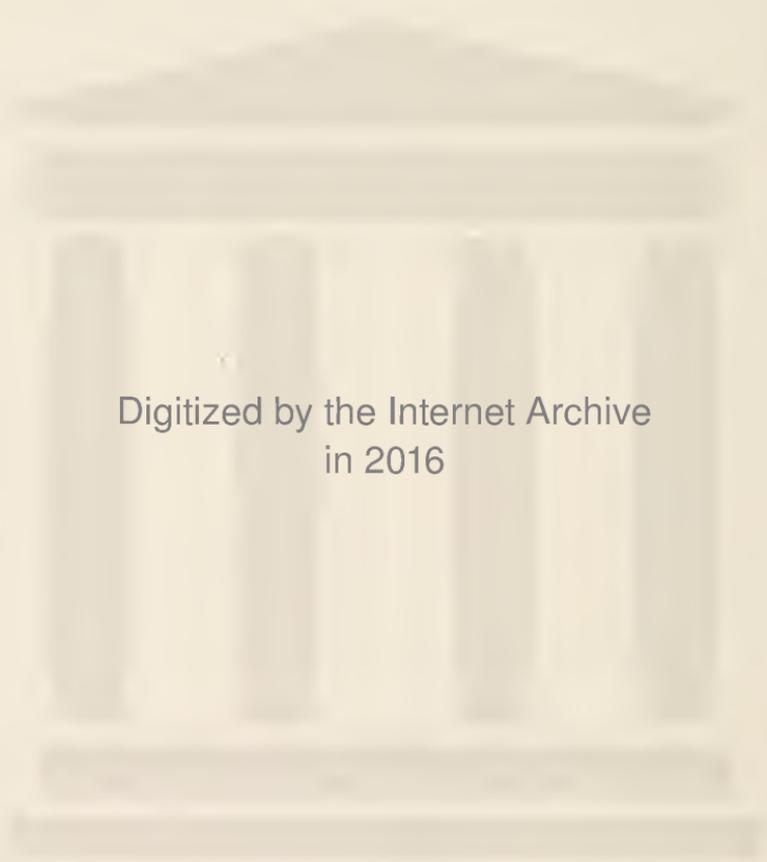


GARDEN FLOWERS



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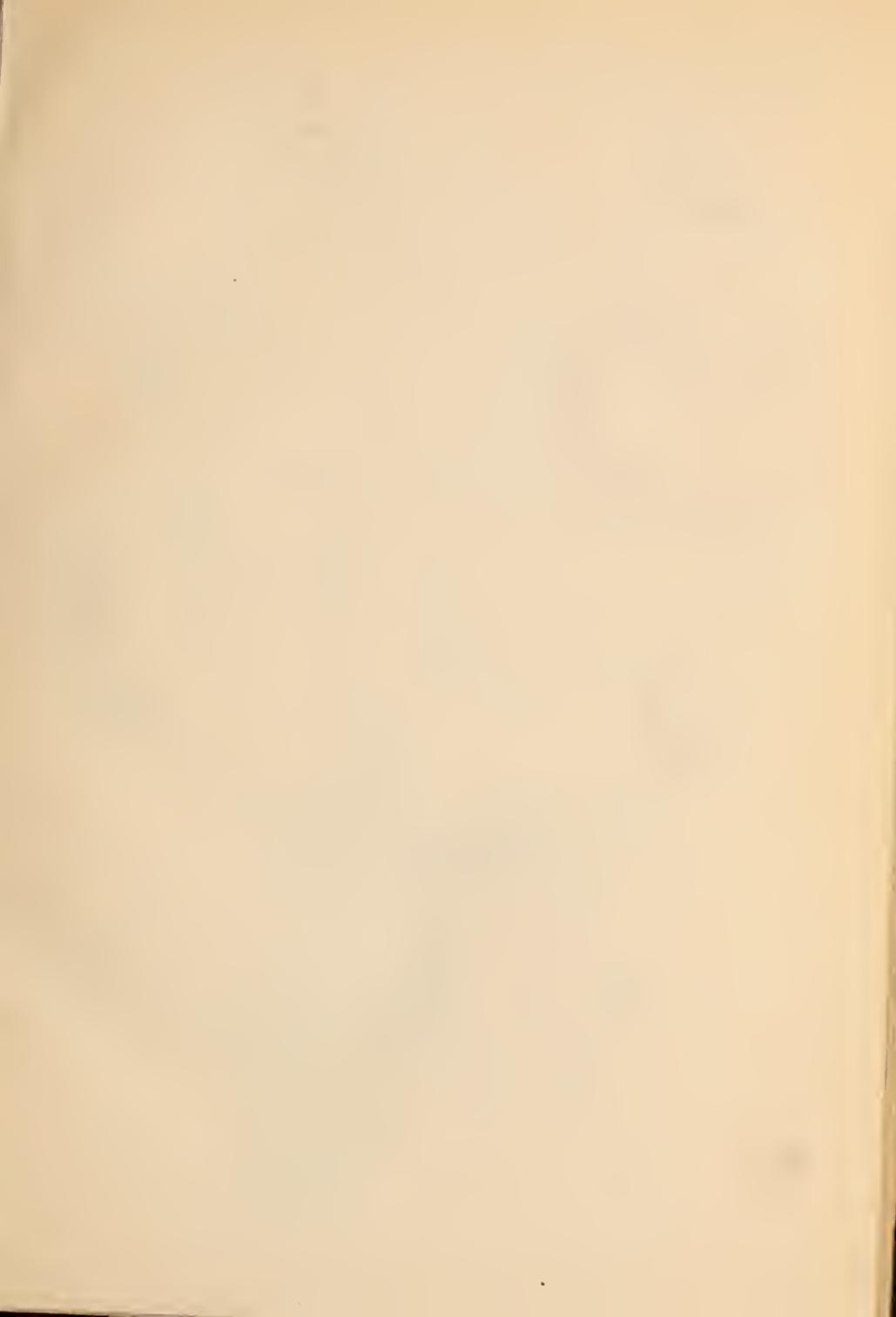
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ICELAND POPPIES (PAPAVER NUDICAULE) (1-3)

BEAUTIFUL
GARDEN
FOR
TOWN
AND
COUNTRY.
FLOWERS

BY

JOHN WEATHERS, F.R.H.S., N.R.S.,

SUPERINTENDENT OF THE MIDDLESEX COUNTY COUNCIL'S SCHOOL OF GARDENING, AND
LECTURER ON HORTICULTURE.

FORMERLY OF THE ROYAL GARDENS, KEW; ROYAL HORTICULTURAL SOCIETY, &C.

AUTHOR OF "A PRACTICAL GUIDE TO GARDEN PLANTS," "BEAUTIFUL ROSES,"

"BEAUTIFUL FLOWERING TREES AND SHRUBS."

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PREFACE.

THE interest taken in the cultivation of Beautiful Hardy Flowers is now so great and universal that there is no need to apologise for dealing with them in a separate volume. Indeed, the reception that has been so kindly accorded to the companion volumes on "Beautiful Roses" and "Beautiful Flowering Trees and Shrubs" induces me to hope that the present one will prove to be still more popular. Within its covers an attempt has been made to pack as much clear, concise, and accurate information as possible, concerning the choicest flowering annuals, biennials, and perennials, that may be grown in the open air in most parts of the kingdom. The trials and troubles that beset most amateurs in the preparation of a piece of garden ground, the insect pests and fungoid diseases that attack their plants, the methods of propagation, the arrangement for colour effect, the disposal of garden refuse, &c., have been referred to, and it is hoped will

enable the lover of hardy flowers to succeed in the future if he has been so unfortunate as to fail in the past.

There has been no attempt to be effusive over the obvious beauties of the flowers, or to waste space on more or less ecstatic eulogies which spring up spontaneously only when one sees plants flourishing in the garden itself. Bulbous plants have not been dealt with in detail. They form a large and charming group and will be dealt with in a separate volume.

To anyone requiring further examples of "choice"—that is to say, of really pretty but not generally well-known—plants, I would refer them to my "Practical Guide to Garden Plants."

JOHN WEATHERS.

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BEAUTIFUL GARDEN FLOWERS.

SUNSHINE AND SHADOW.

All parts of the garden not devoted to the cultivation of fruits and vegetables may be looked upon as places in which hardy flowers of some kind may be grown. Some spots will be better situated than others, so far as shelter from the cold winds is concerned, others will probably be somewhat shaded during the hottest part of the day, while again, a piece of ground under a wall facing due north will never have a streak of sunshine on it from one year's end to another. Indeed, there are as many aspects in a garden, as there are degrees to the compass, but for practical purposes they are more conveniently looked upon as four—the north, south, east, and west. In the following pages there are many plants described that will be found to grow well in one or the other of these aspects. It may, however, be regarded as a general principle that somewhat tender plants from warmer climates than our own should nearly always find a place in that part of the garden facing south. Here they will not only secure the most valuable part of the sunshine, but will also be protected, at least, from the north winds. If buildings, walls, or hedges, exist on the north and east sides, and the ground has a gentle slope towards the south, or is at least well open

in that direction, a garden may be said to be well situated for flower growing. Plants liking shaded or partially shaded places, will nearly always do well on a north border. Here they receive a good deal of diffused daylight, and yet are protected from the scorching rays of the mid-day sun. The following will be found useful for such positions:—

Acanthus, vars.	Echinops, vars.	Physostegia, vars
Achillea Ptarmica fl. pl.	Epimedium, vars.	Podophyllum
Aconitum, vars.	Eranthis hyemalis	Polemonium
Actæa, vars.	Eryngium alpinum	Polyanthus
Anemone, vars.	Funkia, vars.	Polygonatum
Aquilegia vulgaris	Gentiana	multiflorum
Aræbia	Gillenia trifoliata	Polygonum cuspidatum
Asclepias	Helleborus, vars.	Primula, vars.
Asperula odorata	Hemerocallis, vars.	Rodgersia
Asphodelus	Heuchera, vars.	Sanguinaria canadensis
Aster, vars.	Humulus Lupulus	Saponaria officinalis
Astilbe, vars.	Luula Helcniun	Saxifraga cordifolia
Astrantia, vars.	Iris, vars.	crassifolia
Auriculas	Liatris spicata	umbrosa
Baptisia, vars.	Lobelia	Sedum spectabile
Betonica grandiflora	Lupinus polyphyllus	Spigelia marilandica
Bupthalmum	Lychnis	Spiræa, vars.
Calystegia, vars.	Lysimachia, vars.	Stachys grandiflora
Centaurea montana	Lythrum, vars.	Thalictrum, vars.
Convallaria majalis	Mecconopsis	Tradescantia virginica
Coreopsis lanceolata	Mertensia, vars.	Trillium grandiflorum
Corydalis	Monarda, vars.	Tropæolum speciosum
Cyclamen, vars.	Morina	Uvularia grandiflora
Delphinium, vars.	Myosotis, vars.	Valeriana
Dicentra spectabilis	Oenothera, vars.	Vancouveria
Digitalis, vars.	Onopordon Acanthium	Veratrum, vars.
Dracocephalum	Pæonia, vars.	Viola, vars.

Preparation of the Ground for Hardy Flowers.—

Before planting a flower garden it is essential to see that the soil is in as good a state of tilth as possible. Many make the grave mistake of just digging a hole here and there, and sticking a plant into it anyhow without giving the slightest thought to the plant's

natural requirements. To begin with, it may be said that the best all round soil for flower growing is a good deep loam. Such a soil will only need to be dug deeply, and have a good layer of well-decayed manure buried in it about a foot beneath the surface. The digging will improve the drainage and enable fresh air to surround the roots, and to assist in dissolving the inorganic plant foods in their vicinity.

In the case of heavy clay soils, however, through which neither air nor water can pass, it means hard work to convert such soils into a fertile condition. Still, it is by no means impossible. In the first place the soil should be trenched to a depth of three feet or more, and completely broken up, incorporating as much road grit, sand, leaves, and manure as possible with it at the time. If in a particularly sodden state, broken clinkers, and brickbats, and even ashes from the grate, may be buried in the bottom of the trench so as to improve the drainage. It is of the utmost importance in a cold, heavy, wet, soil to get the water out of it. By doing so the heat of the sun is engaged in warming the soil round the roots of the plants instead of being frittered away in evaporating water which ought not to be there. In the preparation of a heavy soil quick lime may be used liberally. If spread over the ground after it has been broken up, and just covered over with a layer of soil, it will gradually "slake," and in doing so absorb a good deal of the unnecessary moisture from the earth. Incidentally also, it liberates potash, converting it into nitrate of potash (a most valuable plant food) with any *humus* (decayed organic matter, vegetable or animal)

that may have been in the soil. Deep digging or trenching, plenty of manure, road grit, sand, and lime, are the only royal roads by which a bad clayey soil can be brought into a fit and proper condition.

In the event of a soil being very light—that is, composed mainly of grit or sand—it is essential to mix some clay, marl, or heavy loam, and plenty of stable manure, with it. The drawbacks to a light soil are that it cannot retain sufficient moisture for the roots of the plants; it contains but little humus; and has an erratic mercurial temperature.

WHEN TO PLANT HARDY FLOWERS.—As a general rule, the spring and the early autumn are the two best times for planting. In the spring, as the new growths are pushing through the soil after their winter sleep, nature gives the gardener a hint that the plants are once more awake and require attention. If there is no need to increase the dimensions of the flower garden, or to disturb plants which are just in their prime, of course there is no necessity to lift, divide, or mutilate them in any way. But if they have become too large, or have been several years in the same spot from which they have exhausted their special food, then it becomes necessary to lift and transfer to fresh soil and new positions. Whether the clumps are transferred whole or divided, the roots should be carefully spread out when replanting. The hole into which they are put should be both wide enough to enable this to be done, and at the same time only just deep enough, so that the young growths are not covered with fresh soil and smothered. The chief things to bear in mind when planting in spring



WALLFLOWERS (*CHEIRANTHUS CHEIRI*) (4, 5)

is to select genial days for the work, when the soil is neither too wet nor too frosty.

Autumn Planting.—A large number of hardy flowers are best transplanted in early autumn—say from the middle of September to the end of October—chiefly because they happen to flower rather early in the year, and spring planting would probably spoil the blossom for the season. If planting is done much later than October there is a danger of the plants with their injured roots being unable to survive a hard winter. The cold rains, even more than frosts, are responsible for the death of many plants in winter, even when they have not been disturbed at the roots at all.

DIGGING AMONG HARDY FLOWERS.—This is a matter of great importance. Assuming that one has a good collection of well-established hardy herbaceous perennials, it is obvious that some little care must be exercised if it is necessary to dig between them. And it is also of importance that the man who does the work should have a good knowledge of the plants amongst which he is operating; otherwise, the chances are that many fine plants will be dug in as weeds, owing to ignorance.

A spade should never be used for digging amongst herbaceous plants; an old fork is perhaps the best implement, and the most suitable time for performing the work is when the plants have thrown their young growths well above the surface—say at the end of March or early in April. During the winter months in frosty weather, a good layer of well-decomposed manure, or the remains from an old mushroom-bed

or hotbed, should be spread over the ground. When the time for digging arrives, the manure will be in a still more mellow condition, and may be forked into the soil about two or three inches. Deep digging between hardy plants is entirely out of the question. If such were practised the tender roots would be destroyed, and the older ones dragged to the surface, and the result in many cases would undoubtedly be death to the plant.

MANURES FOR THE HARDY FLOWER GARDEN.

—Speaking generally, the safest manure to use is well decayed stable or cow manure, or better still the refuse from old mushroom beds and hot-beds. The refuse from such animals as the pig, sheep, rabbit, fowls, &c., is also of great value, and to secure it in the best form it should be well mixed with dry soil, and allowed to “mature” rather than apply it in a fresh state to the soil. In addition to these, leaf-soil is always a welcome addition to ordinary garden soil. The best way to apply those mentioned is in the form of top-dressings or “mulches” during the winter months.

Artificial or chemical manures, if used at all, should be given in small doses. About January or February a little basic slag and kainit may be sprinkled over the soil, afterwards pricking it lightly in with a fork. In March or April a little super-phosphate of lime may be sprinkled over in the same way, very lightly, like strewing pepper, and then no harm will be done. Good guano is, perhaps, too expensive to be scattered freely in this way. It may, however, be used in a liquid form (an ounce to two gallons of water) for the benefit of any choice or rare plant. Kiln Dust also

makes an excellent summer top-dressing for the flower borders.

Insect Pests and Fungoid Diseases--In the hardy flower border, amongst insect pests, perhaps the tender *Aphis* or *Green Fly* and the succulent slug are the most common. But there are many others, such as caterpillars, grubs, wireworms, earwigs, &c., that either injure the roots or devour the leaves and flowers, and unless one is constantly on the watch, they will soon get the upper hand. Birds are a great help in keeping many of them down, but some of these are not above suspicion themselves. As a remedy against *Aphis* of all kinds the quassia and soft soap solution mentioned on p. 26 will be effective. For slugs and snails, a little lime and soot dusted around the base about twilight or among the growths of any plants attacked will be effective. For wireworms, traps are often made with pieces of potato or carrot through which a stick is passed to serve as a handle. Earwigs may be trapped in the way described at p. 28.

So far as fungoid diseases are concerned they do not as a rule give very much trouble in the hardy flower garden. When noticed, the remedy mentioned for the Hollyhock fungus at p. 26 may be applied.

Beautiful Hardy Annuals.—An “annual” plant—hardy or otherwise—is one that completes its cycle of growth in one season—that is from the time the seed sprouts until the flowers wither and seeds are ripened again. Such being the case, it is obvious that annuals must be raised from seeds every year, as they cannot be propagated in any other way. As a general rule, if the weather is at all favourable, hardy

annuals may be sown in the open air from about the middle of March to the end of April, and even May. The spots in which the plants are to bloom having been selected, the surface of the ground should be prepared and made firm, and a little fine sandy soil placed on it for the reception of the seeds. These should be sown very thinly, not only from economic reasons, but also because the young plants will have more room to develop. After sowing they should be covered with a thin layer of finely-sifted soil, and a label bearing the name should be stuck in to mark the spot. Large seeds, like those of Lupins, Sweet Peas, &c., may be covered with an inch or more of soil; but very small seeds should have only a faint sprinkling of soil upon them, and the soil on which they are to be sown should be made correspondingly fine and firm. Otherwise they drop down the crevices, which are chasms to them in proportion to their diameter, and are never able to reach the light. Hence the "failures" with many seeds. When the young plants are large enough to handle easily, they should be thinned out, 6, 9, 12, or 18 inches apart, according to their nature. Those left will thus receive more air and light, and consequently develop into fine sturdy specimens. In most cases the plants taken out may be transferred to other spots if necessary. To secure the best effects, annuals should always be grown in bold masses or groups, instead of dotting a single plant about here and there.

Half-Hardy Annuals.—These are plants too tender to be sown in the open ground as early as their hardier brethren. If sown later they would not come into blossom probably until the early winter frosts



SAXIFRAGA CORDIFOLIA (6)

TRILLIUM GRANDIFLORUM (7)



appeared. For this reason they are usually sown in shallow boxes, pans, or pots under glass about February and March. The principles of sowing and covering the seeds under glass is practically the same as for the hardy kinds. In a temperature of about 60° F., those mentioned below germinate freely—some in a few days, others in a few weeks—according to their nature.

The following is a list of the most showy hardy, and half-hardy annuals arranged according to colours. Those marked thus (*) are half-hardy:—

Red, Scarlet, and Pink.—*Adonis autumnalis*, **Callistephus hortensis* vars. Candytuft, *Centranthus macrosiphon*, **China Asters*, *Clarkia elegans*, **Cosmos bipinnatus*, **Dianthus chinensis*, **Gaura Lindheimeri* (really a perennial), *Gilia coronopifolia*, **Godetia grandiflora*, *Iberis umbellata*, *Impatiens Roylei*, *Lathyrus odoratus*, *Linum grandiflorum*, **Malcolmia maritima*, **Matthiola annua*, *Phlox Drummondii*, *Salpiglossis*, **Saponaria calabrica*, **Scabiosa atropurpurea*, *Senecio elegans*, Shirley Poppy, **Ten Week Stocks*, *Tropæolum majus* and *minus*, **Zinnia elegans*.

Yellow and Orange.—**African Marigold*, *Calendula officinalis*, **Carthamus tinctorius*, *Catananche lutea*, *Centaurea macrocephala*, *Centaurea suaveolens*, **Chrysanthemum coronarium*, *Chrysanthemum segetum*, *Coreopsis Drummondii*, *Eschscholtzia californica*, **Gaillardia*, **Godetia* vars., *Helianthus annuus* vars., *Hunnemannia fumariæfolia*, *Impatiens fulva*, *Lathyrus odoratus*, **Matthiola annua*, *Mignonette*, *Platystemon californicus*, *Reseda odorata*, *Salpiglossis*, **Sanvitalia procumbens*, **Scabiosa atropurpurea*, *Senecio elegans*, Shirley Poppy, **Tagetes*, **Ten Week Stocks*, **Thunbergia alata*, *Tropæolum*, **Tropæolum peregrinum*, **Venidium calendulaceum* (really a perennial), **Zinnia elegans*. **Zinnia Haageana*.

Blue and Purple.—**Brachycome iberidifolia*, **Callistephus hortensis*. **Campanula* (see p. 52) vars., *Centaurea Cyanus*, **China Asters*, *Clarkia pulchella*, **Convolvulus tricolor*, *Delphinium* vars., **Dianthus chinensis* vars., *Lathyrus odoratus*, *Linum usitatissimum*, **Matthiola annua*, *Nemophila insignis*, *Phacelia* vars., *Salpiglossis*, **Scabiosa atropurpurea*, *Senecio elegans*, Shirley Poppy, **Swan River Daisy*, **Ten Week Stocks*, **Trachymene cœrulea*.

White.—**Argemone*, **Brachycome iberidifolia*, **Callistephus hortensis* vars. **Campamula punctata*, **China Asters*, **Cosmos bipinnatus*, **Godetia* var., *Gypsophila elegans*, *Lathyrus odoratus*, **Malcolmia maritima*, **Nicotiana affinis*, **Nicotiana sylvestris*, Sweet Pea.

BEAUTIFUL BIENNIALS.—These are plants which usually take two seasons of growth to mature,

from the time the seed has been sown until flowers and seeds are produced again. It is, therefore, usual to sow these plants one year so that the plants will flower the following. This process has to be adopted with some true perennials also. The best known biennial plants of decorative garden value are : *Campanula Medium* (Canterbury Bell); *Centaurea Cyanus* (Cornflower); *Cheiranthus Cheiri* (the Wallflower); *Coreopsis grandiflora*; *Dianthus barbatus* (Sweet William); *Digitalis purpurea* (Foxglove); *Heracleum villosum* (Cartwheel flower); *Hesperis matronalis* (Dame's Violet); *Lunaria biennis* (Honesty); *Lychnis coronaria* (Campion); *Malcolmia tristis* (Night-scented stock); *Michauxia campanuloides*; *Enothera biennis* (Evening Primrose); *Scabiosa caucasica* (really a perennial); and *Symphyanthra Hoffmanni*.

PROPAGATION OF HARDY PLANTS.—Hardy herbaceous plants may be multiplied by (i) seeds; (ii) cuttings of the shoots; (iii) cuttings of the roots; (iv) division of the rootstocks; and (v) layering the stems. Owing to the fact that the stems of most plants known as “hardy herbaceous” naturally die down to the ground each winter, their increase by budding or grafting is practically out of the question. The five methods usually employed may be briefly considered separately.

1. **Hardy Plants from Seeds.**—All annuals, whether hardy or half-hardy, are necessarily raised from seeds. Most biennials are raised in the same way, although choice varieties may be propagated by cuttings or slips of the non-flowering shoots—chiefly during the summer months. Many hardy plants with perennial

roots, however, ripen seed freely in our climate, and in this way it is easy to keep up a supply.

The principal time for seed sowing is in the spring, summer, or early autumn. Whether the seeds are to be sown in the open air, in specially-prepared soil, or in pots or pans in cold frames or greenhouses, will depend a good deal upon the hardiness or rarity of any particular kind. If sown in the open air, special seed beds about four feet wide may be prepared of fine, light, rich soil. They should be raised a few inches above the surrounding level, and situated in a warm sheltered corner, such as under a wall or thick hedge facing any aspect between south-east and south-west. Shallow drills for the reception of the seeds are easily made by pressing the edge of a straight board into the soil; or round or square depressions may be made in the surface in the same way when only a few seeds are available. This, however, would be only in cases where neither cold frames nor greenhouses exist. The depth of covering will depend on the size of the seeds, as already explained.

2. Hardy Plants from Stem Cuttings.—A very large number of plants can be increased by detaching sturdy well-ripened shoots—not young sappy ones, nor old woody ones—from the sides or base of the plants in summer. Any shoots showing traces of blossom are, as a rule, useless for cuttings. As cuttings have no roots, and are losing vapour continually from their leaves, it is necessary to insert them in a shady part of the garden, otherwise they are likely to be shrivelled up by the sun before they have a fair chance to develop new roots. The cuttings of any

choice kinds should be inserted in a frame where they can be easily shaded, and kept moist and close—the three essentials for the quick rooting of cuttings—for some days. In any case, the soil should be light, rich, and sandy, and the cuttings should always be “watered in” well with a fine-rosed can. In the open air a nice sprinkling overhead two or three times a day will be beneficial, keeping the soil and atmosphere cool, and checking evaporation. When well-rooted, the cuttings may be either planted out in their permanent positions, or grown on in pots for a season in a cold frame or cool greenhouse.

3. Hardy Plants from Root Cuttings.—Almost everyone has probably seen how easily small pieces of root of the Dock, Horse-Radish, Sea-Kale, &c., develop into new plants when placed in damp soil. Advantage is taken of this fact in the case of plants that cannot be so easily or satisfactorily increased in any other way. So far as hardy ones are concerned, the following can be increased by cutting up the roots in early autumn or spring, into pieces about 2 inches long, and covering them over with an inch of rich sandy soil, viz. : *Acanthus*, *Anemone japonica*, *Arnebia echioides*, *Bocconia cordata* ; *Dictamnus Fraxinella*, *Eryngium*, (*Sea Holly*), *Inula*, *Echinops Ritro*, *Papaver orientale*, *Platycodon grandiflorum*, *Senecio pulcher*, *Statice latifolia*, *Trachelium coeruleum*.

4. Hardy Plants by division of the Rootstock.—Quite a large number of hardy herbaceous perennials are easily increased in this way. The rootstocks may be taken up, say not later than September or October, in some cases, and more or less carefully pulled apart,



TROLLIUS EUROPAEUS (8)

TROLLIUS ORANGE GLOBE (9)

ANEMONE FULGENS (10)

or cut asunder with a strong knife, so that each divided portion shall contain a shoot or two for next season's growth. In the spring, however, is the chief time for increasing plants by division. The garden is being re-arranged, and plants are moved to different positions. It is, therefore, not only a convenient time for the work, but the divided portions have the benefit of the increasing warmth each day, and the prospects of more genial weather than those divided in autumn.

5. **Layering.**—Very few hardy plants are increased by this method. Carnations are the most popular example, and the process is detailed at p. 57.

GARDEN REFUSE AND ITS DISPOSAL.—In small gardens near large towns, nothing is so annoying at times as the difficulty of getting rid of the weeds, dead stems and leaves, grass trimmings, &c., that have accumulated in the course of the year. Very often it is a nuisance to the neighbours if burned, and very often also there happens to be no place to burn it, except perhaps on the little plot of grass, or on a few choice plants against a wooden fence. In these hard circumstances there is nothing to be done but to have the refuse carted away to some convenient "shoot."

Although there is bound to be refuse of some kind in every garden, a good deal of it may be turned to advantage. For example, the leaves, annual weeds (if they have not run to seed), and the grass mowings might very well be stored up in some corner, and mixed with a little soil, not only to keep them from being blown about by the wind, but to hasten their decomposition into humus.

