be left their full length; but when any long rod becomes exhausted, it should be cut clean out from the base, and its place will soon be supplied with a vigorous young cane, which will, if allowed, accomplish all that is required of it.

TACSONIA.

TACSONIA.

TACSONIA.

Tacsonia Van Volxemi.

PASSION-FLOWERS and tacsonias are so nearly related, that it is for botanical rather than horticultural purposes that they are separated, as will be shown in the Synopsis, where technical matters admit of treatment more conveniently than here. It may be stated at once that the plant represented by the accompanying plate is the finest climber known to cultivation for a spacious conservatory or cool plant-house. A temperature not lower than 40° will keep it safely through the winter, and from May to November the natural temperature suffices; or, in other words, it needs no aid from artificial heat except during the four or five winter months, and then only sufficient to keep it safe from frost. It is of no use to plant this rampant grower

in a small house; and to attempt to grow it in a pot is about as unreasonable as to attempt to raise eagles in canary cages.

There are times when "comparisons are odious;" in the present case they might be ridiculous, for there is no plant at our command that could be put before, or even beside, this magnificent beauty; for even the lapageria, lovely as it is, becomes nothing when we have seen *Tacsonia Van Volxemi* in a thorough state of prosperity in a great conservatory, where it is quite at home.

All the passion-flowers and tacsonias are natives of South America; and although a certain number are strictly tropical, not a few of the most beautiful are met with in temperate regions. M. Van Volxem, a Belgian amateur, met with this plant in a garden at Bogota, whence it was taken to Belgium in the year 1858, and very soon thereafter made its way into many European gardens. It has been found also in the Quindiu Andes, at high altitudes. It was probably first flowered in this country in the Exeter Nurseries of Messrs. Lucombe, Pince, and Co., for Sir Joseph Hooker was indebted to that firm for the first plant presented to the Royal Gardens, Kew, from which the first figure published in this country was prepared, to make known the wonder unto many (*B. M.*, 5,571).

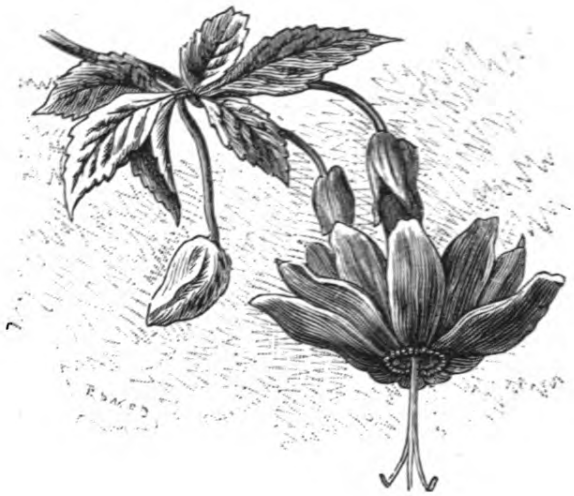
Its comparative hardiness is no matter for surprise, for M. Van Volxem reports that it resists a temperature of freezing-point in its native country; but it should never be exposed to a condition so severe in cultivation, for as a matter of fact, no plant is so hardy under cultivation as when living its own life and managing its own affairs. The grandest example that we have seen of this plant is in a great conservatory used for a store-room for giant

tree-ferns, palms, and cycads, in the gardens of Eastnor Castle, the residence of Lady Henry Somerset. The plant clothes the whole of the roof structure, and from the rafters that support it sends forth innumerable pendent garlands of the richest leafage, abundantly adorned with the glowing flowers. Mr. William Coleman, the talented head-gardener there, may boast that from a plant a foot long he has developed the grandest flowering climber in the kingdom.

The first thing to be done for this and any other tacsonia is to prepare for the roots a capacious border of mellow turfy loam; the drainage must be perfect, the soil must be deep. The next business will be to put in the plant. We might say "plants," but, generally speaking, one is enough for a house of great size. The best time for planting is in spring, before growth commences, and the planting should be done with care, to insure the spreading out of the roots and their being covered with three or four inches of fine soil. From the time of planting water must be given occasionally, but in moderation, for until the roots have become active frequent watering will prove injurious. But when in free growth, the plant will need an abundant supply; and when two or three years have passed, the border should be annually refreshed with a top-dressing of fresh soil, the upper crust of old soil being removed to make room for it.

The propagation of tacsonias and the like does not come within the range of an amateur's operations; but this essay would be incomplete were the subject excluded from notice. Tacsonias are usually raised from cuttings of young shoots, which root quickly in a propagating house, or on a hotbed that is in good working order. The cuttings should

be about six inches in length, and should be potted singly in five-inch pots, with sufficient drainage, and a soil of equal parts loam and sand. They must not be shifted from these to larger pots, for the object is to secure strong young plants, with a good ball of roots to begin life with when planted out.



PICOTEES.

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PICOTEE.

Dianthus caryophyllus.

PICOTEES differ from carnations in having the colour concentrated on the outer edge of the petals, whereas in carnations the colour is disposed in bands and blotches longitudinally. It is a question with the experts which is the oldest form of the flower, and that question is one of very great interest both to the florist and the student of the laws of evolution. Mr. E. S. Dodwell, a man of extensive knowledge, and a most successful cultivator of these flowers, holds firmly to the opinion that in the development of the flower the picotee appeared in advance of the flaked carnation. His theory is that the self-coloured flower changed in the first instance to an edged flower, and that this became a carnation by the spreading of the colour from the edge towards the centre. We have held, and

PICOTEES.

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still hold, that the carnation produced the picotee, which is the very opposite of the doctrine held by the gentleman named above. Our conviction rests on no hypothesis, but on recorded facts; still, as there is no finality in such matters, we leave the question to the further consideration of the reader.

Considered etymologically, a picotee is a spotted flower; and when a number of seedlings flowering for the first time are under inspection, it will be observed that the term is quite appropriate, for a certain number show a disposition in the colours to pass inward from the edge in dots and dashes. In Parkinson's "Paradisus," page 313, the figure of "Master Tuggie, his Princesse," will display a showy flower, with frilled edges and conspicuous spots, in respect of which the author describes it as "very beautiful, and exceedingly delightsome." The truth must be told that this sort of thing is not now allowed. A picotee must no longer be spotted, but have a distinct and sharp marginal line of colour, the breadth of which will determine whether it is a light-edged or heavy-edged flower: those that are most prized having a very fine line of colour, which entitles them to be designated wire-edged.

The rules that now determine the degrees of merit in these flowers may be said to date from July 25, 1850, when a grand trial exhibition of carnations and picotees was held in the Royal Nurseries, Slough, and nearly thirty stands were put up, in addition to the blooms presented for class showing. This was followed, on the 7th of August of the same year, by a similar exhibition at Derby, when there were presented thirty-six stands of six, fifteen of twelve, and upwards of a thousand single specimens. It is a curious fact that at both these brilliant encounters the

principal first prizes were carried off by Mr. Charles Turner and Mr. E. S. Dodwell, the first representing the commercial cultivators, the second the amateurs. The fact seems to prove the rarity of first-class skill in handling these flowers, for with any approach to equality of power in the competitions the prizes must have been more freely divided.

The National Carnation and Picotee Society, founded in 1851, has established on a firm basis the standard of technical merit in these flowers, while leaving a liberal margin for the introduction of new forms, should they arise, as also for new methods of displaying them, for it is only in certain classes that strict compliance with fixed rules is required. The picotee class has acquired special and peculiar interest, from the introduction of flowers with a yellow ground and sharply-defined and brightly-coloured edges. It is no new thing to see yellow in these flowers, for Parkinson rejoiced in the "yelow or orenge-tawny gilloflower." But the yellow-ground picotee, as now known, is a modern creation, for which we are indebted to Mr. Richard Smith, of Witney, Oxon., who, in the year 1858, in the exhibition at Moira, took all the prizes offered for flowers of this class. He had refashioned it by crossing and selecting, and he had his reward. Among the finest yellow-ground picotees seen by the present generation of florists was one shown by Mr. James Douglas, of the gardens at Great Gearies, Ilford, in the exhibition of the National Society, 1886. It bears the name of *Annie Douglas,* who should be proud of her own and her father's flower.

It may be an advantage to amateur cultivators of these flowers to remark that they are less hardy than carnations,

and require more care to take them through the winter. The finer kinds should be potted in the autumn, and kept in a frame or airy greenhouse until the spring, when they may be planted out, or flowered in pots, at discretion. For the general potting-up of rooted layers, the favourite date with growers in London, and as far north as the Trent, is October 20th; beyond Trent, an earlier date is required. If potted too early, they make more growth than is desirable before winter; but if too late, the winter cripples them.

It has been urged, and it may be again urged, that carnations are most useful flowers for town gardens. The same cannot be said of picotees, and, therefore, the town amateur may be advised not to speculate in picotees until he has acquired some experience with their more hardy relatives.

TORCH LILY.

[illegible] LILY.