If there be no space for storing, the leaves and annual weeds may be forked into the soil between the plants, and the grass mowings may be utilised as a top dressing or mulch, during the summer months. If spread over the soil in thin layers, it decays slowly and inoffensively, and during hot dry summers is a great boon, as it prevents the too rapid evaporation from the soil round the roots of the plants. Refuse treated in this way, instead of being a nuisance becomes a valuable agent, not only as a source of plant food, but as a check to the development of weeds. One must, however, discriminate between clean refuse, and that which is infested with fungoid diseases, or has served to harbour slugs, snails, or other vermin, or their eggs. In the latter case, the safest plan is to get the refuse burned, and afterwards strew the ashes over the soil.

LAWNS AND GRASS PLATS.—A lawn, large or small, is always appreciated in connection with the hardy flower garden. Even grass pathways between the beds and borders, if kept in good condition, are to be preferred to gravel or concrete. Unless, however, they are kept free from weeds such as Daisies, Dandelions, Plantain, Moss, &c., they are a source of continual expense, trouble, and disappointment. Weeds may either be taken out root and all with an old knife or grubber, and burned, or they may be destroyed by dipping a strong skewer or piece of iron in vitriol and piercing the heart of the plant. A good pinch of salt may also be put on the centre of each Daisy, Dandelion, or Plantain in dry weather, and in a few days will destroy them. This remedy is useless in wet weather. Worms are often a great nuisance

owing to the unsightliness of their casts on the surface. To get rid of them a quart of salt strewn over about 20 square yards will be effective; or lime water, made from freshly-slaked quick-lime, freely distributed, often has beneficial effects. A liberal dressing of soot is not only useful as a check to worms, but is also a food for the roots of the grass.

Mossy lawns usually indicate bad drainage of the soil beneath. Short of taking the turf up and relaying after the ground has been deeply dug and re-levelled, the best way to treat a mossy lawn is to thoroughly rake off the moss, and afterwards give the lawn a good dressing of rich sandy soil, leaf mould, and wood ashes. Fresh lawn seed may then be sown all over, or in the bare patches only, the whole afterwards being raked over, gently rolled, and watered.

GARDEN PATHWAYS.—These are generally made of gravel, or rather the upper surface is, while the lower strata may be composed of brick-bats, clinkers, &c., to a depth of 1 or 2 feet to secure good drainage. The surface should be slightly arched in the centre, gently sloping away to the sides. If kept well rolled, especially after a light shower, the pathways will always look neat and tidy. Stray weeds should be pulled up immediately they are seen, rather than be left until enough develop to necessitate special labour to get rid of them. Liberal pinches of salt will destroy weeds in dry weather; or some of the special weed-killers, used according to instructions, will be found useful. Care should be taken not to wet the grass edges when using them.

WEEDING AND HOEING.—No matter how well

kept a flower border may be, weeds are sure to make their appearance during the season. The careful and intelligent gardener does not wait until they tickle the tip of his nose before eradicating them, but is ever ready to suppress them. For this purpose the Dutch hoe will be of great service, and should be constantly used, especially in dry seasons. Not only does hoeing "keep the weeds down," but it also freshens up the surface of the soil. The loose layer on top acts as a check upon the evaporation of moisture from the root region, and thus the soil that has been hoed, is kept moist for a longer period than that which has not. When it is desired to break the surface up rather deeply, the Canterbury Hoe, a kind of 3-pronged mattock, may be used instead of the Dutch variety.

ARRANGEMENT FOR COLOUR AND EFFECT.

—One of the most difficult things in connection with a flower border is to arrange plants of various heights and habits in such a way that harmonious colour effects will be produced, so as to give the border an interest at almost all seasons of the year. Reds, Blues, Purples, Yellows, and Whites are often indiscriminately mixed in such a way that the effect of one plant is often destroyed by another, simply because the colour of one does not harmonise well, or make a good contrast with the other. To assist the reader in making a selection of plants having white, red, blue, or yellow flowers, the following lists have been drawn up. Not only are the predominant colours given, but the heights of the plants are given in feet after each name, in brackets. It should be borne in mind that tall plants are not necessarily to be placed



SINGLE AND DOUBLE POLYANTHUSES (11-15)



at the *back* of a flower border. Certainly they would rarely be placed in front; but in the centre, and here and there at the back, the tall bold growing plants should find a proper place in masses. Arranged in this way there will be plenty of space towards the front and back, and between the big clumps in the centre, for plants of lower stature. In this way all formality will be avoided, the plants will be in clumps rather than in straight rows, and if judiciously selected according to colour, the result will be both effective and ornamental.

Beautiful Hardy Plants with White Flowers.

Achillea Clavennæ, (1)	Convallaria majalis ($\frac{1}{2}$)	Phlox (2-3)
Parnica pl. (2)	Crambe cordifolia (6)	Platycodon grandiflorum
Aconitum Napellus albus	Dahlia, white vars. (3-5)	album (1-2)
(3-4)	Dictamnus Fraxinella	Podophyllum (1-2)
Actæa spicata (1)	alba (1-2)	Polygonatum multi-
Althæa (6-8)	Digitalis, vars. (2-4)	florum (2-3)
Alyssum maritimum ($\frac{1}{2}$)	Eomecon chionantha (1)	Primula (see p. 123)
Anemone alba ($\frac{1}{2}$)	Funkia grandiflora (2)	Pyrethrum (2-3)
alpina $\frac{1}{2}$ -2)	Galega officinalis alba	Ranunculus aconitifolius
japonica alba	(3-5)	plenus (2)
(2-3)	Gypsophila elegans (1-2)	alpestris ($\frac{1}{2}$)
narcissiflora (1)	paniculata	amplexicaulis (1)
nemorosa ($\frac{1}{4}$)	(2-3)	Romneya Coulteri (2-8)
sylvestris ($\frac{1}{2}$)	Helleborus niger ($\frac{1}{2}$ -1)	Sanguinaria canadensis
Antennaria dioica ($\frac{1}{4}$)	Hollyhock (6-8)	($\frac{1}{4}$ - $\frac{1}{2}$)
Antirrhinum majus albus	Iberis ($\frac{1}{2}$ -1)	Saxifraga (see p. 131)
(1-2)	Iris florentina (2-3)	Scabiosa caucasica alba
Arabis ($\frac{1}{4}$)	Jeffersonia diphylla ($\frac{1}{2}$)	(1-3)
[(2-3)	Lathyrus odoratus (3-5)	Sidalcea candida (2-3)
Argemone grandiflora	Lupinus polyphyllus	Silene maritima (2)
Asperula odorata ($\frac{1}{4}$)	albus (3-6)	Zawadskii ($\frac{1}{2}$)
Asphodelus ramosus (4-5)	Lycnis vespertina fl. pl.	Spiræa Aruncus (3-5)
Asters (see p. 41)	(1-3)	Filipendula (1-2)
Astilbe rivularis (3-4)	Lysimachia clethroides	Kamtshatica (6-9)
japonica (1-2)	(2-3)	Ulmaria (2-4)
Campanulas ($\frac{1}{4}$ -2)	Micbauxia campanu-	Tiarella cordifolia ($\frac{1}{4}$ -1)
Carnation (1-2)	loides (3-8)	Trillium grandiflorum
Cerastium tomentosum	Nicotiana affinis (2-3)	($\frac{1}{2}$ -1)
($\frac{1}{4}$ - $\frac{1}{2}$)	Enothera speciosa (1)	
Chrysanthemum Leucan-	taraxacifolia (1)	
themm, sinense,	Ostrowskya magnifica	
numerous white-	Pæonia, vars. (2-3)	
flowered, vars. (2-6)		

Beautiful Hardy Plants with Red, Crimson, Scarlet, or Pinkish Flowers.

<i>Achillea Millefolium</i>	<i>Dicentra eximia</i> (1)	<i>Lythrum</i> (2-5)
<i>roseum</i> (1-3)	<i>Dicentra spectabilis</i> (2)	<i>Matthiola</i> (1)
<i>Althaea rosea</i> (6-8)	<i>Dietamnus Fraxinella</i>	<i>Monarda didyma</i> (1-3)
<i>Anemone coronaria</i> (2-1)	(1-2)	<i>Ourisia coccinea</i> (1)
<i>fulgens</i> (1)	<i>Epilobium angustifolium</i>	<i>Pæonia</i> , vars. (2-3)
<i>japonica</i> (2-3)	(3-6)	<i>Papaver</i> , vars. (2-3)
<i>Antirrhinum majus</i> (1-2)	<i>Erodium Mancscavi</i> (1-2)	<i>Pentstemon barbatus</i> (2-3)
<i>Aquilegia canadensis</i> (2)	<i>Geum coccineum</i> (1)	<i>Phlox</i> , vars. (2-3)
<i>Armeria</i> ($\frac{1}{2}$)	<i>Heuchera sanguinea</i>	<i>Phygelius capensis</i> (3-4)
<i>Betonica grandiflora</i>	($\frac{1}{2}$ -1 $\frac{1}{2}$)	<i>Polygonum Bistorta</i> (1-2)
<i>Callirhoë digitata</i> (2-3)	<i>Incarvillea Delavayi</i> (2)	<i>Potentilla</i> (2-3)
<i>involuta</i> (1)	<i>Olgæ</i> (3-4)	<i>Pyrethrum roseum</i> (2-3)
<i>Centranthus ruber</i> (2)	<i>Kniphofia</i> (2-6)	<i>Sedum spectabile</i> (1-2)
<i>Chrysanthemum</i> (2-3)	<i>Lathyrus</i> , vars. (3-8)	<i>Spigelia marilandica</i>
<i>Dahlia</i> (3-5)	<i>Liatris</i> (1-3)	($\frac{1}{2}$ -1 $\frac{1}{2}$)
<i>Delphinium nudicaule</i>	<i>Lobelia fulgens</i> (3)	<i>Spiræa palmata</i> (1-2)
(1-2)	<i>Lychmis</i> (1-3)	<i>lobata</i> (6)

Beautiful Hardy Plants with Blue, Bluish, or Purplish Flowers.

<i>Aconitum</i> (2-4)	<i>Echinops Ritro</i> (3)	<i>Myosotis</i> , vars. ($\frac{1}{4}$ -1)
<i>Anchusa</i> (2-4)	<i>Erigeron speciosus</i> (1-2)	<i>Pentstemon Jaffrayanus</i>
<i>Anemone apennina</i> ($\frac{1}{2}$)	<i>Eryngium alpinum</i> (1-2)	(1-2)
<i>blanda</i> ($\frac{1}{2}$)	<i>amethystinum</i> (2)	<i>Platycodon grandiflorum</i>
<i>Hepatica</i> ($\frac{1}{2}$)	<i>Funkia ovata</i> (1 $\frac{1}{2}$)	($\frac{1}{2}$ -2)
<i>Pulsatilla</i> ($\frac{1}{2}$)	<i>Galega officinalis</i> (3-5)	<i>Polemonium</i> , vars. (1-3)
<i>Aquilegia</i> , vars. (2-3)	<i>Gentiana</i> , vars. ($\frac{1}{2}$ -2)	<i>Prunella</i> ($\frac{1}{2}$)
<i>Aster</i> (see p. 42)	<i>Iris</i> , vars. (1-3)	<i>Pulmonaria angustifolia</i>
<i>Aubretia</i> ($\frac{1}{4}$)	<i>Lithospermum</i> (1)	(1)
<i>Baptisia australis</i> (4-6)	<i>Lupinus</i> (3-6)	<i>Trachelium cœruleum</i>
<i>Campanula</i> , vars. (1-3)	<i>Meconopsis aculeata</i> (2)	(1-2)
<i>Catananche cœrulea</i> (2-3)	<i>simplicifolia</i> (3)	<i>Tradescantia virginica</i>
<i>Centaurea Cyanus</i> (2-3)	<i>Wallichii</i> (4-6)	(1-2)
<i>Delphinium</i> (3-8)	<i>Mertensia virginica</i> (1-2)	<i>Veronica</i> (1-4)
<i>Dracocephalum</i> , vars.	<i>Monarda fistulosa</i> (2-5)	<i>Viola</i> ($\frac{1}{2}$)
(1-2)		

spinosissimus, with rosy-pink blossoms is remarkable for the numerous white spines adorning the leaves.

The above are all natives of Central and Southern Europe, and it is said that the foliage of *A. mollis* suggested the idea of the Corinthian Capital. They flourish in a sandy loam or well-drained garden soil, and, owing to their size and vigour, are perhaps better adapted for massing in large borders or for beds by themselves on the grass. They like plenty of sunshine, and should be sheltered from cold winds. They are easily increased by division in spring; by seeds; and by cuttings of the roots.

ACHILLÆA (*Milfoil*; *Yarrow*).—The Yarrows are a numerous family capable of flourishing almost anywhere in the border or rockery. The chief beauty of the Yarrows consists in their finely-divided leaves—often of a silvery sheen—and the colour of the flower heads, which are either white, yellow, or pink. The best WHITE-FLOWERED Achilleas are the “Sweet Maudlin” (*A. Ageratum*), 6 to 8 inches high; *A. Clavennæ*, 6 to 10 inches; *A. Herba-Rota*, 6 inches; *A. macrophylla*, 2 feet, a very distinct-looking plant with large fern-like foliage; *A. mongolica*, 18 inches; *Ptarmica*, a British plant about 2 feet high, but surpassed in beauty by its doubles varieties the *Pearl*, *flore pleno*, &c.; *A. rupestris*, 3 inches high; *A. serrata*, 1 to 2 feet high; and *A. umbellata*, 6 inches high. The best YELLOW-FLOWERED species are *A. ægyptiaca*, from Egypt, 12 to 18 inches high; *A. Eupatorium*, 4 to 5 feet; *A. tanacetifolia*, 2½ feet, and *A. tomentosa*, a densely-tufted species, about 1 foot high.

The best rosy flowered Yarrow is the form of the



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SINGLE POLYANTHUSES (16-19)

VIOLAS (20-22)

common British species called *A. Millefolium roseum*. It grows 1 to 3 feet high, and produces its flat trusses of soft rosy-pink flowers in summer.

The Yarrows flourish in any well-drained garden soil, and are easily increased by dividing the rootstocks in spring.

ACONITUM (*Aconite*; *Monkshood*).—Many species belong to this genus, and although they are ornamental in appearance, owing to their deeply-divided leaves and erect trusses of peculiarly shaped flowers, they are dangerous on account of their poisonous properties. The plants may be easily recognised when in blossom by means of the hooded or helmet-like upper segment of the flowers. The roots of many kinds are thick and fleshy, and in some cases have unfortunately been mistaken for Horse Radish. The plants flourish in ordinary garden soil, and may be planted in bold clumps in sunny spots in the shrubbery or rougher parts of the garden. Seeds are freely produced, but propagation by division of the rootstocks may also be effected in spring, after which the hands should be well washed. The following are the most ornamental Monkshoods for the garden:—*A. Anthora*, 1 to 2 feet high; flowers pale yellow; July. *A. autumnale*, a fine species 3 feet high; flowers bluish-purple, from July to November. *A. Napellus* is the common tuberous-rooted Monkshood found wild in parts of England. It grows 3 to 4 feet high, and has dark-blue flowers from July to September. There are many variations of it. *A. Wilsoni*, from Central China is a new species about 6 feet high, with large panicles of pale bluish-purple blossoms, netted with darker veins.

ACTÆA spicata (*Baneberry*; *Herb Christopher*).—

An ornamental native perennial 1 foot high, with stoutish black rootstocks, much divided leaves, and erect racemes of white flowers in May. These are succeeded by black poisonous berries in autumn. In the variety *rubra* the berries are red, and in *A. alba* they are white. The Baneberries like moist sandy peat, loam, and leafsoil in shady spots, and may be increased by division in early autumn or spring.

ADONIS (*Pheasant's Eye*).—Graceful plants suitable either for the rock-garden or flower border, in ordinary soil; they appear to be more at home in partially shaded spots. The "Red Morocco" or "Scarlet Adonis" (*A. autumnalis*) is a native annual about a foot high, with green leaves finely divided into slender segments. Its scarlet blossoms appear from July to September, and will last a long time in water when cut. *A. æstivalis* from South Europe is also an annual, with scarlet or deep crimson flowers in June. Both kinds may be raised from seeds.

Amongst the perennial kinds the following are most useful: *A. amurensis*, from North China; leaves feathery; flowers bright yellow, usually appearing in January and February. The double-flowered form with numerous petals is superior to the type. *A. distorta*, an alpine species, flowers yellow in April. *A. pyrenaica* produces its yellow blooms about July. When once established, the plants are best left undisturbed for a few seasons. *A. vernalis* is a beautiful European plant, 1 to 2 feet high, with bright yellow flowers often 3 inches or more across, from March to May, looking extremely effective just on top of the

fennel-like foliage. There are a few forms of it, the best known being *sibirica* and *major*. Although the perennial kinds may be raised from seeds in the same way as the annual ones, poor forms are likely to result. It is therefore best to effect an increase by carefully dividing the rootstocks after flowering.

ALSTRÆMERIA (*Peruvian Lily*). — Although called a “Lily” the plants in this genus really belong to the Narcissus family. They have no bulbs, but a mass of thickened or tuberous roots from which spring leafy stems bearing clusters or umbels of richly-coloured and often spotted flowers, as shown on Plate 25. They are highly effective in the flower border or rockery, but only when planted in large masses. A rich sandy loam and leaf soil, which has been well dug and manured in advance, suits the plants perfectly; in addition to which, they require sunny spots sheltered from bleak winds. When growing fully they like plenty of moisture, and should the soil be rather porous and gritty, a good “mulching” of well-rotted cow-manure, and frequent waterings during the summer months, will be of great value.

Alstrœmerias may be increased by very carefully dividing the clusters of fleshy roots in spring, the divided portions being covered with about 6 or 9 inches of soil as a protection against frost. It is a mistake, however, to disturb the plants every year, as they would not have sufficient time to recover themselves. Seeds may be sown very thinly when ripe, under glass. The seedlings should not be disturbed for one season after they have been pricked out of the seed pots into a compost of light, yet rich,

loamy soil with a little sand, leaf-mould, and peat added. Of course, until well-established the young plants are safer under glass.

Although there are over 40 species known, the following is a selection of the best kinds:—

A. aurantiaca or *A. aurea*.—A native of Chili, 2 to 4 feet high, with masses of orange yellow blossoms, streaked with red or carmine, from June to September. Two forms are shown on Plate 25. The variety *concolor* has pale-yellow unspotted flowers. *A. brasiliensis*, 3 to 4 feet high, has reddish-yellow flowers, the inner segments being spotted with purple-brown. *A. chilensis* is a very variable Chilian species, with blood red or pink flowers streaked with yellow, some forms being bluish-white, and deep orange red. *A. hæmantha* has bright red and orange flowers, spotted with crimson. There are many variations of this species, including one called *albida*. *A. Pelegrina*, the “Lily of the Incas,” has been in cultivation about 150 years. It has heavily striped flowers of lilac and reddish-purple. The variety *alba* has white unspotted blossoms, and is somewhat more tender than the coloured form. *A. pulchella* has deep red flowers spotted with purple brown. *A. pulchra*, St. Martin’s Flower, has flowers variously coloured with purple, yellowish white, and deep yellow, dotted with red and flushed with pink. *A. versicolor* (or *peruviana*) has yellow flowers, spotted and striped with purple or maroon.

ALTHÆA rosea (*Hollyhock*).—More than 300 years ago the Hollyhock came from China. Since then, it has always been a great favourite, so much so, indeed



GERMAN IRIS (I. GERMANICA VAR.) (23)

that it formed one of the features at exhibitions about 40 years ago. The Hollyhock has been improved to such an extent that there is practically no resemblance between the blossoms of the wild type, and those that have been evolved by selection and cultivation. Both single and double varieties when grown in bold masses in the garden are highly attractive and remain in blossom from July to October.

Hollyhocks flourish in a well-drained garden soil which has been deeply dug and well manured. Cold, wet, and heavy soils should be avoided.

The best time to plant is about the end of March. During the summer months it is essential to keep the roots well supplied with moisture, either by watering, or with a mulching of well-decayed manure. Although sturdy plants will send their flower stems up to a height of 8 or 10 feet without a stake, it is nevertheless advisable to provide each plant with a stout support to which the stems may be tied. They will thus be able to resist strong winds. By cutting off the extreme top of the flower stems, the blossoms retained will develop more evenly and become larger, finer, and better coloured. When the flowering period is over, the stems may be cut down about 6 inches above the ground, and the soil may be drawn up into a little mound so as to throw off the winter rains.

Hollyhocks are easily increased by means of seeds sown in April or May; by cuttings of the sturdy non-flowering shoots from the sides and base of the stems during the summer months; and by carefully dividing the rootstocks with a strong sharp knife as soon as flowering is over. The cuttings should be inserted in

nice gritty soil round the sides of a flower pot, and placed in a cold frame or old hot-bed, and for a few days they should be shaded from the sun and kept close and moist.

The most troublesome insect pests are the green fly and red spider, both appearing in hot dry seasons. They are best kept in check by frequently syringing the foliage morning and evening. To secure the quicker disappearance of greenfly, about 1lb. of quassia chips steeped in boiling water, and $\frac{1}{2}$ lb. of soft soap, may be diluted to about 10 gallons of water, to form an effective insecticide. During the winter and early spring months, slugs are apt to be troublesome. A little slacked lime and soot strewn around and over the crowns will check their ravages.

The Hollyhock fungus (*Puccinia malvacearum*) appears in brown or yellow spots on the under surface of the leaves, and when in great abundance prevents the proper development of the flowers. As a preventive 1 ounce of liver of sulphur, dissolved in $2\frac{1}{2}$ to 5 gallons of water, may be sprayed over the foliage with a fine syringe. Any old leaves in a very bad condition with the fungus are best taken off carefully and burnt immediately.

ALYSSUM.—Although there are 80 or 90 species belonging to this genus, only a few are attractive. The Sweet Alyssum (*A. maritimum*) is a native plant 6 to 10 inches high, with linear downy leaves and racemes of small, white, sweet-scented blossoms from June to September. There is a compact-growing form used as a carpet beneath taller plants during the "bedding out" season; and also a variegated form,

the leaves of which are edged with yellowish white. *A. montanum* is a Pyrenean Alpine, 2 to 4 inches high, with greyish-green, hairy leaves, and fragrant yellow flowers from May to July. *A. saxatile* is probably the most popular species. It grows about 1 foot high, and is somewhat shrubby at the base, the stems being furnished with greyish lance-shaped leaves. The bright yellow fragrant flowers appear in great profusion in April and May. There are several forms of which *citrinum* with lemon-yellow flowers is perhaps the most valuable.

The Alyssums are easily grown in ordinary garden soil of a more or less gritty nature. Owing to their dense tufted habit, low stature, and profusion of blossom, they are more generally useful for the rock garden, although also effective in front of the flower border. They may be increased by cuttings of the non-flowering shoots in early summer; by careful division of the rootstock about September or early October; or by seeds sown in spring in a cold frame.

ANCHUSA (*Alkanet*).—This genus belongs to the same family as the Forget-me-not, and contains several species, some of which are annual, some biennial, and some perennial. The flowers of most of the species are bright blue, but there are others with purple, and even white blossoms. *A. italica* and *A. angustifolia*, both about 3 to 4 feet high, and *A. sempervirens*, 1½ to 2 feet high, are perhaps the most noteworthy perennials. They like open sunny situations in good garden soil, and may be increased by seeds or division.

ANEMONE (*Windflower*).—There are about 70 species of Windflowers, some of which have tuberous

roots. The leaves are in most cases deeply lobed or divided, and as there are no petals, the showy portion of the flowers consists of sepals, 4 to 20 in number, according to the species.

I. TUBEROUS-ROOTED WINDFLOWERS.

A. apennina, about 6 inches high, produces its sky-blue flowers in March and April well above its soft finely-cut foliage. It likes a partial shade in the border or rockery. The variety *alba* has white blossoms, and *rosea* blush ones. *A. baldensis* is a rather rare Swiss alpine with white flowers in May. *A. blanda* has finely divided leaves, and its deep, blue flowers, nearly 2 inches across, appear in winter or early spring. The variety *Cyprianæ* is a charming plant. The flowers are bright blue in bud, but become pure white when fully open in the sunlight. The form known as *synthinea* is closely related, but is somewhat paler in colour. *A. coronaria* is the well-known "Poppy Anemone." The original type came from the Levant over 300 years ago. It grows 6 to 9 inches high, and has white, red, pink, or purple blossoms. The double-flowered forms are remarkably handsome, and somewhat resemble a double China Aster, with broad segments surrounding the narrower incurved ones in the centre. Various shades of colour have been evolved by selection and cultivation, and now tints of lilac-rose, violet, carmine, crimson, rose, pink, purple and intermediate shades may be had. The brilliant St. Brigid Anemones of various strains belong to this group.

The tuberous roots may be planted in large masses

24



ORIENTAL POPPY (*PAPAVER ORIENTALE*) (24)

in September and October, or from January to March to flower in May and June. After the flowers and leaves have withered the roots may be lifted and stored in sand. The plants like a rich and well-drained loamy soil, and a warm position partially protected from the mid-day sun. The larger roots may be broken in two when lifting, and at planting time they should be dipped in a paste of lime and soot to check attacks of wireworm or other pests.

A. fulgens (*A. hortensis*; *A. pavonina*; *A. stellata*).—A native of South Europe, about 1 foot high, having bright green 3-lobed leaves, the segments of which are more or less deeply divided. The large scarlet-crimson blossoms are remarkably vivid with a paler zone at the base surrounding the central cluster of black stamens. Some very fine forms—both single and double—have been developed of late years, both in England and Ireland in localities that seem to suit their requirements remarkably well. Rich loamy soil, with a dash of lime or chalk and plenty of grit or sand in it, seems to suit these plants best. The tuberous roots are best planted early in September, or not later than October, so as to secure a brilliant display of colour the following April and May. (See Plate 4. fig. 10.)

A. nemorosa. (Wood Anemone). A charming British plant, with pure white flowers in April and May. There is a double-flowered form (*flore pleno*) and a couple of blue flowered ones—of which *Robinsoniana* or *cœrulea*, with its sky-blue blossoms, is most attractive. The rosy forms are rarely seen. The plants flourish in rich loamy soil, in partially shaded spots in the rockery, and may be planted in early autumn.

A. palmata. This Windflower from the Mediterranean shores grows 6 to 9 inches high, and is remarkable for its roundish leathery leaves cut into 3 to 5 lobes, and also for its large golden yellow flowers in May and June. The double flowered form (*flore pleno*) and the white one (*alba*) are rarely seen. The plants may be grown in the same way as *A. fulgens*. *A. ranunculoides* is very similar to the Wood Anemone (*A. nemorosa*) and requires the same treatment. It is easily distinguished by its clear golden yellow flowers in March and April.

II. FIBROUS-ROOTED WINDFLOWERS.

A. alba, 6 inches high, with white flowers in June. *A. albana*, 6 inches high, has yellowish flowers in April and May. *A. alpina*, 6 inches to 2 feet high, has white, creamy, purplish, or yellow blossom in May, according to its several forms. The white and yellow-flowered forms (*alba* and *sulphurea*) are the best. *A. angulosa* (or *Hepatica angulosa*) is a very distinct little plant. It is 6 to 12 inches high, with coarsely-toothed 5-lobed leaves forming a dense green carpet beneath the sky-blue blossoms in February and March. In the variety called *atrocaerulea*, the flowers are of a still deeper tint. The plants like warm and well-drained loamy soil in the rock garden or border. *A. decapetala*, about 18 inches high, has creamy-white or pale primrose-yellow blossoms from May to July. It flourishes in ordinary garden soil and likes partially shaded spots.

A. Hepatica (*Hepatica triloba*), about 6 inches high, may be recognised by its 3-lobed leaves, and blue

blossoms in February and March. There are several fine forms of this species the best known being *alba* (white), *caerulea* (blue, both double and single forms), *Barlowi* (deep sky blue), *carnea* (pink), *lilacina* (mauve), *rubra* (red, double and single forms), and others. They are all excellent plants for the front of the flower border or rockery, and should be placed in a well-drained soil, in a warm, sheltered position. Increased by division after flowering, or from seeds.

A. japonica. This charming and vigorous species was introduced from Japan in 1844. It grows 2 to 3 feet high and has large 3-lobed leaves. The rosy-carmine flowers appear well above the foliage from August until destroyed by the late autumn or winter frosts. There are several choice varieties, the most popular of which is probably the pure white one *alba* (or *Honorine Jobert*). Other white-flowered forms are *Lord Ardilaun*, and *Lady Ardilaun*; *Whirlwind* and *Coupe d'Argent* (both semi-double), while fine rose, blush, or crimson-coloured forms are found in *elegans* (*rosea* and *hybrida*); *Mont Rose*, *rubra*, and *Königin Charlotte von Wurtemberg*.

The Japanese Anemone is easily grown in ordinary deeply-dug garden soil, and likes open sunny situations. The easiest way to propagate it is by careful division of the rootstocks in spring; or by cutting the strongest roots in pieces, about two inches long, in November, or in spring, and cover them with about an inch of nice sandy soil in a cold frame or gentle hot bed.

Other pretty Anemones are *multifida* (or *Hudsoniana*) with red or yellowish flowers in June; *narcissiflora* with elegant leaves and clusters of white

Narcissus-like blossoms from May to July; *polyanthes*, a Himalayan species, with white flowers in May and June; *Pulsatilla*, the well-known "Pasque Flower," with purple silky-haired blossoms in April and May, and its white form, *alba*; *rivularis*, a damp-loving Indian species, about 2 feet high, with loose clusters of white flowers from April to June; *sylvestris*, known as the Snowdrop Anemone, owing to the pure white blossoms, which appear in April and May, looking like snowdrops when drooping in the bud. The double-flowered form (*flore pleno*) is very effective; *vernalis*, remarkable for the shaggy yellowish hairs and white and purple blossoms (or yellow in the variety *lutea*) appearing in April; and *virginiana*, from North America, with purplish flowers in May and June. Most of these kinds flourish in ordinary garden soil, but *narcissiflora*, *vernalis*, and *virginiana*, flourish better in a compost of sandy peat and loam.

ANTENNARIA.—These distinct looking Composites are effective carpet plants in front of the flower border, and also for the rockery. They flourish in a light and well-drained garden soil and delight in sunshine to bring out the silvery whiteness of their foliage. The best known kinds are *dioica* and its varieties, with clusters of pink blossoms in June.

A. tomentosa (or *candida*) forms a dense carpet of silvery white foliage on the ground, and has white blossoms in June and July. All the plants are easily increased by division in spring in a sandy soil.

ANTHEMIS (*Chamomile*).—The Chamomiles are a fairly numerous family, but only a few species are of garden value. They flourish in ordinary garden soil,

25



DOUBLE HERBACEOUS PÆONY (25)



and may indeed be grown in the driest, sunniest, and poorest part of the flower border or rockery. The finely divided fern-like foliage, and Marguerite-like blossoms borne during the summer months, attract attention when grown in bold masses. The best kinds are *Aizoon*, 2 to 4 inches high, with silvery leaves, and white flowers; *Biebersteini*, 1 to 2 feet, white, and its variety *Marschalliana* with yellow flowers; *cinerea*, a charming plant for the rockery, having greyish leaves and white flowers; *macedonica*, a bushy species 6 to 9 inches high, white; and *tinctoria*, about 18 inches high, with large, bright yellow blossoms, each 2 to 3 inches across, on long stalks, in July and August. The forms known as *Kelwayi* (soft clear yellow), *pallida* (primrose yellow), and *E. C. Buxton* (large yellow) are improvements on the type, and are good plants for cutting. All increased by division and seeds.

ANTHERICUM.—This is a large genus of liliaceous perennials with stout rootstocks, and narrow sword-like leaves, but only two or three species out of fifty need be mentioned here, viz.: *A. Liliastrum*, (St. Bruno's Lily) and its varieties *major* and *giganteum*; *A. Liliago*, (St. Bernard's Lily); and *A. ramosum*. They all have white lily-like blossoms from May to August, and as the individual plants are rather "thin," it is best to group them in bold masses in the border. They flourish in a compost of rich sandy loam and leaf soil, and like plenty of moisture during the growing season, but very little in winter. They are best left undisturbed for a few years with a good annual mulching of well-decomposed manure. Increased by division of the rootstocks in spring, or from seeds.

ANTIRRHINUM majus (*Snapdragon*).—The garden varieties of the common Snapdragon form one of the showiest groups of flowering plants during the summer and autumn months. They vary in height from 6 to 24 inches or more, and are consequently useful in the rock garden, flower border, tops of old walls or ruins, or in large beds by themselves on the grass. They like a rich and well-drained soil and plenty of sunshine, and to secure the best effects it is better to keep the dwarf, medium, or tall varieties by themselves rather than mix them. Almost innumerable shades of colour from pure white to deep crimson and bright yellow, with intermediate shades, are now to be obtained. Besides those having one pure or “self” colour, there are many forms in which the blossoms are flaked, splashed, or speckled with quite a distinct shade. Snapdragons are easily raised from seeds sown in gentle heat about February or March in a compost of light sandy soil, and not too close together, and in autumn in cold frames or warm sheltered borders, so as to flower earlier the following year. Any choice or remarkable varieties are best perpetuated by means of cuttings. These consist of the non-flowering side and basal shoots, fairly well-ripened, and inserted in sandy soil in August or September in a cold frame or handlight. (Plate 32, fig. 87.)

AQUILEGIA (*Columbine*).—These charming plants belong to the Buttercup family, notwithstanding the curious appearance of their blossoms, the petals of which are produced into a tubular horn-shaped spur or nectary curved at the tips. They are easily grown in ordinary good garden soil, preferably a rich well-

drained loam with plenty of humus in it, and may be left undisturbed for a few years, provided they receive a good mulching of well-decayed manure annually in autumn or winter. The blossoms are freely produced from May to July, and are usually thrown well above the ornamentally-divided leaves. By frequent cutting for decorative purposes, fresh flowers will continue to appear, however, well into the autumn. Propagation is most readily effected by sowing seeds in the open air when ripe, or in cold frames, and also by dividing the crowns in the spring. There are several fine species, among them being *alpina*, a charming plant about a foot high, with large deep blue flowers in May; *atropurpurea*, 2 to 3 feet high, deep purple, and its variety *Fischeriana* which flowers later in June; *Bertoloni*, 1 foot high, with blue flowers in June and July; *canadensis*, 2 feet, with scarlet and yellow flowers, from June to August; *chrysantha*, 3 to 4 feet, yellow, with a bright canary yellow variety (*flavescens*); *caerulea*, 12 to 18 inches high, flowers blue and white, with long spurs (Plate 14, fig. 39); *formosa* or *californica*, 2 to 3 feet, bright orange red; *fragrans* 1 to 2 feet, yellow, striped; *glandulosa*, 1 to 2 feet, deep blue, with several varieties; *sibirica*, 1 to 2 feet, bright lilac. The double-flowered variety is very attractive; it has the spurs pointing downwards instead of upwards, the blossoms being blue and white; *Skinneri*, a grand Columbine from the Guatemalan mountains. It grows 2 to 3 feet high, and has large red, green, and yellow blossoms, with long orange-red spurs; *vulgaris*, the common British Columbine, 1 to 3 feet high, with blue, purple, or white blossoms according to its

numerous varieties, both double and single. Among the latter *Wittmanniana*, with bright purple and white flowers, deserves special mention.

Besides the above, there are now many beautiful hybrid Columbines raised from such kinds as *chrysantha*, *cærulea*, *glandulosa*, *sibirica*, *Skinneri*, and *vulgaris* (Plate 14, fig. 40). They possess great range of colour and size, and those forms having the brightest and purest shades, and longest spurs are most highly prized. Amongst the best known forms are *cærulea hybrida*, and its double-flowered form; *californica hybrida*, red and yellow; *haylodgensis*, blue and yellow; *caryophylloides*, red and yellow with double forms; *grandiflora*, blue; *Stuarti*, a fine form closely related to *glandulosa* with large bright blue and white flowers.

ARABIS albida (*Rock Cress*).—Of the 60 or more species belonging to the genus, this is the best known in gardens. It is a procumbent perennial with bluntly-toothed grey-green leaves and white cross-shaped flowers from January to May. It flourishes in any garden soil and spreads with great freedom, making a good evergreen carpet beneath taller plants. It is also useful for the rock garden, and as an edging to borders and beds. The variegated form is easily recognised by its foliage. Of late years the double white form called *flore pleno* or "Snowdrift," has become very popular, not only because it is as free as the common form, but because its pure white double blossoms, with many petals, retain their freshness for a longer period. The species known as *alpina* has also white flowers, and is often confused with *albida*



SINGLE HERBACEOUS PÆONY (26-28)

proper. All easily increased by division after flowering is over in early summer, or from seeds.

ARGEMONE grandiflora.—This Prickly Poppy from Mexico, although really a perennial, is best treated as a half-hardy annual. It has ornamental blue-green, poppy-like leaves with irregular spiny-toothed margins, and during the summer months produces large, snowy-white flowers, with a bunch of golden-yellow stamens in the centre. It grows 2 to 3 feet high, and flourishes in ordinary good garden soil, in a warm sunny spot. It is raised from seeds sown in gentle heat about March. Other species are *albiflora* and *hirsuta*, with white flowers; and *mexicana* (Devil's Fig) and *ochroleuca* with yellow ones.

ARMERIA (*Thrift. Sea Pink*).—The Thrifts are excellent plants for edgings, or for making evergreen grass-like tufts in the rock garden or border. The hardy kinds thrive in ordinary well-drained soil, and are easily increased in spring or early autumn by division. Seeds may also be sown, but are scarcely worth the trouble. When the flower heads appear above the deep green foliage, the plants are then more highly effective than ever. The best kinds are *alpina*, and its variety *rosea*, with pale and deep rose flowers; *bracteata rubra*, bright crimson; *cephalotes* (or *latifolia*) rose, and its white variety *alba*, the red one (*rubra*) with flowers on stalks about 18 inches high; *cæspitosa*, pale-lilac, very dwarf; *juncea* rosy-pink; *maritima*, pink or rose, and its varieties; *Laucheana*, bright rose; *alba*, white; *Crimson Gem*, bright crimson; and *Ewart*, crimson-purple; *plantaginea*, bright rose, and its variety *splendens*.

ARNEBIA echioides (*Prophet's Flower*).—This beautiful Armenian perennial, about a foot high, is remarkable for its heads of bright primrose-yellow blossoms which appear from May to August. When expanded about a day or two they develop a conspicuous heart-shaped blotch of deep purple and maroon between the lobes of the corolla. These blotches gradually fade away with age, leaving the blossoms once again almost pure yellow. The same phenomenon takes place in the yellow flowers of *A. cornuta*, an annual 1½ to 2 feet high. Other species are *Griffithi*, an annual, and *macrothyrsa*, a perennial, both with somewhat similar yellow blossoms.

The plants flourish in a rich sandy loam in a partially shaded spot, rather than one exposed to the full glare of the sun. The perennials are perhaps best increased by offsets or cuttings taken in summer or early autumn, and inserted in rich sandy soil under glass. Seeds may be sown in spring, and pieces of the roots placed in sandy soil in a hot-bed sometimes develop new plants. (See Plate 11, fig. 31.)

ARUM crinitum (*Dragon's Mouth*).—A curious-looking Corsican plant, about 18 inches high, with lobed leaves and large fetid-smelling flowers, which appear from May to July. The blooms are composed of a drooping hairy purple spadix, and a large flattish brown spathe, blotched with purple, and hairy on the inner surface. Closely related is *A. Dracunculus*, the Dragon Arum, which grows 2 to 3 feet high, and has deep purple or claret-coloured spathes with a brownish-red spadix standing up in the centre. In *A. italicum*, the triangular hastate leaves are not so much cut, and

in the variety *marmoratum* or *pictum* they are blotched with creamy yellow. The spathe is greenish yellow or whitish, with a creamy-white or yellowish spadix. *A. palestinum* (or *sanctum*) from the Holy Land resembles the ordinary white Arum Lily in foliage, but the flowers are of a deep velvety purple on the inner surface. The common "Lords and Ladies," or "Cuckoo Pint" of our ditches (*A. maculatum*), is closely related to the foregoing. It is easily recognised by its triangular heart-shaped leaves, often spotted with black, its yellow-green spathes enclosing a dull-purplish or yellow spadix on which several brilliant scarlet, slimy berries are borne in autumn.

Any moist soil and more or less shady spot will suit the common British Arum; but a sandy loam, and warm sheltered spots are necessary to secure good results from the other kinds. Indeed in bleak localities it would be wise to protect the tuberous rootstocks with litter or bracken in winter. The easiest way to increase the plants is by offsets from rootstocks.

ARUNDO Donax.—This is the Great Reed of South Europe, where it grows 12 to 15 feet high, but only about half that size in our climate. The stout erect stems are furnished with gracefully-recurving lance-shaped leaves of a blue green tint. In the form called *variegata*, or *versicolor*, the leaves are conspicuously striped with creamy-white, and the stems do not grow quite as tall as the green-leaved type. *A. conspicua* from New Zealand grows 3 to 12 feet high, and has long curving leaves. These two species should be grown in rich and well-drained loamy soil in sunny parts of the garden, and in severe winters the crowns

should be protected from frost by a covering of leaves or litter. Both species should be planted in bold masses and may be most easily increased by carefully dividing the rootstocks in spring. The common British Reed (*A. Phragmites*) and its variegated form are also attractive plants, growing from 6 to 10 feet high. They flourish near water.

ASPERULA odorata (*Sweet Woodruff*).—This is a charming old native plant, recognised by its square stems, whorls of minutely-toothed leaves, and masses of small white sweet-scented flowers in May and June. It is an excellent little plant for the rockery or front of the flower border, and may be easily increased by division in spring or early autumn.

ASPHODELUS ramosus.—This graceful plant is probably the best known of the several species of Asphodel. It grows 4 to 5 feet high, and during summer its erect spikes of white flowers stand well above the stiffish sword-like leaves. Other white-flowered Asphodels are *albus*, *comosus*, *fistulosus*, and *subalpinus*, all about 2 feet high. To these may be added the yellow-flowered “King’s Spear,” *A. luteus* (or *Asphodeline lutea*) and its double-flowered variety. The Asphodels flourish in ordinary good garden soil that has been well dug and manured. They may be increased by dividing the rootstocks in spring.

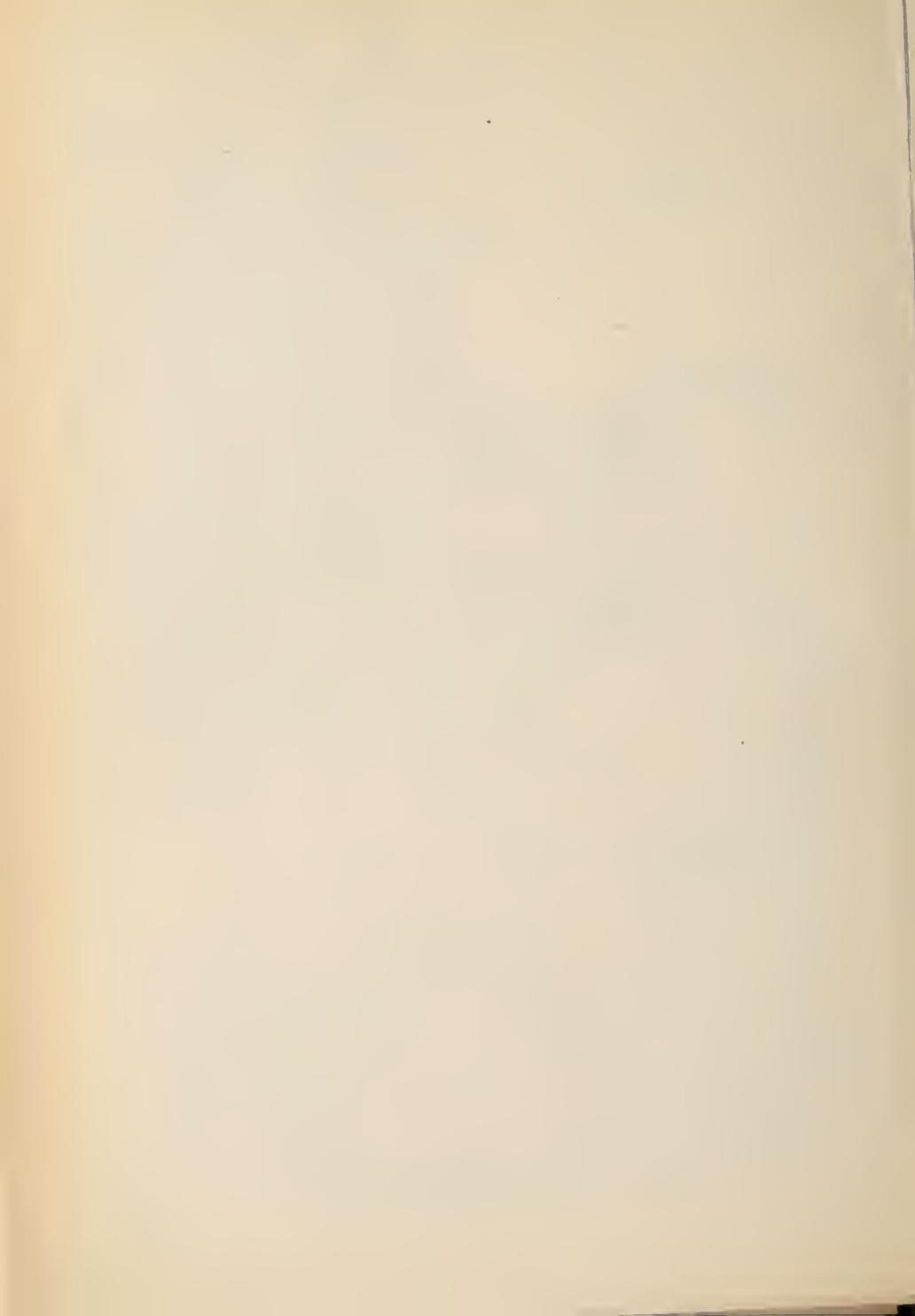
ASTER (*Starwort*; *Michaelmas Daisy*).—These Starworts or Michaelmas Daisies proper, are, for the most part, ornamental plants that flower from the end of August, until cut down by the frost. Several species, however, blossom as early as May and June. Most of the Michaelmas Daisies grow so easily in



DOUBLE MARSH MARIGOLD (*CALTHA PALUSTRIS* FL. PL.) (29)

JACOB'S LADDER (*POLEMONIUM CŒRULEUM*) (30)

PROPHET FLOWER (*ARNEBIA ECHIOIDES*) (31)



ordinary garden soil, that they can scarcely be said to require cultivation. They vary in height from 1 to 6 feet, and spread with such great rapidity by means of root-suckers, that almost every year it becomes necessary either to re-arrange the plants, or to reduce the rooting area of individuals. The taller growing sorts require tying to a stout stake or two to prevent them from being blown down by the wind. In the late autumn or winter, the dead stems should be cut down to the ground, as they often present a most untidy aspect. Asters are easily increased by dividing the rootstocks in spring, and also by inserting plump cuttings from the shoots in sandy soil in a cold frame.

Although the individual flower-heads of most kinds are not very large, they are nevertheless produced in such profusion that the plants are literally covered with blossom. For cutting purposes there are not many plants to excel or equal the Michaelmas Daisies. The blossoms of some varieties last much longer than others, but the best results are secured by cutting the sprays early in the morning, rather than at mid-day. As space will not permit of detailed descriptions, the following select list of the best kinds arranged according to the colour may be useful. The height is given in feet in brackets.

White-flowered kinds.—*Acuminatus* (2), *corymbosus* (2), *diffusus* (2), *dumosus* (3), *ericoides* (3), *graminifolius* ($\frac{1}{2}$), *longifolius* (3), *macrophyllus* (2), *multiflorus* (3), *ptarmicoides* (2), *Sturi* ($\frac{1}{2}$), *Tradescanti* (3), *umbellatus* (5-6), *undulatus* (3), *vimineus* ($2\frac{1}{2}$).

Blue-flowered kinds.—*Acris* (2), *cordifolius* (2), *linarifolius* (2) (Plate 33, fig. 88), *Novi-Belgi* (3-6),

paniculatus (4), *patens* (2), *peregrinus* (1), *puniceus* (4-6), *sericeus*, (2), *sibiricus* (2), *spectabilis* (2), *Stracheyi* ($\frac{1}{2}$), *Townshendi* (3).

Purple-flowered kinds.—*Alpinus* (1), *Amellus* vars. (2) (Plate 33, fig. 89), *diplostephioides* ($1\frac{1}{2}$), *lævis* (2-6), *Noræ-Angliæ* (4-6), *sikkimensis* (3), *tricephalus* (1-3).

Lilac-flowered kinds.—*Amethystinus* (4), *Herveyi* (1-2), *Lindleyanus* (2), *Shorti* (2-4), *turbinellus* (3).

A well-known yellow-flowered kind is *A. Linosyris*, popularly known as Goldilocks.

ASTILBE.—These are graceful border plants with much divided foliage and feathery plumes of blossoms. They all flourish in a good and well-drained soil, and like warm sheltered positions, as they are mostly native of India, China, and Japan. The best known species is *japonica*, a plant largely grown in pots for spring decorations, and commonly, but erroneously called a *Spiræa*. It has thick fleshy rootstocks, glossy deep green foliage, and erect panicles of pure white blossoms on stalks $1\frac{1}{2}$ to 2 feet high. *A. chinensis* resembles it in appearance, but is rather taller and not so compact in growth; it produces trusses of rosy blossoms during the summer and autumn months. A fine variety of it called *Davidi*, has recently been introduced from Central Asia. It grows from 3 to 5 feet high, and has pyramidal panicles of violet-purple flowers. *A. rivularis*, from Nepal, grows 3 to 4 feet high, and produces its creamy-white blossoms from July to September. It is an excellent plant for moist borders or near the edges of ponds, streams, &c. *A. Thunbergi*, from Japan, grows about 2 feet high, and has soft rosy or pure white blossoms in summer.

The variety *rosea* has gracefully arching spikes of pale-rose flowers. *A. Lemoinei* has white plumes of blossom in July or August, and has given rise to a fine hybrid. *A. chinensis* crossed with *A. compacta* has recently produced a magnificent rosy-flowered hybrid. All the kinds are most easily increased by division of the rootstock in spring or early autumn.

ASTRANTIA major (*Masterwort*).—This distinct looking plant of the Carrot family is really a native of the Alps. It grows 1 to 2 feet high, and from June to August produces its heads of small white or pink blossoms which are surrounded with an involucre of distinctly veined pinkish bracts. Other species are *carniolica*, white; *helleborifolia*, pink; and *minor*, rosy-white. They all flourish in ordinary soil with a little sand or grit, and plenty of humus in it, and are most readily increased by division in spring.

AUBRIETIA (*Purple Rock Cress*).—Charming ever-green plants for carpeting slopes or nooks in the rockery, or for an edging or carpet in shrubberies and borders. They like a rich sandy soil, and may be increased from seeds and cuttings; by layering the slender prostrate stems during the summer; and also by carefully dividing the stocks in early autumn or in spring. There are many fine kinds in cultivation, all remarkable for the profusion with which they bear their purple, lilac, or violet-purple blossoms from March to June. *A. deltoidea* is the best-known species with lilac-purple flowers. There are several forms with distinct names, like *Columnæ*, *Leichtlini*, and *Mooreana*, recognised by their different shades of purple. Other forms are *Bougainvillei* (light purple); *Campbelli* or

Hendersoni (deep violet-blue); *Eyreii* (deep violet-purple); *Frœbeli* (reddish-purple); *græca* (lilac); *purpurea*, purple, and its fine sub-variety *Dr. Mules*, with vivid purple-violet blossoms; *Souvenir de William Ingram* (rich rose-purple); and *violacea* (violet-purple) all practically forms of *deltoidea*. A rarer species is *A. tauricola* with compact masses of neat foliage, and masses of rose-purple flowers.

AURICULA (*Primula Auricula*).—These charming florists' flowers are usually divided into two main groups, called the "Show," and "Alpine." The show group is divided into "selfs" and "edged" varieties, the latter being green, grey, or white, according to the presence, or absence, or density of the powdery deposit, or "farina," on the edge of the blossom. The Alpine group consists of self-coloured or shaded varieties, and are generally more hardy and useful for the decoration of the flower border. All kinds of Auriculas, however, although perfectly hardy, give the most satisfactory results if they can be grown in a cold frame during the winter months, as they often suffer a good deal more from wet than from cold. A good loamy soil, enriched with leaf soil or well-decayed cow-manure, and kept open by sand or grit, makes a capital compost for plants to be grown in pots; and the soil in the open garden should conform to that ideal as far as possible. The plants like plenty of moisture when in full growth, and if planted in warm sheltered spots—partially shaded from hot sunshine—will make a lovely picture in April and May. In mild seasons they often bloom a second time in autumn, and even as late as Christmas, but such



LENTEN ROSES (*HELLEBORUS ORIENTALIS* VARS.) (32-35)

flowers lack substance and should be pinched off, as they only weaken the plant.

There are now many fine varieties of Alpine, Show, and Fancy Auriculas, to be had from the nursery-men. The "Alpine" varieties, especially the bright golden-yellow and cream-centred forms are best for the open air, and may be used on banks, borders, or rockery with great effect if boldly massed. They are easily increased by offsets soon after flowering is over, or early in autumn. When plants are raised from seeds the latter should be selected from the choicest varieties and best strains.

The chief dangers to Auriculas in the open air are a wet sour soil, and the attacks of slugs. The latter can be kept in check by a dusting around the plants with a little lime and soot; the former can be rectified by digging and the addition of sand or grit to the soil.

BAPTISIA australis.—This is a fine North American perennial, 4 to 6 feet high, having greyish-green leaves (composed of three leaflets) and purple or blue pea-like blossoms with white "keels" in June and July. The plant flourishes in ordinary good garden soil, and may be increased from seeds sown in spring, or by careful division of the rootstock.

BELLIS perennis (*Daisy*).—From the common Daisy of our pastures and lawns, many fine varieties have been developed by careful selection and cultivation. The yellow centre has been suppressed, or rather converted into strap-shaped florets like the outer row, and double white, crimson, and striped forms have been evolved. *Diana*, red; *Goliath*, rose and white; *La Fiancée*, pure white; *Pink Beauty*, pink; and *Rob*

Roy, bright crimson, are a few of the best known kinds, to which may be added the "Hen and Chickens" Daisy (*prolifera*), remarkable for having a cluster of small flower-heads around a larger central one. All kinds are easily increased by division or seeds.

The "Blue Daisy of Morocco" (*B. rotundifolia caeruleascens*) is a charming perennial, 4 to 6 inches high, with pale blue or magenta-purple flowers from May to August. It is rather tender and requires protection in bleak spots in winter.

BOCCONIA cordata (*Plume Poppy*).—This stately Chinese perennial may be easily recognised by its large and ornamental fig-like leaves, remarkable for the conspicuous blue-green "bloom" on the surface. The orange-yellow roots are thick and fleshy, and penetrate the soil to a depth of 2 or 3 feet, while the stems sometimes attain a height of 8 feet, with feathery plumes of creamy or buff-coloured flowers during the summer months. *B. microcarpa* seems to be very similar in appearance, but has larger panicles of blossom, and whiter looking foliage. Both kinds like a rich loamy soil, deeply dug and well manured. When planted in bold clumps or beds by themselves in sheltered sunny spots they are unique in appearance. New plants may be secured by dividing the brittle roots in spring or early autumn, by cuttings of the side shoots in summer, or by seeds sown in spring or autumn in cold frames or with a little heat.