FAM[illegible] name [illegible] often so [illegible] as the [illegible] before [illegible] but quite [illegible] and even more [illegible] for it is [illegible] Whatever may be said for its beauty, it is certainly the most striking [illegible] seen, making a fine show in the shrubbery borders and [illegible] from the greenhouse. It [illegible] a number of [illegible] the pattern [illegible], and any [illegible] plant [illegible] increase is a [illegible] proceeding. [illegible] care [illegible] of [illegible] them in a [illegible] set in a [illegible] [illegible] of grass and trees. The [illegible]

TORCH LILY.

TORCH LILY.

Tritoma uvaria.

A FAMILIAR name is not often so obviously justified as the name of the flower before us; a less elegant but quite appropriate and even more familiar name for it is "Red-hot Poker." Whatever may be said for its beauty, it is certainly the most striking flower for its season, making a fiery glow in the shrubbery borders and a genuine conflagration in the parterre. It is scarcely a proper subject for the parterre, perhaps; in any case, to plant tritomas in masses is a bold proceeding, needing a little extra care to avoid a violation of good taste. We have used them in masses with singularly good effect in a country garden, where there were ample breadths of grass and trees. The tritomas

were in large, long beds, and mixed with them were lilies, and the outer boundary was made up with agapanthus, which, as a hardy plant, flowers at the same time as the tritoma, and, when established, flowers as freely.

The flame or torch lily will thrive in any good soil, but a deep sandy loam is certainly the best for it. Occasionally it produces seed freely, but we must confess we never took the trouble to sow any, because we could always obtain as many plants as were required by the simple process of division, which not only multiplies the stock, but insures flowering plants at once, without the necessity for nursing. It has been our rule, in dividing tritomas, agapanthuses, crinums, and other such plants, to pot the divisions in the smallest pots possible with sandy soil, and so keep them until growing freely, when, the pots being filled with roots, they may be planted out with safety. In places where the climate is genial and the soil dry, the divisions may be planted where they are to remain, for there will be but little risk of failure. These fine plants are thirsty subjects, and if it be possible to supply them with abundance of water during hot, dry, summer weather, they will repay such attention with liberal interest. But it is of the very first importance that the ground they occupy should be reasonably dry during winter. A boggy or sour situation will insure the death of many in a severe winter, but on well-drained land these plants are perfectly hardy; and if killed down in spring, as will sometimes happen, they will in due time renew themselves from the roots, if left undisturbed and kept free from encroaching plants that might spread over and injure them.

Tritomas are natives of South Africa, and members of the great order of Lilies. There are not many species, and

the few recorded are more than are wanted, if their value is to be estimated from the gardener's point of view. We begin with *T. uvaria,* as the best of the group in respect of hardiness, amplitude of dark, rigid leafage, and an abundant production of its cylindrical racemes of fiery flowers.

The varieties known as *T. glaucescens* and *T. Burchelli* have no special value as garden flowers, but will prove interesting to amateurs whose tastes range freely amongst plants. But for *T. nobilis* and for *T. grandis* a good word may be said. These are noble plants, and have a remarkably fine effect when well placed in a spacious rockery. *T. nobilis* is scarce and dear; *T. uvaria* is plentiful and cheap, and the best for all general purposes, though in character below that of *T. nobilis.*

Tritoma caulescens is a beautiful plant, with peculiar glaucous leafage and a stout stem, bearing a dense head of flowers of a fiery-red colour passing into yellow. It is strikingly distinct, and a proper adornment of a roomy rockery, where it should have a sunny situation on a well-drained sandy soil. It is hardy, but unequal to the endurance of severe conditions; therefore it is advisable to give it some protection during frosty weather.

T. carnosa is a good plant, of smallish growth, forming a series of tufts, from which rise the flower-stalks, a foot or more high, bearing crowded flowers of a rich orange-buff colour.

T. Macowani is a pretty little plant, usually regarded as requiring greenhouse cultivation, although it is probably hardy. The flowers are in a dense cluster, the tube red, the mouth yellow.

T. Rooperi is a grand plant, from British Kaffraria.

The leaves are broad, and average eighteen inches long; the flowers appear on a stout stem, and form a club-like mass, brilliantly coloured red and yellow. It is as hardy as *T. uvaria*, and flowers later.

In gardens that afford accommodation for interesting plants of robust habit many fine subjects may be associated with tritomas. Not a few of these are also lilyworts, such as asphodels, fritillarias, day lilies, funkias, or plantain lilies, phormiums, yuccas, and aspidistras. The closely-allied order of amaryllids will supply for the same purpose, crinums, alströmerias, and vallotas. For the cool plant-house the last-named order gives agaves, clivias, doryanthes, and true amaryllis, all of them having high claims on the attention of amateurs who are not wedded to the common-place in the pursuit of pleasure in the garden.