BIGELOVIA graveolens.—This bushy composite from Colorado grows about 3 feet high, and in appearance resembles the yellow Aster or Goldilocks (*Aster Linosyris*). The long linear leaves are silvery-grey,

and in autumn feathery plumes of sweet-scented golden-yellow blossoms appear. There is a variety called *albicaulis*, dwarfer in habit, and having whitish stems. The culture and propagation is exactly the same as for the Michaelmas Daisies (see p. 40).

BOLTONIA.—These plants, sometimes called False Asters, are very closely related to the true Asters or Michaelmas Daisies, and require precisely the same treatment. They flourish in ordinary soil, and are easily increased by division or seed. The best known kinds are: *asteroides*, 3 to 6 feet high, with large trusses of blush-white blossoms, and its variety *decurrens* with larger pink flowers and winged stems; *incisa*, 4 feet high, with white flowers; and *latisquama*, 3 to 4 feet high, with bright lilac blossoms. All the kinds are excellent plants for cutting, and may be had in bloom from July to September, or later.

BRACHYCOME iberidifolia (*Swan River Daisy*).—A pretty Australian annual, 8 to 12 inches high, having finely-divided leaves and loose clusters of bright blue flower-heads, each an inch across. The variety *alba* has white blossoms, and closely related to it is the dwarfer kind called *Sinclairi*. These plants are best treated as half-hardy annuals, and may be raised from seed in spring as recommended at p. 8.

BRYONIA dioica (*Common Bryony*).—This British weed is remarkable for its enormous fleshy roots—almost as long and as thick as a man's arm—and for the ornamental appearance of its heart-shaped, lobed leaves when the stems clamber over old hedges, fences, or trellises. The female plants are still further beautified in autumn, when they are covered with bright

red berries. The plants grow in any soil, and once in a garden may be allowed to look after themselves.

BULBOUS PLANTS.—As it is impossible within the limits of this volume to describe in detail the many beautiful species of hardy bulbous plants, only a brief sketch of the most popular kinds is attempted. The subject will be dealt with fully in a companion volume. By “bulbous” is meant those plants in which the thickened modified leaves are arranged in concentric coats as in the Tulip, Hyacinth, and Daffodil, or in scales like those of the Liliums. To these may be added the Crocuses, Montbretias, and Gladioli, where the stems instead of the leaves are modified, and are technically known as “corms.”

Speaking generally, bulbous plants require a more gritty or sandy soil than others. Good drainage is essential to prevent decay, but in all other respects the soil should be as well dug and manured as for other plants.

As the bulbs vary a good deal in size, from the small Snowdrop and Scilla to the large Liliums, it is obvious that they are not all to be planted at the same depth in the soil. A good general rule to follow when planting bulbs in the open air is to cover them with about once and a half to twice their own depth of soil. Thus, if a bulb is 2 inches deep, it should have about 3 or 4 inches of soil covering it. The larger the bulb the deeper it is planted, often chiefly as a protection against frost. The same bulbs, when grown under glass, may have their ends just level or even jutting out of the soil.

The following kinds of bulbs may be planted in



LADY'S LOCKET (*DICENTRA SPECTABILIS*) (36)

GENTIANA ACAULIS (37)

ERYTHRONIUM DENS-CANIS (38)



autumn—say in September and October—to secure a display of flowers early the following year:—Snow-drops, Crocuses, Hyacinths, Daffodils and Narcissi, Tulips, Scillas, Chionodoxas, Muscari (Grape Hyacinth) Fritillarias, Calochortus (Mariposa Lilies), some of which are shown on Plate 27; Erythroniums or Dog's Tooth Violet, shown on Plate 13, fig. 38. About March, if the weather is mild and open, the bulbs of many Liliiums like candidum, auratum, tigrinum, croceum, chalcedonicum, elegans, longiflorum, Martagon, monadelphum, pardalinum, superbum, and umbellatum, may be planted; also the corms of such Gladioli as brenchleyensis, Childsi, Lemoinei, and Nanceianus; and of Montbretia crocosmiæflora, all of which flower during the summer and early autumn months.

BUPHTHALMUM cordifolium (*Telekia speciosa*; *Ox-eye*).—This perennial grows 3 to 5 feet high, its large heart-shaped leaves, a foot or more long, are coarsely-toothed on the margins, and give the plant a bold and ornamental appearance. The deep orange-yellow flower-heads, each 3 to 5 inches across, with linear ray-florets, surrounding a purplish centre, appear from July onwards, often till the frost comes. The plants flourish in any good garden soil and may be easily increased by division in spring or early autumn, or from seeds. Other species of Ox-eye are *grandiflorum*, with smooth lance-shaped leaves; and *salicifolium*, with lance-shaped hairy leaves. Effective on the margins of lakes, &c.

CALENDULA officinalis (*Marigold*).—The common Yellow Marigold is a strong-growing annual that requires but little care in its cultivation. A few fine

varieties, however, like *Meteor*, *Orange Cockade*, and *Orange King*, in which the blossoms are larger and finer, and more highly coloured and tinted, may be grown with advantage in bold masses in beds or borders. They are easily raised from seeds in spring or autumn. (Plate 32, fig. 85.)

CALLIRHOE.—These ornamental Mallow-like plants flourish in ordinary good garden soil of a gritty nature, but being natives of the United States require rather warm and sheltered spots. *C. involu-crata*, a trailing plant 6 to 9 feet high, with divided leaves, and crimson mallow-like flowers in July, is probably the best known species. It is a good plant for rambling over rockeries or on the border, but may also be trained on walls or trellises. *C. digitata*, 2 to 3 feet high, may be recognised by its leaves being cut into 6 or 7 spreading lobes, and its long-stalked purple blossoms in July and August. Both kinds may be raised from seeds sown in gentle heat in spring, or by division of the rootstocks. Other kinds are *C. Papaver*, bright purple red, and *C. pedata*, with cherry-red blossoms.

CALLISTEPHUS hortensis.—This is the parent of the florists' "China Aster," and is more frequently to be met with in catalogues under the name of *Aster sinensis* than the proper one here given. It is a half-hardy annual, native of China, and grows from 1 to 2 feet high, having stiffish hairy stems, and ovate, toothed leaves. The flower-heads, 2 to 4 inches or more across, are freely produced from July to November, the strap-shaped ray florets being of a beautiful mauve purple while the centre or disc is bright yellow. Now

there are many distinct races or groups of China Aster with many shades of colour. They can all be raised easily from seed sown thinly in spring in a light sandy soil. The seedlings are "pricked out" and "hardened off," and by the end of May are fit for the open air. They may be used in bold masses or groups, or in beds by themselves, and so long as the soil is fairly rich and well drained, they will grow with great freedom and flower profusely.

CALTHA palustris (*Marsh Marigold*).—The common Marsh Marigold, or King Cup, flourishes in marshy spots near the banks of ponds, streams, and rivers. It has large glossy green roundish kidney-shaped leaves, and the large golden-yellow blossoms from March to June. The double-flowered variety (Plate 11, fig. 29) looks very fine, and with the single type may be easily grown in moist garden soil, or on the banks of lakes, ponds, &c. Once established they may be allowed to look after themselves; otherwise the easiest way to increase the plants is by dividing the rootstocks. Other Marsh Marigolds worth a place are *biflora* and *leptosepala*, both with white flowers.

CALYSTEGIA (*Bearbind*).—These charming climbers are usually ranked as weeds, and indeed become so when not kept to their legitimate use of covering old hedges, arbours, trellises, &c. They flourish in any garden soil, and rapidly increase by means of the creeping roots. The common British Bearbind (*C. Sepium*) is a lovely plant with broadly hastate leaves and large white or pinkish bell-shaped flowers during the summer and autumn months. A double-flowered form of a Chinese species (*C. pubes-*

cens fl. pl.), has somewhat similar foliage, but the large double blossoms are composed of long wavy, and reflexed petals, varying in colour from pale to deep rose. *C. Soldanella* is a native of our sandy shores. It has trailing stems, roundish kidney-shaped leaves, and pale purple or pink blooms. It is a good plant for trailing over stones, in the rock garden, in sandy soil. There are a few other species not so well known, the best perhaps being *dahurica* from the Caucasus, having oblong heart-shaped leaves and rosy purple flowers. (See also *Convolvulus*, and *Ipomœa*.)

CAMPANULA (*Bell-flower*).—A large genus composed of annuals, biennials, and perennials, differing greatly in size, habit, and blossom, but all possessing a certain gracefulness and charm.

Annuals.—Most of the annual kinds like *drabæfolia*, *Erinus*, have blue blossoms, but *macrostyla* (remarkable for its large club-like style in the centre of the flower) has purple blossoms conspicuously veined with violet; while the flowers of *punctata* are white spotted with red within. These and many other annual Bell-flowers are easily raised from seed sown in gentle heat in spring (see p. 9).

Biennials.—Of the biennial kinds there are many species—mostly with blue or purple flowers—but none of them compares with the well-known Canterbury Bell (*C. Medium*) and its varieties. The blossoms of a few forms are shown on Plate 19, and a white one is also depicted on Plate 25. There are many still finer forms in cultivation, having broad bell-shaped corollas with white, blue, purple, rose, pink and intermediate shades of colour. One very remarkable

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COLUMBINES (AQUILEGIA CÆRULEA) (39)

AQUILEGIA HYBRIDA (40)

variety of the Canterbury Bell is that known as *calycanthema*, in which the calyx has assumed the form and colour of the corolla; and in some variations there is the appearance of two or three "bells" inserted one within another. The "Cup and Saucer," and "Hose and Hose" forms belong to this group. Canterbury Bells are easily raised from seeds sown in spring or early summer, the young plants being pricked out when large enough, and transplanted about September—12 to 18 inches apart—to their flowering quarters for next year.

Perennials.—There are more than 100 species, and almost innumerable varieties or seedling forms of perennial Bell-flowers. They are all beautiful, and may be utilised in various ways according to their height and habit, many being more particularly suited for the rock garden than for the ordinary border.

Amongst those most useful for clothing the rock garden may be mentioned *abietina*, 9 to 15 inches high, with purple-red or pale blue flowers from May to July; *Allioni*, 4 inches, with blue (or rarely-white) flowers from July to September; *alpina*, 3 to 9 inches, with deep blue flowers from May to July; *cæspitosa*, 4 to 6 inches, deep blue, May to August, and white in the variety *alba*; *carpatica*, 9 to 12 inches, blue, and also white and lilac from June to August; *cenisia*, 3 to 6 inches, blue; *Elatines*, a trailing species, about 3 inches high, with bluish-purple flowers from June to August; *garganica*, 3 to 6 inches, blue, May to September, also a white variety; *haylodgensis*, 6 to 9 inches, with blue flowers in August (supposed to be a hybrid between

carpatica and *pulla* or *pusilla*); *Portenschlagiana* or *muralis*, 3 inches, an excellent carpet plant with pale purple flowers from May to August; *pulla*, a charming plant, 3 to 6 inches high, with violet-blue flowers in June and July. Closely related is a hybrid form called *G. F. Wilson*, about 1 foot high, with deep blue flowers; *pusilla*, 4 to 6 inches high, blue, July and August; also a white variety; *Raineri*, 3 inches high, blue, very attractive to slugs; *rotundifolia*, the Harebell, 6 to 12 inches high, blue and white; *Waldsteiniana*, 3 to 6 inches high, violet-blue; *Warleyi*, 6 inches high, bright purple with 2 alternating corollas; *Zoysi*, 3 inches high, pale blue.

All the foregoing kinds flourish in rich, sandy, and well-drained soil, overhanging the stones, or furnishing a nook here and there in the rock garden. They may be increased by seeds, cuttings, or division. The following Bell-flowers being taller and more bushy in habit may be grown in the flower border in groups, or in beds by themselves. Except where otherwise stated they all have bluish-violet or purple flowers. The height, in feet, is given in brackets after each name: *alliariæfolia* (1½ feet), white; *betonicæfolia* (1½ feet); *bononiensis* (2 to 3 feet), also a white variety; *glomerata* (1 to 2 feet), with a fine variety called *dahurica*, a double-flowered one (*flore pleno*), and a white one (*alba*); *grandis* (1 to 2 feet), also a white variety; *Hendersoni* (1 foot); *lactiflora* (2 to 6 feet), milky white, also a blue variety; *latifolia* (3 to 6 feet), with several varieties (Plate 24, fig. 64), the best being *Burghalti* and *Van Houttei*, and a white one, *macrantha alba* (fig. 65); *mirabilis* (1 to 2 feet);

nobilis (1 to 2 feet), violet, creamy, or white; *persicifolia* (1 to 3 feet), a first-rate garden plant, with several fine white varieties, the best being *grandiflora*, and a double one; *pyramidalis* (4 to 6 feet), with a white form, often grown in greenhouses; *rapunculoides* (2 to 4 feet); *Rapunculus*, the Rampion (2 to 3 feet); *rhomboidalis* (1 to 2 feet); *Trachelium* (2 to 3 feet), also a white form and a double one.

CARBENIA benedicta (*Blessed Thistle*).—This distinct-looking plant is a native of both sides of the Mediterranean. It is chiefly remarkable for its large wavy leaves, which are pinnately cut into spiny lobes, being blotched and marbled with white, rather than for its roundish yellow flower heads. Owing to its ornamental aspect it is used with effect in the flower border, when less choice plants will not flourish. It is easily raised from seeds in spring.

CARNATION.—The Carnations, Cloves, and Picotees are double-flowered forms of *Dianthus Caryophyllus*, and for many centuries have been popular garden plants. Careful selection and cultivation have brought the Carnations proper to a very high level, and three main groups called Bizarres, Flakes, and Selves are now recognised by gardeners. The “Bizarres” have distinct spots or stripes of 2 or 3 shades on a ground of a different colour; the “Flakes” have large stripes or flakes of one colour on a pure ground of another colour; and the “Selves” have the blossoms of a uniform shade throughout. The best forms are those in which the colours are distinct and clear, and harmonise with each other; and the individual flowers should be circular in outline with a calyx

that is not liable to burst or split. What are known as "Malmaison" Carnations are a distinct section which originally sported from *D. Caryophyllus*, and are only fit for greenhouse cultivation. During the summer months, however, the plants may be grown in the open air to secure a better ripening of the growths. The "Tree Carnations," supposed to be derived from a variety called *fruticosus*, are tall-growing plants, the stems of which continue to branch and develop blooms in succession for a long period, and hence are also known as "Perpetual" Flowering Carnations. At one time they were not very highly thought of, but of recent years they have become very popular. They are brought to perfection under glass, and many excellent and free-flowering varieties are now obtainable. (Specimens are shown on Plate 23.)

The various sections of Carnations flourish in a rich and well-drained loamy soil, with plenty of sand and leaf soil in it. In the open air, particular attention should be given to having the soil deeply dug; and if at all inclined to be heavy and wet, it should be made lighter and drier by the addition of grit, or mortar rubble, and be also raised a few inches above the surrounding level to ensure better drainage.

The best time for planting Carnations in the open air is the first or second week in September, or else about the end of March or early in April. Late planting in autumn often leads to disaster, as the young plants have not sufficient time to become established before the winter sets in.

The simplest plan to raise a supply of sturdy young plants is by "layering." This operation is



DOUBLE AND SINGLE PYRETHRUMS (41-44)

best done about the second or third week in July, and consists in making an upward slit with a sharp knife in the stems, just at the point where the well-ripened green portion adjoins the older and more woody portion near the base. The slit when made about an inch long through the centre of stem and into a joint produces a "tongue." The freshly cut surface of this comes in contact with the previously prepared sandy soil, and in the course of three to six weeks a mass of fibrous roots will issue from it. To keep the layers in place bent wire pegs or cheap hairpins (1*d.* per 100) are used to hold them in position. A handful or two of finely prepared sandy soil is placed over the stems where they have been pegged down, and afterwards a good watering with a "rose" can is given to settle the soil about them. The greenhouse varieties are layered in the same way under glass. Carnations may also be increased from cuttings or "pipings," but this process is more effective under glass than in the open air. Well-ripened and non-flowering shoots are secured and firmly dibbled into a very sandy soil at almost any season when they can be secured in greenhouses. Sometimes, also, the shoots of tall growing varieties are slit through as in layering, and then a little moist sphagnum moss and leaf soil is tied round the half-severed stem. In the course of three or four weeks roots push through the moss, and then the portion is cut off and potted.

Carnations may also be raised from seeds sown about the end of March in sandy well-drained soil. When the young plants are large enough to handle easily, they should be pricked out into shallow boxes or pans,

so as to be ready for the open ground in summer. Thousands of worthless seedlings, called "Jacks," are raised every year in some parts of the country, and are imposed by costermongers in spring on unsuspecting amateurs as choice double-flowered varieties.

Pests, &c.—Carnations are subject to attacks of a maggot, which works its way down the centre of the shoots, and if not eradicated with a long needle will soon destroy the plants. Wireworms in the soil do great mischief, and may be trapped in scooped-out pieces of potato, which should be examined each day. Earwigs are often a nuisance at flowering time, but may be trapped in pots containing a little moss, or in crumpled pieces of paper steeped beforehand in a sugary solution. Slugs are very partial to the young shoots, and are best checked by hand-picking, and strewing a little soot round the base of the plants.

There is only one other important point to be remembered in Carnation growing, and that is to provide neat stakes to support the flowering stems; otherwise the blossoms will droop to the ground and get soiled.

"Marguerite" Carnations are lovely annuals, remarkable for their beautifully fringed blossoms of various colours from deep crimson to pure white. The seeds should be grown in gentle heat in February or March. The young plants are grown steadily on till the end of May or early June, when they can be planted out. Seeds from a good source yield about 80 per cent. of double flowers.

CARTHAMUS tinctorious (*Saffron Thistle* or *Safflower*).—This showy Egyptian annual grows 2 to 3

feet high, and has white-veined, toothed and spiny leaves. The flowers appear in July and August, and are remarkable for their brilliant orange-red colour. The plants may be raised from seeds sown about March in a greenhouse, the young plants being picked out in due course, and hardened off so as to be ready for the open ground by the end of May.

CATANACHE cœrulea.—A handsome perennial, 2 to 3 feet high, with whitish narrow leaves and light blue flowers in June and July. In the variety called *alba* or *bicolor* the white strap-shaped florets are marked with blue or rose at the base. When grown in bold clumps *C. cœrulea* is an attractive plant. It flourishes in any good garden soil that is not too wet, and may be increased by division or seeds.

CENTAUREA.—There are 400 distinct kinds of Centaury, but the best known are the Cornflower (*C. Cyanus*), the Sweet Sultan (*C. moschata* or *Amberboa moschata*), the Yellow Sweet Sultan (*C. suaveolens*), and *C. candidissima*, the last-named being remarkable for its beautiful silvery-white leaves.

The Cornflower (*C. Cyanus*) grows 2 to 3 feet high, and flourishes in ordinary garden soil. It is highly prized for the bright blue of its blossoms, which appear from June to September, and are excellent for cutting. There is a double-flowered form called *flore pleno*, and also a dwarf-growing variety called *depressa*, the blossoms of which have a deeper shade of blue than the type. Cornflowers are best raised from seeds sown one year, to flower the following, or they may be raised in heat early in spring if desired to bloom the same season.

The Sweet Sultan (*C. moschata*), a Persian annual, may be sown under glass and in the open air at intervals up to the end of May, to secure a succession of the musk-scented blossoms which are violet purple in the type, although there is also a white flowered variety.

The yellow flowered *C. suaveolens*, and the reddish or lilac flowered *C. americana*, both annuals, may be raised in the same way as the Sweet Sultan. The white-leaved *C. candidissima* (or *C. Cineraria*), a half-hardy perennial much used for bedding out and edgings, may be raised from seeds in spring in a greenhouse; or plants for the following year may be secured by inserting cuttings in sandy soil about August or September.

Amongst the best hardy herbaceous perennials may be mentioned *dealbata*, 2 feet high, mauve-purple; *eriphora*, 1 foot, yellow; *macrocephala*, 3 to 5 feet, with large yellow flower-heads; *montana*, 3 feet, bright blue, with white, rose, and purple forms; and *C. ragusina*, 2 feet, with silvery leaves and yellow flowers. Being only half-hardy it must be raised in the same way as recommended for *C. candidissima*.

CENTRANTHUS ruber (*Red Valerian*; *Pretty Betsy*).—This is a fine old border or rock garden plant, 2 to 3 feet high, with ovate lance-shaped leaves, and dense clusters of crimson-purple flowers (or white in the variety *alba*), from June to September. It flourishes in ordinary garden soil and is readily increased from seeds, or division in spring. Another species, *C. macrosiphon*, grows about the same height, and has broadly oval, coarsely-toothed leaves. The flowers appear from July onwards and are of a

brighter crimson than those of *C. ruber*. There is, however, a white-flowered variety, and a dwarf dense-growing one called *nana*.

CERASTIUM tomentosum.—This beautiful chickweed has long been known as an edging and carpet plant in the flower border and rockery. It is readily distinguished by its dense masses of silvery-white narrow leaves. The pure white flowers appear during the summer months, and enhance the general beauty of the plant. A well-drained garden soil suits this species well, and it may be increased by division in the early autumn, or by cuttings inserted in sandy soil under glass in spring.

CHEIRANTHUS Cheiri (*Wallflower*).—There are now many fine varieties, some being deep blood-red and maroon, and others purple, brown, orange, yellow, and intermediate shades. Besides the single-flowered forms, there are also many double ones with different shades of colour. When massed in beds or bold groups, on walls, ruins, and rough places, the Wallflower adds a charm to the garden in the spring. To secure the best results seeds should be sown in the open air from March to May. The plants should be in their flowering quarters by the end of September, and by selecting early and late varieties, can be had in bloom from Christmas to March and April. Other kinds of Wallflower occasionally seen are *C. Marshalli*, a supposed hybrid with orange-yellow flowers; and *C. mutabilis*, with blossoms varying from creamy-yellow to purple. This species has recently been crossed with some garden forms of *C. Cheiri*, and has produced a hybrid called *kewensis*, which is peculiar for having

yellow, purple and bronzy blooms on the same raceme. Both *C. Marshalli* and *C. mutabilis*, require warm sheltered spots in the garden, and a well-drained loamy soil. They may be increased from seeds, and also by cuttings of the side shoots in summer. (See Plate 2.)

CHRYSANTHEMUM.—Apart from the florists' varieties there are several beautiful species of Chrysanthemums—both annual and perennial. The annual kinds, like *C. carinatum* or *tricolor*, and its numerous forms (of which *Burridgeanum* is perhaps best known) are easily raised from seeds in gentle heat in spring, and make the garden gay from summer to autumn with their large flower-heads symmetrically banded with white, lilac, purple-yellow, maroon, &c. In addition to these, there are fine double white and double yellow forms. The Crown Daisy (*C. coronarium*) is another showy annual 2 to 3 feet high, with finely-divided leaves, bright yellow, white, or orange flower-heads in single and double forms. To these may be added the British Corn Marigold (*C. segetum*), an annual about 18 inches high with golden-yellow flowers from June to September.

Amongst the perennials, the British Ox-Eye Daisy (*C. Leucanthemum*), 2 to 3 feet high, with white flowers from June to August, is well known. There is now a handsome form with pure white double flowers, *C. latifolium*, the flowers of which are shown on Plate 16, fig. 46, grows 3 to 4 feet high, and is very similar to *C. maximum*. The last-named is a fine Pyrenean plant 2 to 4 feet high. There are many excellent forms of it now in gardens, and some of



DORONICUM PLANTAGINEUM (45)

CHRYSANTHEMUM LATIFOLIUM (46)

ERIGERON SPECIOSUM (47)



them have flowers quite four inches or more across. The latest flowering of all, however, is the Great Ox-Eye Daisy (*C. serotinum* or *Pyrethrum uliginosum*) which not only often reaches a height of about 6 feet, but produces a profusion of its large pure white flowers from September to November. Other perennial Chrysanthemums worth growing are *C. Balsamita*, yellow, and *C. lacustre*, and *C. nipponicum*—both white. What are known as “*Shasta Daisies*” are considered to be hybrid combinations of *C. Leucanthemum*, *C. maximum*, and *C. nipponicum*. They possess all the best characters of these species, and appear to be much more profuse in blossom. All the hardy perennials are easily increased by division in spring.

There are several varieties of the Chinese and Japanese Chrysanthemum (*C. indicum*) that make the garden lovely in the autumn. Such kinds as *Mdme. Desgranges* (white and yellow forms), *Marie Massé*, (pink and bronze forms), *Harvest Home*, *Source d'or*, *Nellie Brown* (bronze forms), and many others, make a delightful display. They are raised from cuttings or suckers from the old rootstocks in January or earlier, and are grown in greenhouses or frames until about the end of May before being placed in the open ground. The plants should be about two and a half feet apart, and have a stake placed to each of them, so that the side shoots may be tied up from time to time during the season. The flowers are excellent for cutting.

CIMICIFUGA (*Bugwort*).—These ornamental plants have divided leaves, and long, erect racemes of rather strong-smelling white or yellowish flowers borne in great profusion. They all grow freely in ordinary

garden soil, and may be readily increased by division of the rootstocks in spring or from seeds. The following kinds grow 2 to 4 feet high, and are all ornamental in July and August:—*americana*, *cordifolia*, *dahurica*, *elata*, *fœtida*, *japonica*, *racemosa*, *simplex*, and *verticillata*.

CLARKIA.—These showy annuals of easy growth are raised from seeds about March under glass or in the open ground in April and May, and are mostly 1 to 2 feet high when fully developed. The blossoms of *C. elegans* are rich crimson, while those of *C. pulchella* are rich purple. Many shades, however, have been evolved, so that white, pink, rose, and salmon colours abound both in single and double forms.

CONVALLARIA majalis (*Lily of the Valley*).—This general favourite has slender creeping rootstocks, each with a pair of ovate lance-shaped leaves 6 to 8 inches long. In May and June the pure white drooping bell-shaped blossoms are borne on erect angular stems. There are many varieties of Lily of the Valley, the poor ones having only a few small flowers on a stem, the good ones having several large ones. Those known as *Fortin's* and *Victoria* are probably the best. There is a double-flowered form (*flore pleno*) and a blush one called *rubra* or *rosea*, neither of much value. Lilies of the Valley like a rich and well-drained sandy loam, and an open situation facing either north or west. The best time for planting is from the end of August to the end of September, when the leaves are yellow or fallen. Strong, plump "crowns" or "pips," as the rootstocks are called, should be selected, as the thin wiry-

looking ones will require 2 or 3 years more food before they are capable of throwing blossom. Fine rich soil should be worked in between the crowns when planting, and about 2 inches of soil should cover the tops when finished. Each autumn a good layer of well-decayed manure should be spread over the plants, so as to supply fresh food, and secure fine blooms. Treated thus the plants may be left undisturbed for several years in the same place, until they become too crowded.

CONVOLVULUS tricolor (*C. minor*).—This charming South European annual grows about a foot high, and produces its lovely funnel-shaped blossoms from July to September, the colours being deep and light blue, pink, crimson-violet, rose, white, striped, &c., according to variety. The plants are useful in beds and borders, and are easily raised by seeds sown in heat about February or March. The small Bindweed (*C. arvensis*) is often a troublesome weed, but if properly used to cover trellises, rocks, &c., with its trailing stems, it looks handsome when bearing its white, pink, or pale-purple blossoms. (See *Calystegia* and *Ipomœa*.)

COREOPSIS (or Calliopsis).—This genus consists of pretty annual, biennial, and perennial species. The annuals, of which the yellow-flowered *C. Drummondii* is the best known, are easily raised from seeds sown in gentle heat in March, the young plants being ready for planting out by the end of May. *C. aristosa*, *C. atkinsoniana*, and *coronata*, are other yellow-flowered kinds, the two latter having a reddish-purple blotch at the base of each ray floret. Another charming annual is *C. tinctoria*, whose finely-cut leaves and yellow flowers with a purple-brown blotch at the base of the

florets, are very attractive. Two forms, one called *atrosanguinea* with deep blood-red blossoms, the other *nigra speciosa*, with deep velvety crimson ones, are both remarkably conspicuous when in bloom.

Of the biennial and perennial species *C. lanceolata* and *C. grandiflora* are well-known. The first named is a true perennial, 1 to 3 feet high, with lance-shaped leaves, and bright golden-yellow flowers; *C. grandiflora*, although it can be continued year to year by means of planting non-flowering basal and side shoots, is nevertheless a biennial, and it is better to raise the plants from seeds one year to flower the following. In appearance, the flowers of both species are similar, but those of *C. grandiflora* shown on Plate 18, fig. 52, are the larger as a rule.

CORYDALIS.—Of the 70 species in this genus, most may be ranked as weeds. The common yellow Fumitory (*C. lutea*) is a charming little perennial, 1 to 2 feet high, with grey-green finely-cut leaves, amongst which the “spurred” yellow blossoms nestle from early summer till the approach of winter. It is easily increased by seeds, or division of the rootstocks, and may be regarded as a first-class rock plant. Similar to *C. lutea*, but larger in leaf and blossom, and looser in habit, is the recently introduced *C. thalictrifolia* from Central China. It seems to be perfectly hardy, and seeds quite freely, while the yellow blossoms appear for several months. *C. Wilsoni* is another new species, dwarf in habit. Ordinary garden soil will suit any of the *Corydalis*, annual or perennial.

COSMOS bipinnatus.—A graceful Mexican annual about 3 feet high, with finely-cut feathery foliage, and

bright rose, purple, or white blossoms in warm seasons. It is easily raised from seeds sown in heat in March, the young plants being ready for the open air in May or June. Although in unfavourable seasons the flowers will probably not appear, still the graceful appearance of the plants is a sufficient inducement to grow them in any ordinary garden soil. (See Plate 30, fig. 80.)

CYCLAMEN (*Sowbread*).—The hardy Cyclamen are a beautiful group of border or rock plants. Warm sheltered spots, partially shaded from strong sunshine, and a rich loamy soil, containing a little chalk, limestone, or mortar rubble, seem to satisfy the requirements of most kinds. Good drainage is essential, otherwise the corms (or tubers) are likely to suffer, and perhaps decay during the winter. To keep the plants in good condition for several years without lifting or disturbing them, a good top dressing of well-decayed manure should be placed over the soil in winter. To keep up a supply of plants, it is best to raise them from seeds. These should be sown as soon as ripe in pots of rich sandy soil under glass. The young plants should be grown on for a year or two before transferring them to the open ground.

There are many kinds of hardy Cyclamen, all easily recognised by their roundish kidney-shaped leaves, the under surface of which is often purplish, while the upper is blotched, marbled, and veined with white. The blossoms are white, rose, or purple, having the five twisted petals turned back towards the stalk. Much importance cannot be attached to the names, as a good deal of confusion exists. The kinds, however, known as *africanum*, *alpinum*, *Atkinsi*,

cilicicum, *Coum*, *cypricum*, *europæum*, *græcum*, *ibericum*, *libanoticum*, *neopolitanum*, and *repandum*, may be relied upon as the best, but even these are known by many other names.

CRAMBE cordifolia.—This fine Caucasian perennial, about 6 feet high, is well worth a place in all large gardens. The large heart-shaped leaves are 12 to 18 inches wide, somewhat lobed, wavy, and wrinkled, and form a bold mass near the ground. The white cross-shaped blossoms appear in June and July, forming a branched truss often as much as 6 feet through. *C pinnatifida* is another perennial with large turnip-like leaves, and large trusses of white flowers. Both species flourish in ordinary garden soil, and may be increased by separating the large roots in spring, or by seeds.

DAHLIA.—There are several species of Dahlia, all natives of Mexico. The numberless garden forms, both single and double—the latter including what gardeners know as Show, Fancy, Cactus, Decorative, and Bouquet or Pompon sections—have all been evolved in little more than 100 years from the single-flowered forms of *D. coccinea*, *variabilis*, and *Merckei*. The Cactus Dahlias, however, are of more recent origin. They have been developed from *D. Juarezi*, which was introduced in 1872, and was first publicly exhibited in 1879.

Planting.—Dahlias should be planted in the open air about the end of May or early in June when all danger from frost is over. They like a rich loamy soil, rather heavy, and with plenty of humus in it. The plants should be about four feet apart, otherwise, as



YELLOW LARKSPUR (*DELPHINIUM ZALIL*) (48)

HYBRID LARKSPUR (49, 50)

growth develops, the shoots become long and weak, owing to lack of air and sunshine. A stout stake about 5 or 6 feet high should be placed to each plant. If done later in the season a good deal of injury is likely to be caused to the tuberous roots. If the young plants are in pots they should be turned out carefully, so as not to break the ball of soil round the roots.

Tying.—As the season advances, the leading shoots must be carefully tied to the stake, and where extra large flowers are required in the Show, Fancy, Decorative, and Cactus groups, some of the weaker shoots may be pinched out altogether; but in the case of the smaller-flowered Pompons and the single varieties there is no necessity to thin out the shoots.

If particularly fine blooms are required for exhibition purposes, the plants may be fed frequently with weak liquid manure composed of cow manure and soot, or guano and soot. At the time of planting a little basic slag may be strewn over the soil, and will come in as a useful food about the flowering period.

Storing.—When the frost comes in autumn the stems should be cut down to within 6 inches of the ground, and the tubers lifted to dry. After the soil has been shaken from them they are stored away in a cool, airy place, where they will be free from frost in winter, and not likely to rot with damp.

Propagation.—Dahlias may be raised from seeds, or increased by cuttings and division of the roots. The seeds are sown in gentle heat about February or March. All seedlings flower the first year, but a large number of double varieties produce only single

or semi-double blossoms, and the colours of many are often washy, indistinct or otherwise undesirable.

Cuttings are usually taken from the base of the old stems, which, with the roots, are placed in gentle warmth about February and March, and sprinkled over a few times during the day. The old roots should be exposed to the light to secure strong sturdy cuttings. When these are about 3 inches long, they are taken off with a sharp knife just where they emerge from the old stem. Each one is placed in the centre of a 3-inch pot in light sandy soil, and placed in shade for a few days. A light sprinkling each day, in conjunction with the heat, soon induces the cuttings to root, after which they should be given as much light and air as possible to keep them sturdy.

Where convenience for raising plants from seeds and cuttings does not exist, the old rootstocks may be divided at the time of planting, care being taken to split the crowns so as to retain a portion of the old stems, from the base of which the new shoots arise.

Insect Pests.—The young plants are often attacked by slugs. These may be checked by dusting the soil around with a mixture of lime and soot at the time of planting. Earwigs are partial to the blossoms later on, and must be trapped by placing a little hay or moss in pots inverted on top of the stakes. These are examined each morning and the insects destroyed. Hollow stems of *Polygonum* or Broad Beans may also be dipped in a sugary solution and hung on the shoots to serve as effective but less conspicuous traps.

DELPHINIUM (*Larkspur*).—There are many species of Larkspurs, but a few of them are of garden value.

They vary from 1 to 6 or 8 feet in height, and are distinguished by their many-lobed, and much-cut leaves, and racemes of irregular flowers. Of these the sepals form the most attractive feature, the upper one ending in a spur. The species are mostly perennial but a few annual kinds, like the single and double-flowered forms of *D. Ajacis* and *D. Consolida*, are often grown in large masses. They are raised from seeds in spring, both kinds having finely-divided thread-like leaves.

The blossoms of the *Ajacis* section are white, pink, or blue, and in such forms as *hyacinthiflorum*, *ranunculiflorum*, and others, are an improvement on the ordinary type. The flowers of *D. Consolida* are usually blue, but there is also a good deal of variation in them. Although the prevailing colour of the Larkspurs is blue, purple, or violet, there are a few notable exceptions. Amongst these the Californian *D. cardinale* is remarkable for its scarlet flowers which are borne 3 to 4 feet above the deeply-lobed leaves. This species is raised from seeds one year to flower the next. It has long fleshy roots and likes a rich soil. *D. nudicaule*, also from California, grows 1 to 1½ feet high, has three-lobed leaves and bright orange-scarlet blossoms from May to August when established. It is easily raised from seeds, but strong clumps may also be divided in spring. Another remarkable Larkspur is *D. Zalil* or *D. sulphureum* (Plate 17, fig. 48). It is a native of Afghanistan, and grows about 6 feet high, having deeply-cut leaves and long spikes of soft yellow flowers in summer. The plants require warm sunny spots and rich well-drained soil. They may be raised

from seeds, or the old plants may be divided in spring when they become strong enough. Amongst the blue flowered perennial Larkspurs the following may be mentioned as worth a place:—*Elatum*, 4 to 6 feet high, shown on Plate 18, fig. 51; *elegans*, 1 to 2 feet; *formosum*, 2 to 3 feet; and *grandiflorum* and its many varieties, 1 to 3 feet high.

For bold effect and freedom of blossom the finest Larkspurs are the hybrid forms which have been raised by the crossing and inter-crossing of the others just noted. (Plate 17, figs. 49, 50.) The masses of foliage alone form a graceful sight, but when the enormous spikes of brilliant blue or purple flowers shoot straight up to a height of 6 or 8 feet, they are simply gorgeous. The plants like a well-manured and deeply-dug soil. With plenty of moisture during the summer months, and a good top-dressing of manure in winter, they may be left in bold clumps for three or four years without disturbance. After this the root-stocks may be divided and replanted in fresh soil. The Hybrid Delphiniums are also easily raised from seeds.

DIANTHUS barbatus (*Sweet William*).—The wild type was introduced from Central Europe more than 300 years ago. The garden forms are almost innumerable, but the “Auricula-eyed,” “Smooth-edged” and “Selfs” form three distinct and fairly-well defined groups that may be regarded as the acme of perfection from the florist’s point of view. Seeds of the best strains may be sown in spring, the young plants being afterwards pricked out in light rich soil, and grown on until September. They may then be transplanted to flower the following season.

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DELPHINIUM ELATUM (51)

COREOPSIS GRANDIFLORA (52)

GAILLARDIA ARISTATA (53)

TRADESCANTIA VIRGINICA (54)

Besides the "Sweet William" there are a host of other species of *Dianthus* largely grown for the decoration of the rock garden. They are chiefly useful for this purpose because they make attractive carpets of glaucous green foliage at all seasons of the year, and when in blossom their beauty is enhanced to a marvellous degree. Most of the kinds are easily grown in rich sandy soil, and may be increased from seeds, division, or cuttings of the half-ripened shoots in a cold frame.

Amongst the annual Pinks, the best is undoubtedly the Chinese or Indian Pink (*D. chinensis*), and its numerous varieties. The type came from China about 200 years ago. It grows about 12 to 18 inches high, and produces its sweet-scented reddish flowers in great profusion in summer. There are now single and double-flowered forms, and the colours vary from white to blush rose, pink, and deep crimson. One form called *laciniatus* has the petals deeply incised on the margins. The Amoor Pink (*D. dentosus*) is said to be a form of *D. chinensis*. It has violet-lilac blossoms about an inch across with purple streaks at the base of each petal. There are now double and semi-double forms of it, most of them being sterile have to be increased by division or cuttings. A very fine form of the Chinese Pink is the Japanese *D. Heddeweggi*, of which there are single and double-flowered variations. The blossoms are large, and the colours brilliant, varying from pure white through salmon and rose to the deepest crimson. All forms of the Chinese Pink may be raised from seeds in heat in spring and treated as annuals, or as biennials, in the same way as the Sweet William.

The Garden or Border Pink has been evolved by selection and cultivation from *D. plumarius*, a native of Central Europe. It is closely related to the Carnation, but has smaller flowers with the margins of the petals deeply incised or toothed. Many years ago Garden Pinks were held in high favour. Besides the border varieties, of which *Her Majesty* and *Mrs. Sinkins* are perhaps two of the best-known white flowered forms, there are others called "Show" or "Laced" varieties in which the petals are lined or laced near the margin with a distinct colour.

The Pink is a hardier and more easily grown plant than the Carnation. It flourishes in deeply dug sandy loam, well enriched with manure. During the summer months it produces its sweetly-scented flowers in great profusion. The plants may be increased in the same way as Border Carnations, by seeds, layers, or cuttings. The latter is often the most convenient method, as the shoots may be too short to permit of layering easily.

DICENTRA spectabilis.—(*Lyre Flower*; *Bleeding Heart*; *Lady's Locket*, &c.) This charming Japanese plant grows 1 to 2 feet high, having large fleshy roots, and glaucous leaves divided into wedge-shaped segments and arching flower-stems from which the rosy-crimson lyre-like flowers droop, often a dozen or more in a raceme. Although largely cultivated in pots for greenhouse decoration in early spring, the "Lyre Flower" is perfectly hardy in the open air. It likes a rich and well drained soil, and imported clumps should be planted in September if possible, so as to secure a hold before the winter. Well-established clumps may afterwards be divided in spring, when

more plants are required, or cuttings of the sturdy shoots or roots may be inserted in sandy soil, and kept close for a time in a frame. Other species of *Dicentra*, not so showy as *D. spectabilis*, are *canadensis* (white); *chrysantha* (yellow); *cucullaria* (white and yellow); *eximia* (reddish-purple); *formosa* (red); and *thalictrifolia* (yellow and red).

DICTAMNUS Fraxinella (*Fraxinella*; *Dittany*; *Burning Bush*).—This remarkable plant grows 1 to 2 feet high. Its leaves are composed of 4 or 5 pairs of serrated leaflets, and from May to July its pale lilac-rose blossoms, distinctly veined and feathered with purple, are borne in erect racemes well above the foliage. The variety *alba* is distinguished by its white flower. The plant has been called the “Burning Bush,” owing to the fact that the resinous secretion from the stems is often capable of being ignited by a match, and may be seen to burn on a dark night, at the same time emitting a strong and agreeable odour. There is a bold variety called *caucasicus*, which attains a height of 4 feet, and has a deep reddish blossom. Planted in a rich and well-drained sandy soil, the *Fraxinella* will grow well for years. A good dressing of well-decayed manure each winter will be beneficial to the roots. New plants may be obtained from pieces of the root about 2 inches long, inserted in gentle heat in spring; by careful division of the rootstocks; or by sowing the seeds (which germinate slowly) when ripe in a cold frame.

DIGITALIS purpurea. (*Foeglove*, *Fairy Thimble*).—The common Foxglove is one of the showiest of garden flowers from July to September. It flourishes in

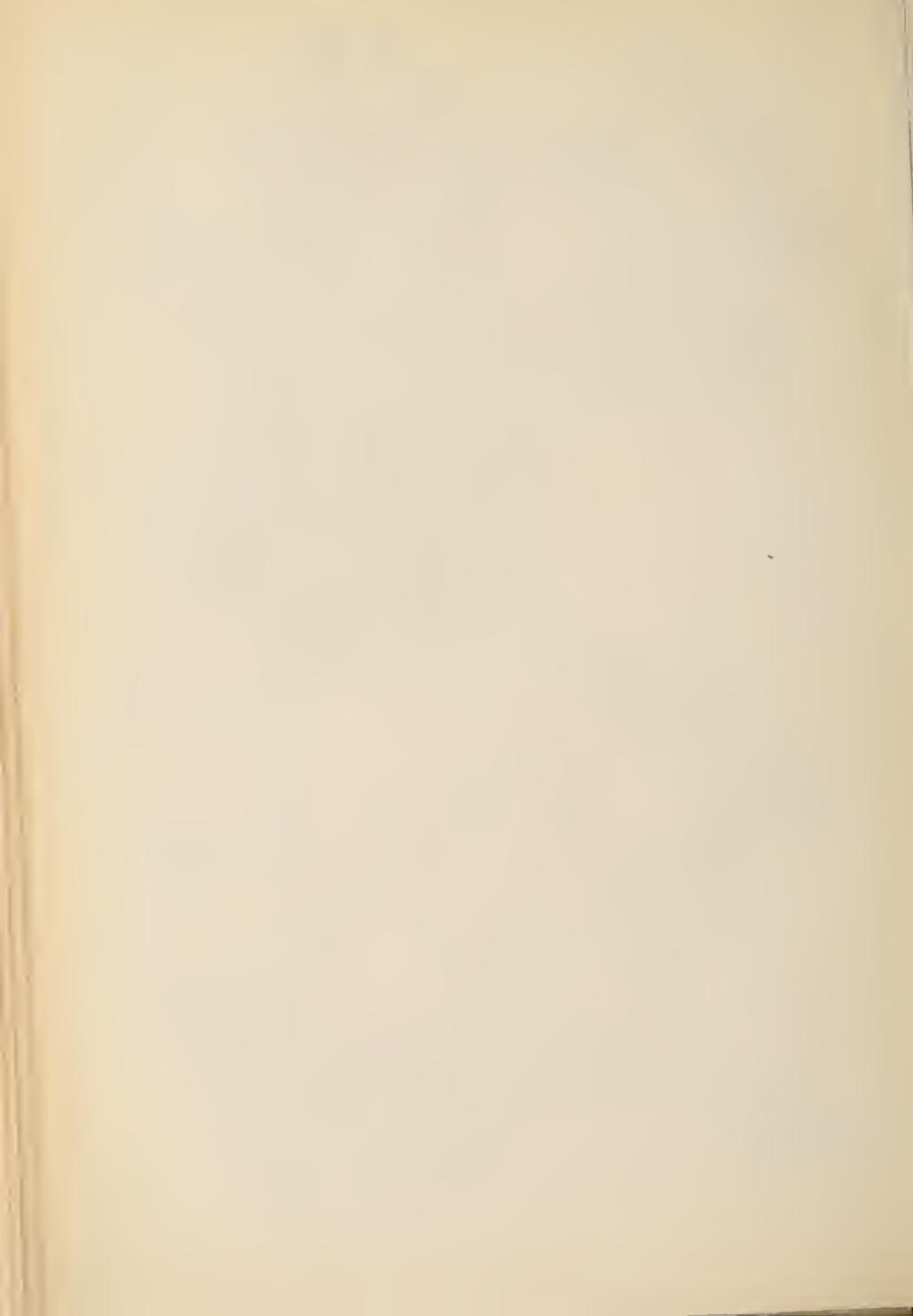
almost any soil, but assumes a luxuriant appearance in a good loamy one. There are now many splendid forms in white, cream, purple, spotted and unspotted, the drooping bell-shaped blossoms hanging down in close array from stout stems that often attain a height of 6 feet. In the varieties called *monstrosa* and *gloxinioides*, some of the terminal flowers are turned upwards and resemble those of a Canterbury Bell in appearance. Foxgloves seed freely, and the young plants should be pricked out about September in the places where they are to blossom the following year.

DODECATHEON Meadia (*American Cowslip*).—A handsome North American perennial, about 1 foot high, with tufts of oblong obovate leaves, from the centre of which springs an erect stalk on the top of which is an umbel of beautiful Cyclamen-like flowers, varying in colour from rosy purple and lilac to white. The petals are reflexed while the anthers and pistil taper off to a fine point. There are many forms of the American Cowslip, but they all flourish in a light moist soil composed of peat, loam and sand, especially in cool and partially shaded parts of the border or rockery. Other ornamental species are *Clevelandi*, rich violet blue; *Hendersoni*, bright crimson, with a conspicuous yellow base; *integrifolium*, deep rosy crimson flowers in summer; and *Jeffreyanum*, purple rose; the two last-named species have produced a hybrid called *Lemoinei*; and *patulum*, a distinct yellow flowered species. All the kinds may be increased from seeds sown in cold frames when ripe, or by careful division of the rootstocks in spring.

DORONICUM (*Leopard's Bane*).—These showy



CANTERBURY BELLS (*CAMPANULA MEDIUM*) (55)



perennials are easily grown in most garden soils, and should be planted in bold groups for effect. The favourite kind is one called *Harpur Crewe*, otherwise known as *D. plantagineum excelsum*. It grows about 5 feet high, having broad heart-shaped and coarsely-toothed leaves, and brilliant golden yellow flowers from March to October. A small form is represented on Plate 16, fig. 45. Other kinds of Leopard's Bane are *austriacum*, 1 to 2 feet; *caucasicum*, 1 foot; *Clusi*, 1 to 2 feet; *Columnae*, 2 feet; and *pardalianches*, 2 to 3 feet—all with yellow blossoms similar to those represented in the picture. The easiest way to increase the plants is by division in spring.

DRACOCEPHALUM (*Dragon's Head*).—These distinct looking plants of the Dead Nettle family grow well in any good garden soil, but they like positions that are partially shaded from the mid-day sun. The most ornamental perennial kinds are *baikalensis*, 1 to 1½ feet high with blue flowers; *grandiflorum* (or *altaicense*) 1 foot, blue; *imberbe*, 6 inches, lilac-blue; *Ruprechtii*, 1 foot, light blue or rose purple; *Ruyschianum*, 1 to 1½ feet, purple blue, and its superior variety *japonicum*, with violet-blue, spotted flowers; and *speciosum*, 1½ feet, purple-blue or lilac-spotted. The flowers usually appear from May and June to August.

Closely related to the Dragon's Heads are the *Physostegias* or False Dragon's Heads, still largely known as *Dracocephalum*; they require the same treatment. They are much taller plants, however, and spread more rapidly by means of their creeping roots. The best known kinds are *P. imbricata*, 3 to 6 feet high, with dense spikes of soft pinkish-purple dotted flowers,

and *P. virginiana*, about 4 feet high with pinkish-purple flowers from July to September. There is a white flowered form (*album*).

ECHINOPS (*Globe Thistle*).—Distinct and showy thistle-like perennials suitable for any garden soil, and easily increased by division of the rootstocks in spring, or from cuttings of the roots inserted in a gentle hot-bed in spring or autumn. *E. Ritro*, which grows 3 to 5 feet high, and has divided spiny leaves and globular heads of steely-blue flowers, is probably the best known species. There are, however, other blue-flowered kinds almost equally attractive, such as *bannaticus*, *ruthenicus*, and *sphærocephalus*, the latter having a whitish flowered variety called *albidus*.

OMECON chionantha (*Cyclamen Poppy*).—This handsome Chinese perennial has thickish creeping roots and pale-green roundish leaves. The pure white flowers, with a cluster of deep orange stamens in the centre, are borne on stalks about a foot high from May to September. Being rather tender, this gem should be grown in warm sunny positions. It likes a well-drained sandy loam and peat, and during severe winter should be protected with a hand-light. Increased by division of the roots in spring.

EPILOBIUM (*Willow Herb*).—There are about 50 species of Willow Herb, most of them rank weeds. Even the best kinds are only fit for rough places or near the margins of ponds, lakes, &c. They are recognised by their slender stems, willow-like leaves, and usually rosy or purple blossoms, composed of four petals. The best species are perhaps *angustifolium*, 3 to 6 feet high, crimson, with a white variety; and

hirsutum ("Codlins and Cream"), 3 to 5 feet high, flowers pale pink or white. Seeds and division.

EPIMEDIUM (*Barrenwort*).—Graceful dwarf growing plants with creeping rootstocks and leaves, often with bristly teeth and highly coloured with rose, purple, or brown. The small hooded or spurred flowers are variously tinted, and although not large are borne in great profusion. The plants flourish in moist loam and peat, and are excellent for the rock garden. They may be increased by division of the rootstocks in spring. The following are a few of the best: *Alpinum*, crimson and yellow; *diphyllum*, red and white; *macranthum* or *grandiflorum*, white; *Musschianum*, white; *pinnatum*, yellow; *purpureum*, purple; *rubrum*, crimson; *Perralderianum*, yellow and red.

ERANTHIS hyemalis (*Winter Aconite*).—A charming little European perennial with tuberous roots, deep green roundish divided leaves, and bright yellow buttercup-like blossoms which continue to peep through the ground from Christmas to March—rarely exceeding a few inches high. Very closely related is *E. cilicica*, which flowers about the same time or earlier, and has more divided leaves. *E. sibirica* does not produce its yellow blossoms until the others are about over—in March and April. The Winter Aconites flourish in any good garden soil, and are chiefly valuable for planting thickly beneath deciduous trees, in the rock garden, grassy banks, &c., to make them look cheerful in winter. The rootstocks may be divided after the flowers have faded. When raised from seeds it takes from three to four years for the young tubers to reach the flowering stage.

EREMURUS.—Noble fleshy-rooted plants with strap-shaped leaves and bell-shaped or starry flowers borne on stems that often reach a height of 6, 8, or 10 feet. The plants like a rich and well-drained loamy soil in warm sheltered spots, and are benefited by an annual mulching of well-decomposed manure. They like plenty of space to develop, and should be planted in bold clumps. The best kinds are *himalaicus*, 8 feet, white; *Bungei*, 1 to 3 feet high, bright yellow; *robustus*, 6 to 10 feet high, pale pink or rosy, and its variety *Elwesianus* finer still. They all flower in early summer, and may be increased from seeds, or by division.

ERIGERON speciosus (*Stenactis speciosa*).—This is the showiest and most ornamental member of a large genus. It grows about 2 feet high, having lance or spoon-shaped leaves, and masses of soft violet or magenta purple blossoms with a bright yellow centre, as shown in Plate 16, fig. 47. It grows freely in ordinary garden soil, and is easily increased by division. The variety *superbus* is an improvement on the type.

Other species are:—*Alpinus*, *glabellus*, *glaucus*, *Roylei*, *multiradiatus*, and *salsuginosus*, all with pleasing shades of mauve or purple; *aurantiacus* from Turkestan is a fine plant with rich orange flowers about 2 inches across; *macronatus* has white flowers tinged with pink; and *philadelphicus* has rosy-purple blossoms.

ERODIUM (*Heron's Bill*).—The perennial *Erodiums* flourish in a well drained sandy loam, and are easily increased by division of the rootstocks in spring, or from seeds. *E. macradenium* (or *glandulosum*) is about 6 inches high, and has divided leaves and pale violet or flesh-coloured flowers veined with crimson-

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SPANISH IRISES (*IRIS XIPHIMUM*) (56)

purple, the two upper petals having a dark blotch at the base. An elegant plant for the rockery. *E. Manescari* is a good border plant, 1 to 2 feet high, with numbers of purple-red flowers well above its deeply cut leaves.

ERYNGIUM (*Sea Holly*).—Ornamental plants of the Carrot family, remarkable for their spiny leaves, and the still more spiny and conspicuous bracts which surround the dense roundish heads of flowers. The perennial kinds flourish in a well-drained, dryish garden soil, and may be increased by careful division of the rootstocks in spring, from seed, or by means of root cuttings inserted in sandy soil in a cold frame in October. The finest species is *amethystinum*, which grows about 2 feet high, having spiny-lobed leaves and bright steel-blue or amethyst-purple flowers and bracts. (See Plate 28, fig. 75.) *E. Oliverianum* is often confused with this species, but is a taller growing plant with steel-blue flowers and bracts. Other species are *alpinum*, *Bourgati*, *cæruleum*, *giganteum*, *maritimum* (the common British Sea Holly), and *planum*. In addition to these there are a few kinds with large, strap-shaped, spiny-toothed leaves that attract attention, such as *agavæfolium*, *bromeliæfolium*, *eburneum*, and *pandanæfolium*, all easily raised from seed, and suitable for lake margins, &c.

ESCHSCHOLTZIA californica.—This free-flowering plant, sometimes called the “Californian Poppy,” flourishes in any garden soil, but delights in abundance of sunlight to display to full advantage its brilliant orange-yellow blossoms above the finely-divided glaucous green leaves. Numerous forms

of this species are now to be met with, the colours varying from the pure white through deep orange crimson to rose-tinted forms. The seeds should be sown in March or April.