BOUVARDIA.

BOUVARDIA.

Bouvardia triphylla.

WINTER-FLOWERING greenhouse plants have been, within the past few years, considerably enriched by the introduction of improved varieties of bouvardias. They are all neat-growing and free-flowering shrubs, producing delicate tubular flowers in clusters; and, though none of them should be described as massive or showy, they are invaluable, whether as plants or as flowers, for various decorative purposes. More than this, they are particularly well suited for the greenhouse of an eclectic amateur, for they belong to a higher range in gradations of merit than many subjects that are in general favour, and they require a little more care than the generality of plants that flower in the winter season.

BOUVARDIA.

requir[illegible] more care than [illegible]
that [illegible] winter season.

Bouvardias are members of the great order of Cinchonads, and are, therefore, remarkably well connected as regards family relationships. In this order we find the trees that produce Peruvian bark, and with them such important subjects as coffee, ixora, rondeletia, manettia, gardenia, mussænda, and ipecacuanha. Of Dr. Bouvard, curator of the Botanic Garden at Paris, there is not much known; but we find in the books a treatise on the fungi of the forest of Mormal, published at Lille, but whether by the man of science to whom the genus Bouvardia is dedicated, we cannot say.

The Cinchonads agree pretty nearly in one of their requirements. When under cultivation they need more than the average warmth of the greenhouse, many of them being true stove plants, and a few requiring the hottest place in the stove. The bouvardia is an exception so far that greenhouse cultivation suffices for it; but to enjoy its beautiful flowers in winter, something approximating to stove culture must be practised. For keeping the plants in health a temperature of 35° to 45° Fahr. suffices during winter, but we prefer to get them forward for winter flowers, and to provide for them a temperature of 50° to 65°, with a rather liberal amount of atmospheric moisture, for when thus aided they bloom with delightful freedom, and there is nothing in the winter garland under glass that can surpass them.

Bouvardias may be grown from seeds and cuttings. In a garden of limited extent, propagation by cuttings alone should be practised, as it is at once certain, simple, and rapid. The cuttings should be taken from growing plants in the month of March or April, and planted firmly in sandy peat, and the process of rooting is promoted by

a kindly moist heat, say a temperature of 70°. The best soil for them is a good turfy loam, with a reasonable addition of sharp sand; but in good peat they grow freely. In any case, strong manures are rather to be avoided than used, although we must confess that we have often aided large specimens by administering weak manure water occasionally.

In the formation of specimens, the natural growth should be humoured rather than checked; but a moderate amount of stopping to promote the formation of side shoots, and to furnish the lower parts of the plants, may be advisable. Over-potting is to be guarded against, therefore there should be no shift until the pots are well filled with roots, when the next size should be used; not, as some over-hasty cultivators advocate, pots two or three sizes larger. The long rods that rise from the base indicate healthy vigour, and should not be stopped until they have attained their full length and are beginning to harden, when a moderate shortening may be performed.

To regulate the flowering time of all such plants is an easy matter. It may be reckoned that from six weeks to two months will be required from the last stopping to the time of flowering, according to the season. If they are to be allowed to flower at their own time, there should be very little stopping. But if they are required to flower at a particular time, then flowering should not be allowed in advance of that time, but should be checked by careful stopping, training, and a shift into the next size of pots when the roots need it. This practice will tend to the formation of large handsome plants, but must cease entirely six to eight weeks before the time at which it is desired they shall flower. It only remains then to leave them

alone, with no more shifting or stopping, keeping them warm enough and liberally supplied with water, with—if the pots are well filled with roots—weak liquid manure occasionally.

There are double and single bouvardias in cultivation, all of them exceedingly beautiful. A fine half-dozen for a comfortable greenhouse are: *Bridal Wreath,* white, very fragrant; *Queen of Roses,* rosy pink; *Hogarth,* rosy scarlet; *Dazzler,* full bright scarlet; *Alfred Neuner,* double white; *Jasminiflora,* white, fine for winter.

When they are to be wintered in a cool house, bouvardias may be planted in the open ground to make free growth from June to September.

AMETHYST ERYNGO.

AMETHYST ERYNGO.

AMETHYST ERYNGO.

Eryngium amethystinum.