FUNKIA (*Plantain Lily*).—Ornamental foliage plants with beautiful funnel-shaped flowers drooping from the scapes. The plants have thickish root-stocks by means of which they can be divided in spring. A well-drained sandy loam, enriched with decayed manure, is the best medium in which to grow them. There are several species of Plantain Lily—all natives of Japan—but the best hardy ones are *F. grandiflora*, with ovate, heart-shaped leaves and pure white sweet-scented flowers, from July to September; *F. lancifolia* with lance-shaped leaves with white or lilac blossoms; the variety called *albo-marginata* has the leaves edged with creamy-white; while *undulata* has wavy leaves, which in the variegated form are heavily streaked and blotched with white; *F. ovata* has ovate leaves and bluish-lilac flowers from May to July, and its variety *marginata* has the leaves broadly edged with creamy-white; *F. Sieboldiana* is an elegant plant with large ovate leaves about a foot long and covered with a dense glaucous “bloom.” The large flowers are white, shaded with lilac. Closely related is *Fortunei* with pale glaucous-green leaves, and lilac blossoms. *F. subcordata* has pale-green ovate leaves, and pure white flowers in August.

GAILLARDIA.—These showy and useful plants flourish in any good garden soil that is well-drained and manured. The perennial Gaillardias have been

derived chiefly from *G. aristata*, a native of the United States. The flower-heads are remarkable for the brilliant zones of crimson and yellow on the ray florets, as shown in Plate 18, fig. 53. The plants are easily raised from seeds, but may also be propagated by division in the spring and by cuttings of the non-flowering side shoots in late summer, inserted in sandy soil in a cold frame. The only drawback to the plants is that they are apt to get rather lanky when planted too close together. Some very fine forms, however, in which the stems are sturdy enough to stand erect without supports have been raised. The annual Gail-lardias—like *amblyodon*, *Lorenziana*, *picta*, and *pulchella*, and numerous intermediate forms—are also exceedingly showy during the summer months. They are easily raised from seeds sown in gentle heat in March, and planted out about the end of May.

GALAX aphylla.—This charming North American plant is only about 6 inches high, and is recognised by its roundish kidney-shaped leaves which assume beautiful bronzy-purple tints in autumn and winter, when they are in much favour with florists. The small white blossoms appear about July, closely arranged on a slender stem. A moist peaty soil, in cool damp parts of the rockery or near streams, suits the plants to perfection. They may be increased by carefully dividing the rootstocks in spring.

GALEGA officinalis (*Goat's Rue*).—This perennial grows 3 to 5 feet high, and has graceful pinnate leaves. The pale blue pea-like blossoms are borne in great profusion in summer in dense clusters. The variety *albiflora* is similar in growth, but has pure

white flowers, and is on the whole more attractive than the type. The form known as *bicolor* has blue and white flowers. The plants grow in any garden soil, and are easily raised from seeds, or by division.

GAZANIA splendens.—This pretty plant is considered to be a hybrid between the orange *G. rigens*, and the yellow *G. uniflora*. It grows about $1\frac{1}{2}$ feet high, having narrow spoon-shaped leaves rendered conspicuous by the white undersurface. The flowers appear during the summer months, and are bright orange yellow with a black and white spot at the base of each ray floret.

Being natives of South Africa, the Gazanias like warm sunny positions, and thrive in a mixture of sandy loam and peat. Propagation is chiefly effected by making cuttings of the non-flowering side shoots in July and August, inserting them in sandy soil in a cold frame. During the winter months they should be protected from frost.

GENTIANA acaulis.—This brilliant native of the Alps and Pyrenees makes fine tufts of ovate lance-shaped leaves, and large bright blue bell-shaped flowers, as shown on Plate 13, fig. 37. It likes a moist loamy and well-drained soil, and may be used for carpeting the border or rockery in partially shaded positions. Other blue-flowered Gentians that may be treated in the same way are *G. asclepiadea* and *G. verna*. They may be increased by careful division in spring, or from seeds sown when ripe in a cold frame. Other useful Gentians with blue flowers are *G. adscendens* (July); *G. Andrewsii*, 1 to 2 feet high, flowers in August and likes moist or boggy places;



SWEET PEAS (*LATHYRUS ODORATUS*) (57)

G. bavaria, about 3 inches high, also likes moist spots; *G. cruciata* (July); and *G. septemfida*, 6 to 18 inches high, flowers from July to September; its variety *cordifolia* (often called *gelida*) is a fine form with deep blue flowers.

The yellow-flowered Gentians are not so popular, but *G. Burseri* and *G. lutea* might be grown for variety. The first-named grows about two feet high, but *lutea* is often twice as tall. There are about 180 kinds of Gentian altogether—some being hardy annuals, some biennials, but the majority are perennials. Those mentioned above will yield the best results.

GERANIUM (*Crane's Bill*).—A group of plants closely related to the Erodiums (Stork's Bill), but distinguished from those plants by usually having ten stamens instead of five. The florists' "Geranium" is more correctly known as "Zonal" Pelargonium, the flowers of which also have five stamens.

For the hardy border the most useful Geraniums are:—*G. armenum*, about 2 feet high, with 5-lobed leaves and brilliant purple flowers with a deep purple blotch at the base of the distinctly veined petals. *G. Endressi*, from the Pyrenees grows about a foot high, and has pale-rosy blossoms. *G. ibericum*, is a showy plant with large blue flowers. *G. pratense* is a native species, 2 to 3 feet high, with flattish clusters of large blue flowers flushed with violet. The "Herb Robert," *G. Robertianum*, also a native plant about 1 foot high, has bright crimson flowers; also a white-flowered variety. *G. sanguineum*, another native of Britain, with much divided leaves, is 1 to 2 feet high, and has crimson or blood-red blossoms. There are a few forms

of it, such as *luncastrisense*, with purple-veined flesh-coloured flowers; and also a white flowered variety. All these kinds flower during the summer months, and flourish in ordinary good soil, and may be increased by division in spring.

GERBERA Jamesoni.—This ornamental perennial is a native of the Transvaal, but unfortunately can only be grown in the open air in the mildest part of the kingdom. The lobed leaves spread out in a rosette on the ground, and the brilliant orange-scarlet flower-head, like a single Chrysanthemum or large Marguerite, is borne on the top of a scape about a foot high. A mixture of sandy loam and peat, with good drainage and a warm sunny spot, seem to be the essentials for this plant. Mr. Lynch, of the Cambridge Botanic Garden, has recently succeeded in raising some fine hybrids between *G. Jamesoni* and *G. viridifolia*. The flowers vary in colour from brilliant orange scarlet to soft pink and creamy yellow, and in the course of time these plants may possibly become more popular and more hardy than their parents.

GEUM (*Avens*).—These are easily grown in any good and well manured garden soil. They are easily raised from seeds, but it is best to increase the choicer forms by dividing the rootstocks in spring. The best-known kinds are:—*G. chiloëense*, 1 to 3 feet high, with scarlet blossoms. The varieties *grandiflorum* and *miniatum* are superior, while the double-flowered one (*flore pleno*) is still more attractive. *G. coccineum* from Asia Minor is 6 to 12 inches high, and has scarlet flowers, which in the variety *Heldreichi* assume a deeper tinge of bright orange-red. Both species have

very hairy and much divided leaves, and are frequently confused with one another. *G. montanum*, from the Alps, is a charming yellow-flowered species 6 to 12 inches high, with two or three forms, of which *reptans* is probably the most attractive.

GILLENIA trifoliata.—A graceful Spiræa-like perennial from North America. It grows 1 to 2 feet high, with three-parted leaves and loose panicles of white and reddish blossoms in June and July. *G. stipulacea* is somewhat similar in appearance, but has lance-shaped deeply-cut leaves and white flowers. Both kinds flourish in sandy loam and peat in partially shaded spots, and may be increased by division.

GODETIA grandiflora.—This free-flowering and beautiful cousin of the Evening Primrose grows 1 to 2 feet high, with oblong lance-shaped leaves, and numerous rosy-red flowers blotched with crimson. There are many garden varieties, nearly all of which can be secured from a packet of well-selected seeds. These may be sown in March or April.

GUNNERA.—These boldly ornamental perennials resemble large round-leaved Rhubarbs—the long prickly-stalked leaves often being as much as 6 or 7 feet across, and constituting the chief attraction of the plant. The numerous small reddish flowers are borne on a large erect club-like spike in the centre of the plant. The best known kinds are *G. manicata*, and *G. scabra*, both about 4 to 6 feet or more high, and useful for growing in moist sheltered spots near ponds, streams, &c. They are natives of temperate South America, and are quite hardy in all except the bleakest parts. They may be increased by detaching

the thick bud-like shoots from the base of the old plant, and also by sowing the seeds in cold frames.

GYNERIUM argenteum (*Pampas Grass*).—This graceful grass, from temperate South America, has tufts of rough-edged, glaucous-green, sword-like leaves, often 6 feet long. The flowers are borne in dense erect plumes on stalks that often attain a height of 10 or 12 feet. They appear in late summer and last in good condition for several months, unless spoiled by heavy rains, frost, &c. The chief beauty of the Pampas Grass is as a lawn plant. It likes a rich sandy loam, warm sheltered spots, and plenty of water during hot summers. A top dressing of well-decayed manure every winter will enable the plant to flourish for several years in the same spot. Increase may be effected by careful division of the tufts in spring, or from seeds sown in heat in February or March.

GYPSOPHILA.—There are many species of these chalk-loving plants remarkable for their light feathery appearance, and their flowers which are borne in great profusion on gracefully branched panicles. Both annuals and perennials flourish in any good garden soil. *G. elegans* is a charming Caucasian annual, 1 to 1½ feet high, with masses of pure white flowers, sometimes faintly striped with violet or purple. It is highly valued for decorations, and may be raised from seeds sown two or three times during the season—from March to July—to keep up a succession for cutting. *G. viscosa* may be regarded as a rose-coloured form of *G. elegans*. *G. paniculata* is a fine perennial with long thick tap roots. It grows 2 to 3 feet high, having fragile knotted stems, and clouds of small

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EVERLASTING PEAS (58, 59)

SPIRÆA FILIPENDULA FL. PL. (60)

white blossoms on thread-like stalks. It may be increased by division or from seeds.

HABERLEA rhodopensis.—A charming Ramondia-like rock plant, 4 to 8 inches high, with flat tufts of coarsely-toothed leaves. From May to July its umbels of pale lilac bell-shaped blossoms droop from the top of a stoutish scape. The plants like a peaty soil, and may be grown between chinks of rock facing north, or at least shaded from strong sunshine. Increased by seeds and careful division.

HELENIUM autumnale.—This showy perennial with smooth lance-shaped leaves, grows 4 to 5 feet high, and during August and September is covered with its pure yellow flowers, which in the varieties *grandiflorum* and *superbum* are much finer than in the type. *H. Bolanderi* is about 2 feet high, and may be recognised by the dark brown centre in its large yellow flower-heads; *H. Hoopesi*, 2 to 3 feet high, has bright orange flowers; *H. nudiflorum* (*grandicephalum striatum*) is 3 to 4 feet high, and has the ray florets of its deep orange-yellow flowers striped and blotched with crimson. *H. pumilum* is only about a foot high, but is a pretty plant with soft yet brilliant yellow blossoms. There are several other kinds. They all flourish in any good garden soil in open sunny positions, and are easily increased by division in spring.

HELIANTHUS (*Sunflower*).—The common annual Sunflower (*H. annuus*) is too well-known to need description here. There are a few choice varieties of it, both single and double, worth a place in large gardens for rough places. Seeds may be sown in gentle heat about March, or in the open ground in April.

The perennial Sunflowers all bear bright yellow blooms, and are easily increased by division in the spring. They flourish in any soil, and are excellent for cutting. The following kinds are likely to give general satisfaction :—*H. angustifolius*, 2 to 5 feet high, with narrow glossy green leaves ; *H. decapetalus*, 4 feet high ; *H. giganteus*, 10 to 12 feet high, likes moist soil ; *H. mollis*, 3 to 5 feet high, with ovate soft hairy leaves of a greyish tint ; *H. multiflorus*, a fine Sunflower, 3 to 5 feet high, with ovate heart-shaped leaves. There are several varieties of it, the best being, *Bouquet d'or*, *flore pleno*, *grandiplenus* or *Soleil d'or*, all fine double-flowered forms, to which the simple forms *major* and *maximus* may be added. *H. orgyalis* is an extraordinary looking Sunflower, 6 to 10 feet high, with narrow drooping willow-like leaves, and deep golden-yellow flowers. A graceful plant in bold masses. *H. rigidus* (*Harpalum*) grows 3 to 5 feet high, having roughish purple stems, and variable leaves. There are several varieties, amongst which *Miss Mellish*, with large leaves and flowers, and *D. Dewar* may be regarded as the best. The kinds mentioned above usually flower during August and September, and even later.

HELLEBORUS (*Hellebore*).—These perennials are easily recognised by their short thickish rootstocks, lobed leaves, and flowers in which the five sepals are larger and more conspicuous than the small, tubular, honey-secreting petals. The kinds mentioned below like a rich moist loamy soil, and rather shaded spots. They are most easily increased by division after the flowers have faded. Seeds may also be sown under glass when ripe, but it takes a long time to produce flower-

ing clumps from them. Of all the Hellebores, the "Christmas Rose" (*H. niger*) is the best known. Its beautiful pure white blossoms appear about Christmas time and look particularly effective.

The "Lenten Rose" (*H. orientalis*) is another very fine species with much-divided leaves and large rose-coloured flowers from February to May. Some fine forms, spotted and unspotted (see Plate 12), have been secured between this species and the Christmas Rose, and the sweet-scented Hellebore (*H. odoratus*), the latter having green or purple fragrant flowers. Other kinds worthy of mention are *abschasicus*, with green or purplish flowers from January to March; *H. atrorubens*, deep purple, March and April; *H. caucasicus*, pale green, January to April; the variety *punctatus* has pale-red flowers spotted with purple; *H. colchicus*, bright purple, January to March; *H. fatidus*, a fine dark-looking species with green flowers tipped with purple in February and March; *H. lividus*, pale green, March; *H. olympicus*, purple, February to April; and *H. viridis*, the Green Hellebore or Bear's Foot, with green blossoms, in March.

HEMEROCALLIS (*Day Lily*).—These ornamental plants of the lily family enjoy partially shaded positions and a rich and moist loamy soil; but they will flourish in any good garden soil, and may be increased by division. The flowers are bright yellow or orange, and although the individual blossoms only last a day or so, they succeed each other so quickly in summer that the plants always appear to be in bloom. The best kinds are:—*H. aurantiaca major*, with flowers of a rich apricot colour (Plate 33, fig. 90); *H. Dumortieri*, with narrow

leaves and soft yellow and orange flowers; *H. flava* has narrow deep-green leaves about 2 feet long, and sweet-scented orange-yellow blossoms; *H. fulva* has large tawny yellow flowers, about four inches across. There are several fine forms of it, the best being *disticha*, yellow, flushed with red; *Kwanso*, and its variegated form, large double flowers of bronzy orange; and *flore pleno*, a form with double orange and crimson flowers; *H. Middendorfi* is like *H. Dumortieri*, but has broader leaves and paler golden-yellow flowers; *H. minor* or *graminea* is a dwarf-growing species little more than a foot high, with deep-green grassy leaves and sweet-scented pale yellow flowers; while *H. Thunbergi* has soft canary-yellow flowers, somewhat like those of *H. flava*, but later in the season. The species mentioned are chiefly natives of Japan, although *flava* and *fulva* are also found distributed westwards to Europe.

HESPERIS matronalis (*Dame's Violet* or *Rocket*).—A charming old garden plant 2 to 4 feet high, having sweetly-scented white or lilac blossoms from May to July. The double-flowered kinds, both white and purple, are more highly valued as garden plants, and are best increased by division or cuttings.

HEUCHERA sanguinea.—This popular perennial forms masses of roundish lobed leaves above which the flower-stalks rise to a height of 9 to 18 inches, bearing numerous scarlet bell-shaped blossoms in summer. The variety *splendens* is more brilliant in colour than the type, while *alba* is not a particularly showy variety with creamy white flowers. To these may be added *Edge Hall Hybrid*, rosy; *grandiflora*, rich crimson;



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CARNATIONS (61, 62, 63)

Zabeliana, rich rosy crimson. Other kinds are *americana*, reddish purple; *brizoides*, soft pink; *erubescens*, white, flushed with rose, and a fine plant but not yet well-known; *Richardsoni*, with whitish flowers and dark green leaves that turn bronzy in autumn; and *micrantha*, with greenish-white flowers, and bronzy-purple leaves, particularly attractive in spring. They may be increased by division or raised from seeds.

HUMULUS (*Hop*).—The Japanese species (*H. japonicus*) is an ornamental annual with strong climbing hairy stems that attain a length of 15 to 20 feet and are furnished with 5 to 7 lobed leaves rather larger than those of the common Hop. There is a beautiful variety in which the green leaves are blotched and streaked with various shades of yellow. Plants are raised from seeds sown in heat in March, and planted out in warm sunny spots in May or June. *H. Lupulus*, the ordinary British Hop, is a perennial of no little value for covering trellises, arbours, &c. It flourishes in rich loamy soil, and may be raised from seeds, but is more readily increased by division.

HUNNEMANNIA fumariæfolia.—A graceful Californian plant with deeply divided glaucous-green leaves and large yellow cup-shaped flowers in August and September. It is best raised annually from seeds.

IBERIS (*Candytuft*).—The common Candytuft (*I. amara*) is a native annual 6 to 12 inches high, with clusters of white flowers in summer. It cannot, however, compare with the varieties of the white-flowered *I. coronaria* and the purple *I. umbellata*, of which there are now forms having rosy, crimson, carmine, and lilac shades. Seeds may be sown in March, April and May.

Of the perennial Candytufts, the evergreen kinds like *correæfolia*, *petræa*, *Pruiti*, *saxatilis*, *semperflorens*, and *sempervirens*, all have white flowers in dense masses. They flourish in ordinary good garden soil, and are usually increased by cuttings in a frame or shady border about July or August. *I. gibraltarica* is a handsome species requiring warm sheltered spots in the open air. It has clusters of white flowers often suffused with pink or purple.

INCARVILLEA Delavayi.—This handsome fleshy-rooted Chinese perennial grows about 2 feet high, having coarsely-toothed leaflets and racemes of large tubular rosy-carmine flowers, spotted with brown and yellow in the throat. (Plate 28, fig. 76.) It flourishes in rich and well-drained soil, and may be increased by careful division after the flowers have faded or from seeds. Other good species are *I. Koopmanni* with mauve pink flowers; and *I. Olga*, with rose or purple flowers.

INULA glandulosa.—This ornamental Caucasian composite grows about 2 feet high, having oblong serrate leaves, and large bright orange flower-heads in July and August, with long, narrow, ray florets. Other species are *I. grandiflora*, *I. Helenium*, *I. Hookeri*, and *I. Oculus-Christi*, all sturdy perennials, 2 to 3 feet high, with yellow flower-heads. Any good garden soil will suit these plants. They may be increased by division in spring, or from root cuttings.

IPOMÆA purpurea (*Convolvulus major*).—A beautiful climbing annual, with heart-shaped leaves and dark purple funnel-shaped flowers from June to September. *I. versicolor* (better known as *Mina lobata*) is another

handsome climber, with heart-shaped 3-lobed leaves. The oblong, cylindrical blossoms are at first rosy-crimson, but change to orange and yellow, and are borne on one side of a curved raceme. Both kinds may be raised from seeds sown in heat in March.

IRIS (*Flag*).—The blue-flowered German Iris (*I. germanica*) and the white-flowered Florentine Iris (*I. florentina*) are the best known, and perhaps the finest representatives of this large genus, the flowers of which attract universal attention owing to the beauty and brilliance of their colours, and to their structure. A host of forms has arisen from the German and Florentine Irises, the difference between them being chiefly in the innumerable shades of colour which vary from pure white to the deepest purple, blue, maroon, lavender, bronzy crimson, rosy lilac, &c., as shown on Plate 7.

In addition to these there are what are known as the “Bulbous” or “Xiphion” Irises, and the “Onocyclus” or “Cushion” Irises. The bulbous Irises are best known from the “Spanish” Iris (see Plate 20) and the “English” Iris (*I. xiphioides*), both of which have more or less ovoid bulbs, rather narrow leaves, and flowers remarkable for their beautiful shades of colour—white, yellow, blue, purple, bronze, &c. Both the Spanish and English Iris are easily grown in well-drained garden soil. There are many other bulbous Irises that with a little extra care and attention may be grown in the rock garden, or for the decoration of unheated greenhouses in winter. Fuller particulars concerning them may be found in the author’s “PRACTICAL GUIDE TO GARDEN PLANTS.”

The "Oncocyclus" Irises have very large and gorgeous blossoms, but unfortunately are not so easily cultivated in the open air as the other groups. To secure anything like satisfactory results it is absolutely essential to have a very sandy, well-drained soil, enriched with leaf mould, into which the root-stocks should not be planted too deeply. The plants should not be disturbed every year, and should be protected from cold rains in winter. The best time to plant is about the first or second week in June. The reader may try the following Oncocyclus Irises, and if they succeed it is possible that a larger number of plants will be grown afterwards. *I. atrofusca*, deep violet-purple; *I. atropurpurea*, blackish-purple; *I. Barnumæ*, wine-purple; *Bismarckiana*, a splendid Iris with yellowish falls beautifully veined and netted with deep red purple, the creamy white standards being veined with blue; *I. Gatesi*, creamy white delicately veined and dotted with purple; *I. Helenæ*, bright lilac, purple, and black; *I. iberica*, pale lilac, veined and speckled with purple; there are several varieties; *I. Lorteti*, pale pink or delicate rose, veined with purple, the pale-blue "falls," being veined and blotched with deep purple; *I. lupina*, creamy yellow, veined with blackish purple; *I. Mariæ*, lilac, veined with deep purple; *I. meda*, pale lilac, blotched with deep purple; *I. paradoxa*, deep violet; *I. Sari*, soft violet-purple distinctly spotted and veined; *I. Sofarana*, creamy-white ground heavily netted with deep purple; and *I. Susiana*, blackish purple veins and speckles on creamy-white ground. This is a remarkably handsome Iris—but, indeed, so are all the others in the group.

The best known Irises of the "Beardless" group are: *I. aurea*, 3 to 4 feet high, bright yellow, June; *I. cristata*, 4 to 6 inches, rich amethyst blue, April and May, a good rock garden plant; *I. fulva*, 2 to 3 feet, deep copper yellow; *I. graminea*, 9 inches, grassy leaves, flowers lilac-purple, sweet-scented, May and June; *I. missouriensis*, bluish-lilac, veined with purple, May; *I. ruthenica*, lilac-purple and white, March and April; *I. sibirica*, lilac and violet, May and June; *I. unguicularis* or *stylosa*, lilac blue, or white, January and February; and *I. versicolor*, claret purple, in May and June.

The Japanese Iris (*I. Kämpferi* or *laevigata*) grows about 2 feet high, having flat blossoms often 8 to 10 inches across, about June and July. The colours are numerous, the most common being pure white, lilac, magenta, purple, crimson, lavender, and blue, in addition to which there is usually a distinct yellow or orange blotch at the base of the broad petals. Although in Japan this Iris grows naturally in swamps and marshes, it will flourish in the border in good loamy soil enriched with manure or leaf mould. It is, however, more at home near the margins of lakes, ponds, streams, &c., where it is partially shaded. The plants may be increased in early autumn by division.

I. Pseudacorus, the common British Flag Iris, found near river banks, ditches, &c., produces its bright yellow flowers from May to August, and may be grown in moist shady spots in the border or near water. There is a variety with striped leaves. The "Gladwin" or "Roast Beef Plant" (*I. foetidissima*) is another British Iris, 2 to 3 feet high, with purple or bluish-lilac flowers

from May to July. There is also a striped-leaved form which looks very handsome. After the flowers have faded and the seed pods ripened, the Gladwin again becomes ornamental when the capsules open in autumn and display the bright scarlet seeds within.

KNIPHOFIA (*Torch Lily*).—These bold members of the Lily family are easily recognised by their long flattish leaves and stout erect spikes of scarlet and yellow blossoms, which tower well above the foliage, and are densely arranged. The orange-scarlet kinds like *K. aloides* and its numerous forms, *K. Burchelli*, *K. caulescens*, *K. corallina*, *K. Leichtlini*, *K. Macowani*, *pumila*, and *Rooperi*, produce a flame of colour late in the season. They like a rich garden soil, and are best increased by division in early spring. Being natives of South Africa, they like warm sunny spots, and except in severe winters rarely require protection. The kinds mentioned grow 2 to 6 feet high, and some of them have given rise to many fine hybrid forms, with varying shades of orange, scarlet, and yellow. The yellow flowered kinds like *comosa*, *foliosa*, *distachya* (a form of *Leichtlini*), *citrina*, and *Northiæ*, may be grown in the same way as the others, but as a rule they are more tender, and consequently require more shelter from cold winds, rains, and severe frosts.

LATHYRUS odoratus (*Sweet Pea*).—The Sweet Pea is now so popular that it has a special society to itself. Each year sees new and improved forms, and now one may secure almost every shade of colour—red, white, blue, yellow, purple, mauve, lavender, violet, salmon, apricot, heliotrope, crimson, and intermediate shades. Not only are there “self”



CAMPANULA LATIFOLIA (64)

C. MACRANTHA ALBA (65)

coloured forms, but also numerous ones in which the blossoms are flaked and striped with a distinct shade of colour. (See Plate 21.)

Seeds may be sown every year either in the open ground during March and April where the plants are to blossom, or in pots under glass about February and March. Any good garden soil will give satisfaction; but if the blossoms are to be grown for exhibition the plants will require more attention in the way of watering in hot seasons, and the application of weak liquid manure—made from guano or some highly concentrated compound. It is important that stakes should be placed to the young plants when a few inches high. The blossoms should be frequently cut so as to extend the flowering period as long as possible.

There are many species of perennial or Everlasting Peas which continue to blossom year after year. In the first instance they may be raised from seeds, but afterwards large clumps of roots may be divided. The following are a few of the best Everlasting Peas all in flower during the summer months:—*Grandiflorus*, rosy red, large; *latifolius*, rosy (Plate 22, fig. 59), with a beautiful large white-flowered variety having a dozen or more blossoms on it; *magellanicus*, Lord Anson's Pea, bluish-purple; *pubescens*, pale lilac-purple; *rotundifolius*, bright rosy-pink (Plate 22, fig. 58); *Sibthorpi*, rose-purple; and *splendens*, the Pride of California, carmine red; requires warm sheltered spots.

LIATRIS (*Snakeroot*).—The best-known member of this North American genus is *L. spicata*, which grows 1 to 3 feet high, having sharp pointed lance-shaped leaves, and erect spikes of purple flowers in September.

It thrives in ordinary soil and may be increased by division in spring, or from seeds. Somewhat similar in appearance is *L. pycnostachya*, which attains a height of 3 to 5 feet, and produces its pale purple flowers somewhat earlier in cylindrical spikes 12 to 18 inches long. It is often grown as a biennial. (See p. 9.)

LINARIA (*Toadflax*).—The common British Toadflax (*L. vulgaris*), grows 1 to 2 feet high, and produces its dense racemes of yellow flowers from July to October. It flourishes in almost any garden soil, and reproduces itself freely from seed. The variety called *peloria* is a pretty plant remarkable for having flowers resembling an extinguisher in form. The Ivy-leaved Toadflax or Kenilworth Ivy (*L. Cymbalaria*) is practically a British weed, but looks charming on old walls, ruins, &c., upon which it seems to flourish in the driest summer, and to produce its bluish-purple, lilac or whitish blossoms from May to September. Other Toadflaxes are *alpina* (bluish-violet), *anticaria* (white tinged lilac); *dalmatica* (3 to 5 feet high, with yellow flowers); *purpurea* (1 to 3 feet high, bluish-purple); and *tricornithophora* (purple), all perennials, and as a rule easily raised from seeds.

LINUM (*Flax*).—There are about 80 species of Flax known, most of them being herbaceous perennials. Among the yellow-flowered herbaceous species the finest are *campanulatum* and *flavum*, both 12 to 18 inches high, and in blossom from June to August. The best-known blue or purple flowered Flaxes are *alpinum*, 6 inches; *austriacum*, 1 to 2 feet; *narbonense*, 2 feet, perhaps the best of the blue-flowered kinds;

and *perenne*, 1 to 1½ feet, bright blue in the type, but having pink and white forms. They all like a warm sheltered part of the border or rockery, and may be raised from seed, division of the roots in spring, or by cuttings of the young and moderately-ripe shoots in summer. A few annual Flaxes, like *grandiflorum*, with rose-coloured flowers, and *usitatissimum*, the blue-flowered Flax of commerce, are easily raised from seeds sown thinly from March to May.