SEASIDE botanists are well acquainted with the curious spiny leaves of the sea-holly, which attract no less by their glaucous colour than their challenge of war. When in flower the plant has a fine, daring sort of beauty, and may remind one of the story of the thistle that the invading Dane trod upon, when, by reason of his cry of pain, the plant was promoted to the banner of Scotland. This sea-holly might be called a thistle, but, as a matter of fact, it is an umbelliferous plant, where as the thistle is a true composite. The alliance of the eryngo is with the hemlocks, that of the thistle with the asters: and so an eryngo is not a thistle, but agrees in the circumstance of being armed for defence against all ordinary foes.

All the eryngos, our own seaside friend in particular, may be turned to account by drying them for winter decorations, their tough texture and very distinctive forms favouring this use of them. Whether the roots of the garden eryngos are of any economic value we cannot say; but we call to mind that the bitter roots of the British wilding have enjoyed some fame as a valuable tonic, and from the most ancient times have been made into a sweetmeat with the aid of sugar. Once upon a time the town of Colchester presented royalty with a delicate sample of candied sea-holly roots, and the sale of the article thereupon increased greatly, while, as a matter of course, many wonderful cures were effected by the confection.

Eryngium amethystinum is a native of Styria. It has been cultivated in English gardens more than two centuries, yet even now it is scarce, because perhaps it is not showy. In respect of beauty it is certainly unique. The flower-heads are not less delightful in their construction than their colour, and the leafage harmonises in a weird sort of way with the amethyst tufts that crown the plant. It is perfectly hardy, and needs no more than the most ordinary care, the best place for it being a sheltered border or a dry ledge of a spacious rockery. This and other species are increased by seeds and divisions, and for the purposes of a private garden the division of a strong plant when commencing growth in spring will be sufficient.

Other species of eryngium that an amateur of such plants will gladly secure should be named here in the interests of this kind of gardening, the adherents to which are sadly few. *E. giganteum* is a plant of strong growth and very fine proportions, producing heads of purplish blue flowers. It attains a height of from four to five feet,

and presents a noble appearance in the border. *E. alpinum* is a charming miniature. *E. spina alba* is also a pretty dwarf plant suitable for the rockery.

We shall now mention a few more plants that make no appeal in colour to the casual eye, but are, nevertheless, most desirable garden plants where there is space for their accommodation and taste for their eccentricities. Foremost in the category we should place the gigantic *Eryngium pandanifolium* as the type of a group of which the amateur does not require many examples. This plant stands far apart from the pretty subject figured; it has a singular body of leafage, slightly twisted in the way of a screw pine, and a quite unattractive head of flowers. Similarly noble is the large-leaved *Senecio Japonicus*, which grows to a height of five feet, and finishes its career by a display of orange-coloured flowers that are decidedly coarse, but also decidedly magnificent. *Polygonum cuspidatum* is another of the giants, requiring plenty of room, and being quite unfit for a place in any ordinary rockery. It is a glorious plant, but requires for its full development about as much space as a proper four-roomed cottage. *Elymus glaucifolius* is a cheap hardy grass with glistering blue leaves that will thrive on any heap of dry sand or stone. It is too coarse for the rockery, but a broad-minded amateur may be happy with it for an outdoor companion. *Ferula tingitana* is the giant fennel, a most interesting and proper rockery or border plant, loving moisture and warmth.

Its rich green colour is very different to the curious colours we have had before us in this chapter. Finally, *Phormium tenax*, the New Zealand flax, demands a place in the garden of every true amateur, and, strange to say, the beautiful variegated-leaved variety is more hardy than

the green-leaved. It will grow anywhere, but needs a good place to display its beauty.

When eryngos flower, autumn has come, and Nature prepares to strew with leaves the pathway on which Winter will steal with noiseless tread upon us. Hartley Coleridge caught the idea, and thus he sang of it :—

> "The mellow year is hastening to its close;
> The little birds have almost sung their last,
> Their small notes twitter in the dreary blast—
> That shrill-piped harbinger of early snows;
> The patient beauty of the scentless rose,
> Oft with the morn's hoar crystal quaintly glassed,
> Hangs, a pale mourner for the summer past,
> And makes a little summer where it grows:
> In the chill sunbeam of the faint brief day
> The dusky waters shudder as they shine,
> The russet leaves obstruct the straggling way
> Of oozy brooks, which no deep banks define,
> And the gaunt woods, in ragged, scant array,
> Wrap their old limbs with sombre ivy twine."

INDEX OF ENGLISH NAMES.

The Roman number refers to the Volume in which an account and figure of the plant may be found, and the Arabic number to the page.

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