LITHOSPERMUM.—The kinds mentioned below are most generally grown. They flourish in well-drained soil, in the rock-garden or flower border, and are usually increased by division in spring, from seeds, or by cuttings of the young non-flowering shoots in summer. Indeed, *L. prostratum* is more easily increased by cuttings than from seeds or division. The following are worth growing: *L. Gastoni*, 12 to 18 inches, bright sky-blue flowers; *L. graminifolium*, pale blue; *L. prostratum*, a trailing evergreen with brilliant blue flowers distinctly veined; and *L. purpureo-ceruleum*, a native plant suitable for creeping over rockeries. It flourishes in any soil except clay, and its bright blue flowers appear in June and July, and in greater profusion if the runners or young trailing shoots are pinched back.

LOBELIA.—The most beautiful plants in this genus are undoubtedly those known as *cardinalis*, *fulgens*, and *splendens*, all natives of the South United States and Mexico. They grow about 3 feet high, having oblong lance-shaped leaves slightly toothed on the margins, and long erect racemes of beautiful velvety scarlet or crimson flowers. Many fine hybrids

have been raised by crossing the kinds mentioned with the blue-flowered *L. siphilitica*, which grows 1 to 2 feet high. *L. Gerardi* is a blue flowered hybrid, but it cannot compare in brilliancy with the crimson or magenta forms like *Queen Victoria*, *Andrew Barlow*, and several others, to which distinct names have been given. They like a rich moist loamy soil, and a little shade, but must be protected from severe frosts and cold rains in winter. They may be increased from seeds, division of the rootstocks in spring, or from cuttings of the young shoots inserted in sandy soil in a cold frame. (See Plate 30, fig. 79.)

LUNARIA biennis (*Honesty*).—This charming biennial grows 2 to 3 feet high, and flourishes in ordinary good garden soil. It is usually raised from seeds sown in spring to produce plants for flowering the following year. The leaves are large, heart-shaped, and coarsely-toothed, and from May to July the erect trusses of violet-lilac, purple, or white flowers are freely produced. In the autumn their place is taken by the large roundish silvery divisions of the seed-pods to which the name of “Peter’s Pence” has been given.

LUPINUS polyphyllus (*Lupin*).—This is the best of the perennial Lupines, attaining a height of 3 to 6 feet in good soils. It may be recognised by its radiating fan-like leaves, and blue, purple, or white pea-like blossoms. It is easily raised from seeds, or by division of the roots in spring. *L. mutabilis* is an annual, 3 to 4 feet high, with fewer leaflets and large sweet-scented flowers from June to August. The upper petal is white or bluish with a yellow mark in the centre, the other parts being white or

striped. There are several varieties, one having scarlet flowers.

LYCHNIS (*Campion*).—All the Campions grow freely in ordinary good garden soil, and are readily raised from seeds, or increased by division. *L. chalcidonica*, 2 to 3 feet high, with dense heads of glowing scarlet blossoms in summer is well-known. *L. coronaria*, with white woolly-looking leaves and clear magenta flowers, is also a favourite, but plants raised from seeds will not flower until the second year. The Red Campion or Bachelor's Buttons (*L. dioica*) and its double variety are covered with soft hairs; they produce their purple-rose flowers freely from spring to autumn; *L. fulgens* grows 6 to 12 inches high, and has large bright vermilion blossoms. It is supposed to be one of the parents of *L. Haageana*, a fine garden plant 1 to 2 feet high, with scarlet, white, rose, or salmon blossoms, 2 inches or more across. (Plate 31, fig. 84.) *L. Viscaria* is a native plant with grass-like leaves and reddish purple flowers. There are several varieties of it, however, including a white one and rosy pink double one. The White Campion (*L. vespertina*), 1 to 3 feet high, produces its white faintly-scented flowers from May to August. There is a fine double white form. An annual species, *L. oculata*, has pinkish purple blossoms, but also many forms having white, scarlet, crimson-purple, and other shades of colour.

LYSIMACHIA Nummularia (*Creeping Jenny*; *Money Wort*).—A charming creeping or trailing English plant with roundish leaves, and bright golden-yellow blossoms from June to August. It is very easily increased by any piece of stem on damp soil, and may

be grown in any damp and partially shaded spot. The golden-leaved form *aurea* is attractive. *L. clethroides* is a fine Japanese species, 2 to 3 feet high, with large shining green leaves, and erect pyramidal spikes of white flowers from July to September. It may be raised from seeds and increased by division in spring. *L. punctata* (or *verticillata*) grows into a bushy plant about 1 foot high, with oblong lance-shaped leaves and yellow flowers in June and July.

LYTHRUM Salicaria.—This is the common British Loosestrife, 2 to 5 feet high, with lance-shaped willow-like leaves and spikes of reddish-purple flowers in July. It flourishes in any garden soil, but is more natural near the edges of lakes, ponds, &c. Easily increased by seeds or division.

MALCOLMIA maritima (*Virginian Stock*).—A pretty annual, 6 to 12 inches high, with bluntly elliptic leaves and sweet-scented blossoms varying in colour from white and red to lilac, rose, &c. They appear from early summer. Easily raised from seeds.

MATTHIOLA annua—The “Ten Week” Stocks of the florist have been developed from this South European annual, and are well-known by their oblong greyish looking leaves, and flowers having white, rose, purple, yellow, pink, scarlet, violet, and various other colours. There are several distinct groups of Ten Week Stocks now in cultivation, such as the Dwarf, Large-flowered, Giant, Wallflower, Victoria and Pyramidal, all of which are raised from seeds sown in spring, either in gentle heat about March, or in the open ground in April. The double flowered varieties are, of course, far superior to the single ones.



ALSTROEMERIA AURANTIACA VARS. (66, 67)

CAMPANULA MEDIUM VAR. (68)

What are known as "Intermediate" Stocks are raised from seeds sown in July or August under glass to flower early the following year. The "East Lothian" Stocks are raised from seeds sown in March and April, to flower in late summer and autumn, the prevailing colours being crimson, pink, purple, white, and scarlet. The "Brompton Stocks" are vigorous plants with scarlet, white, purple, or crimson blossoms. Unfortunately, however, they can only be grown satisfactorily in warm sheltered spots, and in bleak parts of the Kingdom are best protected under glass in winter. Seeds may be sown under glass in June or July, to flower the following year. If, however, they are sown in gentle heat about February, and the young plants pricked out, and grown on steadily until the end of May, they may possibly flower in the open air the same season under favourable conditions. In trade catalogues there are numerous kinds of Stocks mentioned, but they are all forms of those referred to here. The Night Scented Stock (*M. tristis*) is a biennial, 1 to 2 feet high, with ovate acute leaves. The flowers vary in colour from a dull white to a dull dark purple, and exhale a sweet fragrance in the evening.

MECONOPSIS.—This genus contains some beautiful Poppy-like plants, annual, biennial, and perennial, some of them being remarkably free in growth in almost any garden soil. *M. aculeata*, about 2 feet high, with purple flowers 2 inches across, and *M. nepalensis*, 3 to 5 feet high, with pale golden flowers 2 to 4 inches across, are both biennial, and natives of North India, *M. simplicifolia*, 3 feet high, also from North India, is another biennial with violet-purple flowers, 2 to 3

inches across. The Welsh Poppy (*M. cambrica*) grows 1 to 2 feet high, and produces its pale-yellow blossoms from May to August in almost any soil. It is a perennial, and may be increased by division in spring, or from seeds. In favourable spots indeed it may be left to look after itself. The finest species, however, is *M. Wallichii* from the Himalayas; it grows 4 to 6 feet high, with hairy, divided leaves 12 to 15 inches long, and drooping pale blue flowers 2 to 3 inches across in June and July. There is a variety called *fusco-purpurea* with brownish-purple blossoms. Although really a perennial, *M. Wallichii* is best raised from seeds every year, either in spring or autumn, so as to keep up a supply of plants. Those in the open air, even with the best attention, are apt to die out, and often do not flower for two, three, or four years after having been raised from seeds.

MICHAUXIA campanuloides.—A remarkable biennial Bellflower from South Europe. It grows 3 to 8 feet high, having hairy stems, oblong coarsely-toothed and lobed leaves, and a pyramidal spike of drooping white flowers tinged with purple in July. There are eight or ten petals to the corolla, all narrow and bent backwards. It is easily raised from seeds, but warm sheltered spots are required to bring it to perfection. It is on record that one plant about 5 feet high, and more than 3 feet across, had over 2,000 flower buds on it. Associated with this species is *M. laxigata*, a Persian species said to grow 11 feet high, and having white flowers; and *M. Tchihchatchewi*, another extraordinary plant from Asia Minor, with dense spikes 5 to 6 feet high of white flowers in June and July.

MONARDA didyma (*Oswego Tea*).—A sweet-smelling square-stemmed plant, 1 to 3 feet high, with glossy-green, bronzy-tinted leaves and scarlet Dead-nettle-like flowers produced in pairs or false whorls from July to September. There is a white-flowered variety (*alba*). Both plants flourish in moist soil or marshy spots, and may be increased in spring by division, or from seeds. The "Wild Bergamot" (*M. fistulosa*) is a strong growing perennial, 2 to 5 feet high, having purple bracts and brighter purple flowers.

MORINA longifolia.—A beautiful Himalayan perennial, 2 feet or more high, with spiny thistle-like leaves, and crowded clusters of white or pink and crimson tubular and gaping blossoms from June to September. *M. betonicoides* has narrower spiny leaves and bright rose-purple flowers; while *M. Coulteriana* is similar in appearance, but has pale-yellow flowers. These remarkable plants like a rich loamy soil and warm sheltered spots, partially shaded from hot sun. They may be raised from seeds, or divided in spring.

MYOSOTIS (*Forget-me-not*).—The British Forget-me-not (*M. palustris*), found growing wild in wet ditches and marshy spots, is one of the most charming little plants under cultivation. The sky-blue flowers with a yellow centre, produce a brilliant sheet of colour from May to July. There are several forms of the Forget-me-not, including one with white flowers. The plants are easily raised from seeds, or increased by division. Other pretty species are *M. alpestris*, bright blue, of which there are upright and compact growing forms called *stricta*, *Victoria*, and *Distinction*; *M. azorica*, 6 to 10 inches high, has purple or bright indigo

blossoms, varying in different forms; *M. dissitiflora*, deep sky blue, with many varieties including a white one; *M. sylvatica*, 1 to 2 feet high, with bright-blue flowers, may be treated as a biennial, and the same may be said of *M. Welwitschi* (or *cintra*), a tufted plant about 4 inches high, with bright-blue flowers.

NEMOPHILA.—These popular and showy annuals flourish in any good soil, and may be raised from seeds sown about March in gentle heat, and in the open ground in April. The best species are *N. insignis*, about 18 inches high, with pinnately cut leaves, and sky blue, white, purple, rose, or striped flowers, according to variety. *N. Menziesi* (or *Atomaria*), 4 to 8 inches high, has white or pale blue flowers speckled with black. There are several varieties of it, such as *alba*, *oculata*, *cœlestis*, &c. *N. maculata*, about 6 inches high, has white flowers with a violet-purple blotch at the tip of each corolla lobe; and *N. phacelioides* has pale blue flowers with a white centre.

NICOTIANA affinis (*Sweet-Scented Tobacco*).—A charming plant, 2 to 3 feet high, with bluntly ovate leaves, and large white long-tubed flowers. *N. sylvestris* is another white-flowered Tobacco with much larger leaves. *N. acutiflora* and *N. suaveolens* also have white blossoms, while the Tobacco plant of commerce (*N. Tabacum*) has bell-shaped rosy flowers. These and several others with greenish or yellowish blossoms are usually treated as tender annuals, in the way described at p. 8. *N. glauca*, with yellow flowers is a large plant, 10 to 20 feet high when fully developed. It should be protected under glass during the winter. *N. tomentosa* (or *colossea*) is another large growing



SCABIOSA CAUCASICA VARS. (69, 70, 71)

Tobacco remarkable for its huge oval leaves of ornamental character. A tender variegated form of it has the leaves blotched and marked with creamy white and yellow, and is suitable for beds on the lawn. This variety is best increased by cuttings of the young shoots in sandy soil under glass. *N. Sanderæ*, a charming rose-coloured hybrid, between the white *N. affinis*, and the rose-red *N. Forgetiana*, is a great acquisition, and is easily raised from seeds.

NIEREMBERGIA rivularis.—A beautiful South American perennial with trailing stems, oblong or spoon-shaped leaves, and masses of white bell-shaped blossoms 1 to 2 inches across, produced in August and September. It is a good plant for the rock garden or border, or for draping the sides of vases. It likes a rich and moist sandy soil and partial shade, and may be increased by cuttings, rooted portions of the stems, or from seeds.

ŒNOTHERA biennis (*Evening Primrose*).—This soon usurps every available spot in the garden if not kept in bounds. It is an ornamental plant, valuable for the masses of large fragrant bright primrose-yellow blossoms which appear in summer and autumn. The variety *Lamarckiana* is much superior to the ordinary form. Being a biennial, the plants only flower the second year of growth. Other biennial kinds are *crassicaulis* (pure white), *Drummondii* (yellow and white forms), and *taraxacifolia* (white). There are several perennial species of *Œnothera*, but as they are so easily raised from seeds it is scarcely worth while, except in particular cases, to increase them from cuttings or by division. A few of the best kinds are

eximia (or *marginata*) white; *fruticosa*, golden-yellow with a good variety called *Youngi*; *glauca*, pale yellow; *missouriensis*, yellow; and *speciosa*, white.

ONOPORDON *Acanthium* (*Cotton Thistle*).—A highly ornamental composite, 4 to 8 feet high, with woolly stems and large deeply-lobed leaves, with spiny margins. The purple flower-heads appear from July to September, but the chief beauty of the plant is its foliage. It flourishes in any garden soil, and although a perennial, it is usually raised from seeds and treated as a biennial (see p. 9).

ONOSMA *tauricum* (*Golden Drop*).—This is the best garden plant out of 70 species or more. It is a distinct and beautiful perennial, 6 to 12 inches high, with dense tufts of hairy grey-green leaves, and from May or June to August its bright-yellow tubular flowers droop in arching racemes over the foliage. There is a white variety, rarely seen and not so easy to grow. The same may be said of *O. albo-roseum*, a dwarf species with white flowers and a reddish calyx.

The *Onosmas* require a rich sandy loam, with a little peat and leaf soil, and warm sheltered spots in the rock garden or border. Good drainage is essential, and the plants should be protected from an excess of cold rains in winter by means of hand lights or sheets of glass. They may be raised from seeds, or cuttings of the side shoots in summer, in sandy soil under glass.

OROBUS (*Bitter Vetch*).—These perennials are closely related to the Everlasting Pea (*Lathyrus*), but differ from them chiefly in having no tendrils, and being dwarf and bushy instead of climbing in habit. They flourish in ordinary garden soil, but prefer a

rich sandy loam, and may be increased by division in spring, or raised from seeds. The best kinds are *atropurpureus*, 1 to 1½ feet high, deep rose or violet purple; *flaccidus*, 6 feet high, with purple blossoms; *niger*, 1 to 3 feet high, violet-red; and *vernus*, 1 to 2 feet high, with red-veined purple or blue flowers.

OSTROWSKYA magnifica.—A magnificent Asiatic perennial of the Bellflower order. It grows 4 to 5 feet high, and has large tuberous roots often 2 feet long. The beautiful bell-shaped flowers appear in July, and are glistening white, veined and washed with various shades of lilac-purple. They are often four inches across, and have a conspicuous yellow, club-like disc in the centre. This beautiful plant will thrive in well-drained and deeply dug garden soil. The simplest method of increase seems to be from seeds, but three or four years elapse sometimes before the young plants bloom.

OURISIA coccinea.—A charming Chilian plant of the Foxglove order, 6 to 12 inches high, having roundish coarsely-toothed or notched leaves. From May to September its scarlet tubular flowers, about 1½ inches long, droop from an erect raceme. A particularly well-drained, moist, and sandy peat in a sheltered and shady nook in the rock garden suits this plant well. It is best increased by division in spring.

PÆONIA (*Pæony*).—There are several species known; but none of them can compare with the gorgeous display of blossom produced by what are known as the hybrid and Chinese varieties.

These vigorous-growing plants require a strong, loamy, and well-manured soil that has been deeply

dug or trenched before the plants are put in, say in September or October—the best time. Care should be taken not to bury the crowns too deeply—one or two inches will be sufficient. The plants will grow in almost any position, but they last longer in blossom in partially shaded spots. The plants may be increased by dividing the tuberous rootstocks about September. Seeds may also be sown in light soil in a cold frame. The single-flowered Pæonies, although not so magnificent as the double ones, are nevertheless attractive and graceful in appearance. There are hundreds of named varieties of hybrid and Chinese Pæonies in which the blossoms may be white, creamy-yellow, pink, rose, red, purple, or intermediate shades of colour. (See Plates 9 and 10.)

The best natural species of Pæony are *albiflora* (or *edulis*), white or pink, one of the parents of the hybrid Pæonies; *corallina*, crimson or rose; *decora*, crimson; *Emodi*, white, requires a warm sheltered spot; *humilis*, bright red; *officinalis*, red or crimson, another parent of the hybrid Pæonies; *paradoxa*, purple-red; *peregrina*, bright crimson; *tenuifolia*, dark crimson with finely-cut foliage; *triternata*, rosy-red; and *Wittmanniana*, a rare species with yellow flowers.

PAPAVER (*Poppay*).—The Poppies, both annual and perennial, form a gorgeous group in places where little else will grow. The Annual Poppies—like the charming Shirley varieties—are best raised from seed sown thinly in the open air about March and April. The Shirley Poppies have an extraordinary range of colour from the purest of whites passing through exquisite shades of pink, salmon, rose, apricot, cerise,

yellow, orange, &c., to the deepest crimson. The individual blossoms are large and of the most delicate texture, and are free from the black blotch at the base which characterises the blossoms of the common Corn Poppy (*P. Rhæas*) from which they have been evolved. The French Poppies with double flowers are also a beautiful race from the common Poppy. The Opium Poppy (*P. somniferum*), which grows 3 to 4 feet high, although there are dwarfer forms, has broad lobed and wavy leaves and flowers of various colours, such as white, rose, lilac, &c., and usually with a dark blotch at the base of the fringed petals. The double forms or Pæony-flowered Poppies are varieties of the Opium Poppy, and many of them are exceedingly handsome. The Danebrog Poppy is also a variety. The Peacock Poppy (*P. pavoninum*), with scarlet and black blotched petals; the Tulip Poppy (*P. glaucum*), scarlet red tinged with orange; *P. Hookeri* from India, and *P. lævigatum*, both resembling the wild Corn Poppy in blossom, and *P. setigerum* with violet flowers, may all be raised from seeds in the same way as the Shirley and Opium varieties.

Amongst the perennial Poppies, the Iceland (*P. nudicaule*) and the Oriental (*P. orientale*) are first favourites. The first-named grows 9 to 18 inches high and is usually treated as an annual, being raised from seeds in gentle heat about March, so as to produce its showy white, yellow or orange blossoms in summer. (Plate 1.) Closely related to the Iceland Poppy is *P. croceum*, with single and double orange-yellow flowers. The Oriental Poppy (Plate 8) is about 3 feet high and may be raised from seeds. They

flourish in ordinary good soil, and produce their large scarlet flowers, 6 to 8 inches across, from May to July, and often again in the autumn. There are now many seedling forms, the large flowers of which are remarkable for the distinct shades of "crushed strawberry" colour which they exhibit. Closely related to *P. orientale* is *P. bracteatum*, which has deeply divided hairy leaves and scarlet blossoms like *orientale*, but is taller in growth. *P. pilosum* is another Poppy, 1 to 2 feet high, having oval oblong, hairy, coarsely-toothed leaves and bright scarlet or orange-red flowers, with a white blotch at the very base of each petal. Other perennial Poppies worth growing are *lateritium*, 1 to 2 feet, bright orange; and *rupifragum atlanticum*, 1 to 2 feet, with orange or red flowers.

PENTSTEMON.—The Garden Pentstemons have been raised by crossing such species as *Hartwegi* or *gentianoides*, *Cobæa*, and possibly *Murrayanus*. The plants grow 2 to 3 feet high, having smooth leaves and masses of Foxglove-like flowers in which scarlet, purple, magenta, rose, salmon, and intermediate shades, with a white throat predominate. They are easily raised from seeds sown in gentle heat in March, and planted out 12 to 18 inches apart, about the end of May. Any particularly fine varieties can be kept true by raising them from cuttings inserted in sandy soil in late summer under the protection of a cold frame.

Besides the garden varieties, there are several species worth growing, such as *P. barbatus* (*Chelone barbata*), 2 to 3 feet, with drooping red or carmine flowers; *P. campanulatus*, 1½ feet, with narrow leaves and drooping purple blossoms; *Cobæa*, 1 to 2 feet, a



MARIPOSA LILIES (*CALOCHORTUS VENUSTUS*) (72, 73, 74)

distinct kind with large pale mauve and white flowers, but too tender for most parts in the open air; *confertus*, 6 to 18 inches high, pale yellow flowers from May to July; *Digitalis*, 1 to 2 feet, white; *glaber*, 1 to 2 feet, purple, violet, or blue; *Hartwegi*, 2 to 3 feet, scarlet or blood red; *Jaffrayanus*, 1 to 2 feet, deep blue; *lævigatus*, 2 to 4 feet, white and purple; *Murrayanus*, 2 to 3 feet, scarlet; *rotundifolius*, 1 to 2 feet, brick red; and *speciosus*, 3 to 4 feet, sky-blue tinted with red.

PETASITES fragrans (*Winter Hyacinth*).—A coarse-growing plant with tufts of whitish, roundish, toothed leaves, and chiefly valuable for the trusses of sweet-scented whitish or pale lilac flowers which appear in January and February. It grows in any rough soil and is useful for decorating rough banks in winter. Increased by division after flowering.

PHACELIA.—There are a few ornamental annuals in this genus that may be raised from seeds sown in gentle heat in March, or in the open ground in April. They flourish in ordinary soil, and may be planted in clumps in vacant places in the border. The best known kinds are *campanularia*, 6 to 9 inches high, with deep blue broadly bell-shaped flowers; *grandiflora*, 3 to 5 feet high, violet-purple; *divaricata*, a trailing species with pale violet flowers, which become rosy-lilac in the variety called *Wrangeliana*; *Parryi*, 6 to 12 inches high, deep violet blue; and *Whitlavia* (or *Whitlavia grandiflora*) 2 feet high, with rich blue flowers, or white ones in the variety called *alba*.

PHLOMIS.—These perennials of the Dead-Nettle family form conspicuous plants in the border on account

of the whiteness of their foliage. They grow in any well-drained garden soil, and may be increased by division in spring, or from seeds. The most useful kinds are *cashmeriana*, 2 feet high, with woolly white stems and leaves, and lilac-purple 2-lipped flowers; *viscosa*, 3 to 5 feet high, whitish, with numerous yellow flowers. The Jerusalem Sage (*P. fruticosa*) is a shrubby plant 2 to 4 feet high, with woolly white leaves, and masses of yellow flowers. It may be increased by seeds, or cuttings of the young shoots.

PHLOX.—There are several species of perennial Phloxes, but they are now overshadowed by the lovely garden forms which have been developed from *P. maculata*, *P. paniculata*, and *P. suffruticosa*. They flourish in any good well-drained garden soil that has been deeply dug and enriched with well-decayed manure. The simplest way to increase them is by division of the rootstocks in spring. Cuttings of the young shoots will also root freely in sandy soil in a greenhouse or close frame. Seeds may also be sown in spring. As to colour there is a good range from pure white through pink, rose, lilac, magenta, salmon, purple, crimson, and almost scarlet—some forms being quite pure, while others have a distinct colour in the centre or “eye.” In trade catalogues hundreds of varieties are named and described, and the reader may select his favourite colours from them. (Plate 31.)

Among the natural or wild species of Phlox worth a place in the garden may be mentioned:—*amœna*, purple, pink, or whitish; *divaricata* (or *canadensis*), pale lilac or bluish, or white in the form called *alba*; *ovata*, reddish-purple; *procumbens*, lilac; *pilosa*, with

hairy leaves and purple-lilac flowers; *reptans*, rose-purple or violet; *stellaria*, white, with a variety called *lilacina*, having lilac-purple blossoms; *subulata*, a creeping species with narrow, awl-shaped leaves and pinkish purple or white flowers. There are many forms of this, such as *setacea*, bright, pink; *violacea* crimson purple; *nivalis* (or *Nelsoni*) snowy white; *G. F. Wilson*, mauve; and several others—are mostly dwarf or trailing plants.

The only annual species, *P. Drummondii*, is a native of North America, and grows about 1 foot high. It has ovate lance-shaped leaves, and flowers varying in colour from white to red, rose and purple, with a distinct colour in the centre. Numerous garden varieties have been developed and many more shades of colour besides those mentioned have been evolved by selection. They are all easily raised from seed in March or April.

PHYGELIUS capensis.—A handsome South African perennial, 3 to 4 feet high, with ovate lance-shaped bluntly-toothed leaves, and drooping, tubular, scarlet blossoms from June to October. The plants like a rich loamy soil, in warm sheltered spots. Seeds may be sown under glass in spring. The crowns may also be carefully divided at the same period; and cuttings of the young shoots will root in sandy soil.

PHYSALIS Francheti.—This strong-growing Japanese perennial, 1 to 2 feet high, has broad ovate leaves and white flowers in summer. Its chief beauty, however, lies in the calyx which enlarges after the flowers wither and becomes a balloon-like body about 3 inches long, and of a bright orange red in colour (Plate 32, fig. 86). It encloses the scarlet cherry-like berry in

the pulp of which are embedded the flat yellowish seeds from which new plants are easily raised when sown in spring in gentle heat. Another species is *P. Alkekengi*, similar in appearance, but smaller in every way—especially in the blood-red calyx which is only about an inch in length. These plants have been called “Chinese Lanterns” owing to the appearance of their calices when drooping from the branches. Besides seeds, both kinds are readily increased by division in spring, and also from cuttings.

PHYTOLACCA (*Poke Weed*.)—Distinct and beautiful perennials easily grown in good garden soil. Not only are the cylindrical spikes of flowers attractive in themselves, but the succeeding masses of purple-violet berries, and the red-tinted foliage in autumn render the plants conspicuous throughout the whole season. They are increased by division in spring, or from seeds sown at the same period under glass. The best known species are: *P. acinosa*, 3 to 4 feet high, with oblong elliptic leaves and white or blush flowers on erect spikes 6 to 8 inches long. *P. decandra*, known as the “Red Ink Plant” and “Pigeon Berry” a bold growing species 3 to 10 feet high, has rather an unpleasant odour, probably from its large fleshy and poisonous roots. The ovate leaves are about 6 inches long, and change to a beautiful purple in autumn. The spikes of white flowers are succeeded in due course by the deep purple berries which contain a crimson juice like red ink. *P. icosandra* grows 2 to 3 feet high, and has thickish elliptic oblong tapering leaves 4 to 9 inches long, and spikes of pinkish-white flowers. These are followed by fruits resembling over-ripe Blackberries.

PLATYCODON grandiflorum.—A beautiful Chinese and Japanese perennial, 6 to 24 inches high, closely related to the Campanulas. It has ovate lance-shaped leaves with toothed margins, and produces its broadly bell-shaped purple blossoms, 2 to 3 inches across, about July and August. There are several varieties, the best being *albidum*, white, and *Mariesi* (or *pumilum*), a dwarf plant with large distinctly veined flowers of pale or dark bluish-purple (Plate 30, fig. 81). The plants flourish in a rich and well-drained sandy loam, and may be increased by careful division in spring; by cuttings of the young shoots in summer under glass; and by seeds sown in gentle heat in spring.

PODOPHYLLUM.—These ornamental perennials with lobed Duck's foot-like leaves enjoy a moist peaty soil in warm, sheltered, and partially shaded spots. They may be increased by division of the rootstocks in spring, and also by seeds. The young plants are best grown on in pots for a year or so, until well established. The following are the only kinds known: *P. Emodi* from the Himalayas, 6 to 12 inches high, having sharply-toothed 3 to 5 lobed leaves heavily spotted or washed with purple. The white flowers appear about May, and are succeeded by elliptic edible red berries about 2 inches long. *P. peltatum*, from North America, has poisonous wrinkled leaves and roots. The former are glossy green and 5 to 9 lobed. The non-flowering stems end in a large roundish umbrella-like leaf with 7 to 9 lobes. The waxy white flowers two inches across, appear in May, and are followed by green or yellowish fruits 1 to 2 inches long. *P. pleianthum* is an interesting Chinese

plant, 1 to 2 feet high, with roundish peltate leaves divided into 6 to 8 triangular toothed lobes. The flower stems are forked, and large bunches of drooping purple flowers are borne in the axil, being succeeded by green and purple berries 1 to 2 inches long.

POLEMONIUM (*Greek Valerian*).—These distinct-looking plants of the Phlox family usually have divided leaves and clusters of funnel or bell-shaped blossoms. They flourish in good rich garden soil, and are easily increased in spring by dividing the root-stocks or by seeds. The best species for massing in the border or rock garden are: *P. caruleum* (Jacob's Ladder), 1 to 3 feet, native of Britain, with 6 to 12 pairs of ovate leaflets, and blue or white flowers in June and July (Plate 11, fig. 30); there are several forms, such as *dissectum*, the leaflets of which are divided a second time; *himalayanum* and *campanulatum*, both with lilac-blue blossoms; *P. confertum*, from the Rocky Mountains, is only about 6 inches high, with rich blue flowers; *P. humile* (or *Richardsoni*), *P. mexicanum*, and *P. pulchellum* are similar kinds with blue or purple flowers. *P. flavum*, 2 to 3 feet high, and *P. pauciflorum*, 1 to 2 feet high, are yellow-flowered.

POLYANTHUS.—The Garden Polyanthus are said to be descended from *Primula variabilis*, itself a hybrid between the common Primrose (*P. vulgaris*), and the Cowslip (*P. officinalis*). Unlike the Primrose, the umbels of flowers are thrown up above the foliage.

The forms with pure and well-defined colours and large flat corollas are better than those with indefinite shades and irregular outlines. The "gold laced" Polyanthus are a charming group, characterised by



ERYNGIUM AMETHYSTINUM (75) INCARVILLEA DELAVAYI (76) SENECIO CLIVORUM (77)

the bright golden border surrounding the rich velvety red or crimson zone outside the centre or eye of the flower. The "Fancy" or "Giant" Polyanthuses have large blossoms varying from pure white and yellow to deep purple and crimson. Besides the single-flowered varieties there are many double-flowered ones, and also "Hose-in-Hose" forms, in which the calyx is an exact counterpart of the corolla. Although Polyanthuses grow well in any good garden soil, they like a rich, sandy loam, and partially shaded spots. The best time to divide the plants is when the leaves have begun to turn yellow. They should be transplanted before the end of September so as to become well-established before winter sets in. Single and double varieties are shown on Plates 5 and 6.

POLYGONATUM multiflorum (*Solomon's Seal*).—

This general favourite has arching stems and drooping clusters of white or greenish-white flowers in May and June. It flourishes in ordinary good garden soil in partially shaded places and may be increased by division of the thick creeping rootstocks in autumn when the leaves are withering away.

POLYGONUM (*Knotweed*).—These free growing and ornamental plants sometimes spread over a garden with great rapidity. Most of them flourish in any garden soil, and are effective in foliage and blossom when in bold groups. Some of the kinds are suitable for the flower border or the rock garden, and among these the best are:—*P. affine*, 6 to 9 inches high, with oblong lance-shaped leaves and dense spikes of rosy red flowers from August to October. *P. Bistorta*

—the Bistort or Snakeroot—is a native plant, 1 to 2 feet high, with oblong ovate wavy leaves and dense cylindrical spikes of white or deep pink blossoms from June to September. It flourishes in damp spots in the border or rockery. *P. cymosum* is a handsome Chinese species, 2 feet high, with peltate triangular leaves, silvery white beneath, and clusters of white flowers in July and August. *P. filiforme variegatum*, $1\frac{1}{2}$ to 2 feet high, is a charming plant with variegated creamy-yellow and green leaves.

Among the climbing kinds of Polygonum the best are *baldschuanicum*, with trailing woody stems and fleecy masses of white blossoms in summer. *P. dumetorum* is a charming British climber with Convolvulus-like leaves and masses of white flowers.

The tall growing bushy Polygonums always attract attention. *P. cuspidatum* is a well-known Japanese perennial, 4 to 10 feet high, with stout hollow stems and broadly oval oblong leaves, sharply tapering to a point. The creamy-white flowers are borne in great profusion in feathery panicles in summer. *P. compactum* grows 2 to 4 feet high, but is otherwise similar to *cuspidatum*. *P. lanigerum*, 6 to 10 feet high, is remarkable for its large lance-shaped wavy leaves covered with a whitish silvery down, and its clusters of rosy-red flowers. *P. sachalinense*, 10 to 12 feet high, has broadly ovate-oblong tapering leaves 8 to 12 inches long; while *P. sphærostachyum* has narrow, oblong, or lance-shaped leaves about 6 inches long, somewhat crisped and roundly toothed on the margins. The blood-red flowers appear in August and September in cylindrical spikes. These bushy species are effective

on the lawn, or near the edges of streams, ponds, &c., or may be grown in the rougher parts of large gardens. *P. orientale*, an annual species, grows 3 to 10 feet high, having large downy oval acute leaf, and drooping racemes of rosy-purple flowers in August. It is raised from seeds sown in gentle heat about March. The perennial kinds mentioned above are easily increased by division in spring.

POTENTILLA (*Cinquefoil*).—About 120 species are known, but many of them are mere weeds. From a decorative point of view, the double-flowered garden forms that have been developed from the purple-flowered *P. nepalensis*, and the deep crimson *P. argyrophylla atrosanguinea* are the most attractive. Numerous named varieties, 2 to 3 feet high, are to be found in nurserymen's catalogues, and great diversity of colour exists among them—red, yellow, orange, crimson and purple predominating. They all like a well-manured sandy soil, and may be increased by division of the rootstocks in spring.

PRIMULA (*Primrose*).—With the exception of one or two species from the cold regions of South America, there are 150 or more species of Primrose distributed throughout the temperate parts of Europe, Asia, and North America. Comparatively few of them are known outside botanic gardens, and although they may all be said to be pretty, it is questionable whether any of them can surpass or even equal the common British Primrose (*P. vulgaris*) in grace or beauty. There are now many forms of it considered to be of garden value. In these, the yellow colour has given way to shades of lilac, rose, mauve, bluish-violet, pure

white and intermediate shades, and strenuous efforts have been made to perpetuate a race of "Blue" Primroses. The true blue Primrose, however, is still a long way off, and it may be noted that the nearer the plants get to this colour, the more difficult they are as a rule to cultivate and increase. In addition to the single-flowered Primroses of various shades, there are also double ones equally varied in colour. A rich sandy loam and leaf soil, and partially shaded spots in the rock garden will suit the stronger growing kinds perfectly; but unique or very rare specimens are safer grown in cold frames.

With the ordinary Primrose, the Cowslip (*P. officinalis*), and Oxslip (*P. elatior*), may be grown, and receive similar treatment in shady dells, pastures, or banks. As it is impossible to give detailed descriptions of all the wild species of *Primula* here, it is only necessary to say that they may nearly all be grown without much difficulty in the open air, provided a well-drained sandy loam and leaf soil is used. Many of them ripen seeds freely, and in this way they may be increased as well as by division after flowering is over.

For more detailed particulars as to descriptions, &c., of the *Primulaceæ* the reader is referred to the author's "PRACTICAL GUIDE TO GARDEN PLANTS."

PRUNELLA grandiflora (*Self Heal*).—A pretty perennial, about 6 inches high, with ovate leaves and erect trusses of violet or purple two-lipped flowers. The variety *alba* has white Dead-nettle-like blossoms, and *Webbiana* has crimson-purple ones. The plants are easily increased by division in spring, or from seeds.

PULMONARIA (*Lungwort*).—These rather coarse-



ROMNEYA COULTERI (78)

growing plants flourish in ordinary soil in partially shaded spots, and are easily increased by division of the tufts in spring, or from seeds. The best known kinds are:—*angustifolia*, the Blue Cowslip, 1 foot high, having oblong lance-shaped hairy leaves, spotted with pale green, and pink or bright blue flowers from April to June; *P. officinalis*, Bethlehem Sage, is somewhat similar, but has ovate heart-shaped leaves spotted with white, and violet flowers which are at first reddish. In the variety *alba* they are white. *P. mollis* has blue flowers, and *P. saccharata* pink ones—all appearing in early summer.

PYRETHRUM roseum.—This beautiful Caucasian perennial, 1 to 2 feet high, is recognised by its deeply-cut fern-like leaves and rose-coloured flower-heads with a yellow centre. There are numerous forms single and double, and a few of them are shown on Plate 15. The colours vary from the purest white through pink and rose, to the deepest red and carmine, while there are also a few yellow flowered varieties. All the kinds are excellent for cutting. The plants require a rich and well-drained soil in open sunny situations, and may be increased by careful division of the rootstocks in spring, or from seeds.

RAMONDIA pyrenaica.—A charming Pyrenean perennial—resembling *Haberlea rhodopensis*—with flat rosettes of wrinkled, ovate, deeply-toothed, and hairy leaves. The flattish purple flowers, over $1\frac{1}{2}$ inches across, with a bright yellow centre, appear in May and June on stalks about 3 inches high. The variety *alba* has pure white flowers, but is otherwise similar. *R. serbica* (or *Jankæa Heldreichi*) has the leaves

covered with whitish silky hairs, and yellow blossoms. Both kinds are typical rock plants and flourish in sandy peat, loam, and leaf soil. If planted so that the roots penetrate between the rocks, the leaves form rosettes on the vertical face, and the flower stems stand out more or less horizontally. The plants are increased by careful division about August, the side shoots being planted in sandy peat and loam, and kept shaded and moist in a frame until established. Strong healthy leaves cut off right at the base and inserted in a similar compost and kept moist and shaded, also often develop into plants. Seeds when thoroughly ripe may be sown in cold frames or in spring. *R. Natalie* is similar to *P. pyrenaica*.

RANUNCULUS (*Crowfoot; Buttercup*).—Few Buttercups are of garden value, those mentioned here being the best. *R. aconitifolius*, with lobed and toothed leaves, and white flowers in May and June, grows about 2 feet high. It is eclipsed in beauty, however, by its double flowered variety (*flore pleno*), popularly known as “Fair Maids of France,” the pure white blossoms resembling miniature Camellias in shape. It flourishes in moist soil and partially shaded spots, but the foliage is sometimes attacked with a maggot. The double-flowered form of the common Buttercup (*R. acris flore pleno*), called “Bachelor’s Buttons,” and “Gold Knots,” is a pretty border plant with rosettes of glistening yellow blossoms from April to September. Somewhat similar is the double form of the common Bulbous Buttercup (*R. bulbosus fl. pl.*) with its bright yellow flowers. *R. alpestris*, *R. amplexicaulis*, and *R. parnassiaefolius*, are pretty little rock plants having pure white flowers.

The florists' *Ranunculuses*—divided into such groups as the Scotch, Dutch, French, Italian, Persian, and Turkish or Turban—are all forms of *R. asiaticus*. They are remarkable for their large and beautiful flowers of scarlet, white, yellow, orange, and intermediate shades. The best time to plant the roots of these kinds is from the middle to the end of February in well-drained sandy loam and leaf soil, about 6 inches apart, either in rows or in patches. They should be covered with about two inches of soil and gently beaten down with the spade. As growth advances the soil should be kept free from weeds, and stirred up occasionally with a small hoe or rake. In addition a little weak manure water two or three times a week will assist in the better development of the blossom. After the plants have finished blooming, and the leaves have withered, the clawed roots may be taken up, cleaned, dried, and stored in sand for the winter months in a dry airy place free from frost. When replanting, any offsets from the old roots may be detached and sown in a bed of sandy soil by themselves. Seeds proper may be sown in shallow boxes or pans in gentle heat in February or March, or in August and September. The young plants are best grown on under glass for the first season, being harvested and stored like the old plants, after the leaves have withered.

RESEDA odorata (*Mignonette*).—This universal favourite, is highly valued for the sweet fragrance of its finely-divided yellowish-white flowers. There are numerous varieties, such as *Machet*, *Spiral*, *Golden Queen*, *Bismarck*, &c., all worth growing either in pots or in the open border. For the latter, seeds should be

sown very thinly from April to midsummer at intervals of three or four weeks, so as to keep up a succession during the year. Ordinary good garden soil will serve, but it should be finely prepared for the seeds.

RHEUM (*Rhubarb*).—All Rhubarbs may be said to be ornamental and bold in outline, but a few kinds are more especially grown for the decoration of the flower garden and grounds. A rich well-drained soil and warm sunny spots will suit the following:—*acuminatum*, 3 feet high; *australe*, 6 to 10 feet; *Emodi*, 6 to 10 feet; *nobile*, 3 feet or more; *officinale*, 8 to 10 feet; *palmatum*, and its variety *tanghusicum*, 5 feet; and *undulatum*, 4 to 5 feet. In all cases the leaves are large, more or less roundish heart-shaped and palmately-lobed, giving a luxuriant and subtropical aspect to the garden. They are easily raised from seeds in a few days in gentle heat in spring, the young plants being ready for the open air the following season. Old plants may be divided in spring to increase the stock if necessary.

RODGERSIA podophylla.—A very ornamental Japanese perennial with a thick rootstock and large lobed and cleft leaves with serrated segments. The yellowish-white Spiræa-like blossoms are borne in large panicles in June and July. A moist peaty soil and a partially shaded situation are best for this plant. Propagation is best effected by careful division of the rootstock in spring.

ROMNEYA Coulteri.—A charming bushy perennial, 2 to 8 feet high, of the Poppy family, having deeply-divided glaucous-green leaves. The large sweet-scented white flowers, often 6 inches across, with a bunch of

conspicuous yellow stamens in the centre, appear from June to September. A medium-sized blossom is shown on Plate 29. Being a native of California the plant requires to be grown in the warmest and sunniest spot in the garden. It likes a rich and well-drained sandy loam, and copious waterings during hot seasons. Weak doses of liquid manure may be given two or three times a week when the flower-buds are showing, so as to impart greater size and substance to the blossoms. In cold wet winters it is advisable to protect the crowns with litter or hurdles. As the plants do not bear division or transplanting very well, it is better to increase the stock by sowing seeds in gentle heat in March, the young plants being grown on in pots for one or two seasons.

RUDBECKIA (*Cone Flower*).—These useful and ornamental plants flourish in almost any garden soil and increase with almost as much freedom as the perennial Sunflowers. The easiest way to increase them is by division of the rootstocks in spring. Seeds, however, may also be sown if necessary. The flowers of nearly all the kinds are yellow or orange, and are remarkable for the conical receptacle bearing the disc florets in the centre. The best known perennials with yellow flowers are: *californica*, 5 to 6 feet high, with oval pointed leaves; *columnaris*, 2 to 3 feet high, with leaves pinnately cut into sharp pointed linear lance-shaped segments; *Drummondii*, 1½ to 2 feet high; also with pinnately-divided leaves; *hirta*, 1 to 2 feet high, rough and hairy, leaves oblong lance-shaped above, spoon-shaped below; *laciniata*, 2 to 4 feet high, the main shoot often much taller,

leaves deeply cut. The variety *flore pleno* has beautiful double flowers; *maxima*, 4 to 8 feet high, with oval or oblong leaves 8 to 12 inches long; *speciosa* (or *Newmanni*) 2 to 3 feet high, with ovate and lance-shaped leaves. *R. purpurea* (or *Echinacea purpurea*), 3 to 4 feet high, has ovate lance-shaped leaves. The flowers are deep rosy purple, often four inches across.

SALPIGLOSSIS sinuata.—One of the most striking and beautiful of Chilian annuals. It is about 2 feet high, having clammy oblong leaves with sinuate or deeply-cut margins. The bell-shaped blossoms, 2 to 3 inches across, are borne in great profusion in July and August, and are remarkable for the brilliancy of their colours—such as orange, salmon scarlet, cerise, violet, crimson, purple, &c.—and the beautiful veining of the corollas. Seeds may be sown in gentle heat in February or March, and the young plants transferred to the open ground at the end of May, at a distance of 6 to 9 inches apart.

SANGUINARIA canadensis (*Blood Root; Red Puccoon*).—A distinct and pretty perennial, 3 to 6 inches high, having thickish rootstocks with orange or reddish juice. The leaves are rounded and palmately veined, and the white flowers appear in April and May. The variety *grandiflora* has larger blossoms. The Blood Root likes a rich moist soil and shady places in the rockery or flower border. It is increased by careful division of the roots in spring, or from seeds sown thinly in pots or pans, the young plants not being disturbed until the leaves have withered.

SANVITALIA procumbens.—A beautiful Mexican composite annual with trailing stems and ovate leaves.



LOBELIA CARDINALIS (79)

COSMOS BIPINNATUS (80)

PLATYCODON MARIESI (81)

The bright yellow flowers with a dark purplish disc resemble a small *Rudbeckia* during the summer months. In the double-flowered form the purple disc is absent, and the flower-heads are entirely yellow. Being compact in growth and free in blossom, the *Sanvitalia* is useful as an edging to borders, or trailing in the rockery. It is easily raised from seeds.

SAPONARIA (*Fuller's Herb; Soap Wort*).—These pretty plants grow in any good garden soil, and are useful for the edges of borders, shrubberies, rockeries, &c. All kinds, both annual, biennial, and perennial, are easily raised from seeds in spring in gentle heat, or in autumn. The best known annual kind is *S. calabrica*, about 6 inches high, with beautiful small rosy blossoms in great profusion; the white flowered variety *alba* is also pretty. *S. ocymoides* is an elegant trailing perennial forming dense tufts on the ground, and bearing panicles of red or pink flowers from May to August. There are several forms of it, that known as *splendens* being the best. It is an excellent plant for the rockery. *S. officinalis*, the “Bouncing Bet” of our waysides, grows 1 to 2 feet high, and has lilac or pinky-white blossoms in August and September, the double-flowered form (*flore pleno*) having blossoms like a small *Carnation*.

SAXIFRAGA (*Rockfoil; Breakstone*).—A large and charming group of plants chiefly valuable for the rock garden, although several of the larger and stronger growing kinds are suitable for the flower border, and at least one (*S. peltata*) is ornamental near the edges of ponds or streams. There are a few annual kinds, but they are scarcely worth attention.

The perennial kinds are mostly evergreen, and form mossy patches of foliage on the rocks or soil, looking gay all the year round. As pot plants for the decoration of cold greenhouses they are charming, and some of the rarer and choicer sorts are better grown in this way to avoid risk of loss in the open ground. Another very remarkable group is the "encrusted" Saxifrages, so called owing to the incrustations of lime that are often to be found on the margins of the silvery leaves. The latter are arranged in dense rosettes, and are peculiarly conspicuous clothing the mounds or boulders in the rock garden.

The well-known "London Pride" or "St. Patrick's Cabbage" (*S. umbrosa*) may be taken as the representative of another group, easily grown and increased from offsets or division. *S. umbrosa* has rosettes of broadly-ovate coarsely-toothed leaves and panicles of pretty white flowers, speckled with crimson.

The Umbrella Plant (*S. peltata*) from California is the largest Saxifrage known. It is remarkable for its large roundish peltate leaves, 6 to 8 inches wide with 6 to 10 inch lobes, and borne on stalks 1 to 2 feet high. The leaves being depressed in the centre are capable of holding a large quantity of water after a heavy rain. The flowers appear about April, being white or pale lilac in colour.

A very distinct group of Saxifrages are those which were at one time known under the name of *Megasea*. They are easily recognised by their large beautiful leaves in dense masses, and the sturdy spikes of numerous flowers. *S. cordifolia*, with roundish heart-shaped leaves, has clear rose blossoms from

March to May (Plate 3, fig. 6). The variety *purpurea* has leathery leaves shaded with bronzy-purple, and the blossoms are of a deep rosy-purple. *S. crassifolia* is very similar, having large obovate or oval leaves and rosy-pink flowers. *S. ligulata* has heart-shaped wavy leaves, toothed on the margins, and expanded at the base into a fringed sheath. The flowers appear from March to May, being pale red or almost white in forked panicles. The variety *ciliata* is distinguished from the type by its smaller hairy leaves and white flowers. *S. purpurascens* has large roundish leaves with red margins and masses of purple bell-shaped flowers from April to June. *S. Stracheyi* is a vigorous Himalayan Saxifrage, with glossy-green obovate wedge-shaped leaves, sheathing at the base, the sheaths being irregularly toothed and fringed on the margins. The beautiful rose-pink flowers appear in March in much branched drooping panicles.

The Megasea section flourish in ordinary good garden soil, and may be increased by division about August or September.

SCABIOSA caucasica.—A charming Caucasian plant of the Teasel order, 1 to 3 feet high, with more or less lance-shaped leaves and an abundance of long-stalked lilac-blue blossoms, as shown in Plate 26, figs. 69-71, from June to August. There are several forms, the white-flowered one (*alba*) probably being the best. Although really a perennial, and capable of being increased by the division of the rootstocks in spring, or from cuttings during the summer months, it is generally treated as a biennial like the Canterbury Bell. To secure the plants flowering in one

season, the seeds must be sown in heat about February, the young plants being pricked out and hardened off by the end of May. The common purple or Sweet Scabious, also known as the "Mourning Widow" (*S. atropurpurea*) is a very handsome European annual, 2 to 3 feet high, with ovate lance-shaped, divided, and coarsely-toothed leaves. The sweet-scented, deep crimson-purple flowers appear in summer, and are useful for cutting. There are now many varieties of it, having various shades of crimson, purple, pink, yellow, and pure white blossoms.

SEDUM (*Stoncrop*).—A large genus of ornamental and easily-grown plants. The dwarf or mossy section, like the common Stoncrop, *S. acre*, *S. anglicum*, and several others, flourish on old walls, ruins, or rockeries, and are easily multiplied by division. *S. rupestre*, with dense cylindrical masses of narrow glaucous-green leaves and yellow blossoms, is a good rock plant. There is a peculiar fasciated form called *monstrosum*, in which the stems are twisted and flattened. Easily increased by division. Among the kinds, however, suitable for the flower border, the following are the most attractive :—*S. roseum*, a fleshy-looking British plant, 6 to 18 inches high, with yellow or purplish flowers from May to August; *S. Sieboldi*, from Japan, a pretty trailing kind with roundish bluish-green leaves in threes, and numerous pinky flowers in summer. The variegated variety with creamy-white marking on the leaves is more tender and requires protection in the colder parts of the country. *S. spectabile*, (or *S. Fabaria*) is a strong and perfectly hardy Japanese perennial, 1 to 2 feet high, with bluntly-toothed

glaucous-green fleshy leaves, and large flat-headed trusses of pinkish-purple blossoms in September and October. It is easily increased by division in spring. The same may be said of *S. Maximowiczi*, $1\frac{1}{2}$ to 2 feet high, with bright yellow flowers in July.

SEMPERVIVUM (*Houseleek*).—There are 40 or 50 species of Houseleeks easily recognised by their rosettes of thickish fleshy triangular leaves, often delicately webbed. They flourish in dry, sandy soil in the rock garden, against or upon old walls and ruins, and are easily multiplied by means of the offsets that spring out from the base of most of them. The best known kinds are probably the common Houseleek (*S. tectorum*), which flourishes literally on old roofs; and the Spider-web Houseleek (*S. arachnoideum*), a distinct little Pyrenean species with bright red flowers and dense rosettes of wedge-shaped leaves veiled with white cobwebby hairs.

SENECIO.—The common Groundsel (*S. vulgaris*) is undoubtedly the best-known and most maligned representative of this genus, which contains about 900 others. Comparatively few are of any value for the flower garden, and such large and vigorous kinds as *S. Doria*, *S. macrophyllus*, *S. sagittifolius*, and *S. sarracenicus*, are best in the rougher parts of large gardens where the boldness of their foliage will not be out of place. They are all yellow flowered, except *sagittifolius*, which is creamy-white.

Perhaps one of the most charming Senecios is *S. pulcher*, from Buenos Ayres. It grows 2 to 3 feet high, and has ovate, lobed, cut or coarsely-toothed leaves. The beautiful rosy-purple flower-heads, each

2 to 3 inches across, with a bright yellow centre, appear in September and October, at a time unfortunately when they are often spoiled by cold rains or frost, and are prevented from ripening seeds. A moist yet well-drained sandy loam is best for *S. pulcher*, and also a warm sunny position. It is best increased by careful division of the rootstocks in spring, and also by means of pieces of thicker roots about two inches long, inserted in sandy soil and plunged in bottom heat, or even kept in cold frames. *S. concolor*, from South Africa, grows 1 to 2 feet high, and has mauve purple flowers with a white centre. It is rather tender, and with protection in winter, may be treated like *S. pulcher*. A beautiful and free-flowering annual is *S. elegans* from South Africa. It grows 1 to 2 feet high, and has masses of purple flower-heads with yellow centres. There are many garden forms, the double-flowered ones being very attractive. The colours now embrace crimson, purple, rose, white, lilac, magenta, &c. Seeds may be sown in gentle heat in March, or in the open air in April and May, or in cold frames in September, so as to secure a succession of blossom. *S. clivorum*, of which a flower is shown on Plate 28, fig. 77, is a new species with large leaves. A good plant for damp places or near the margins of lakes.

SIDALCEA candida.—A rather pretty Malvaceous plant 2 to 3 feet high, with long-stalked roundish and lobed leaves, and trusses of white flowers—like small single Hollyhocks. This species flourishes in any garden soil, and although a perennial, is often treated as an annual in being raised from seeds sown in heat in spring, or in autumn in cold frames. *S. malvæflora*,



PERENNIAL PILOXES (82. 83)

LYCHNIS HAAGEANA (84)

from Texas, is somewhat similar, but has lilac or pale rose blossoms. In the variety *Listeri* the petals are prettily fringed.

SILENE (*Catchfly*).—The annual *Silenes* (all forms of *S. pendula*), of which there are pink, rose, and white varieties, are easily raised from seeds sown in spring in gentle heat or in the open air. When massed in the border they are very effective and as they are only 6 to 12 inches high, may be used to fill up inevitable gaps near the front among perennials. Other annual *Silenes* are, *Armeria*, pink, and also white; *Atocion* pink; and *vespertina*, rosy. *S. compacta* is a charming biennial with dense clusters of pink or deep rose blossoms. It may be raised from seeds in heat in spring if required to flower the same season, or in autumn in cold frames to flower the following year.

Amongst the perennial *Silenes* may be mentioned: *S. acaulis*, a pretty species with dense cushions of foliage, through which the pink, rose, crimson, or white blossoms peep in summer. *S. Elizabethæ*, bright rose; *S. maritima flore pleno*, with double white flowers from June to August. *S. orientalis*, about 2 feet high, is a bushy plant with large globular heads of bright rose clove-scented blossoms. *S. Schafta* has purple flowers; and *S. Zawadski* has clusters of white flowers from May to July.

SILYBUM Marianum (*Our Lady's Milk Thistle*).—An interesting Thistle-like plant with large sinuately-lobed and divided leaves with spiny margins and irregular white blotches all over the surface. The large rose-purple flower-heads appear from July to September on stout stalks 2 to 4 feet high. This

plant is chiefly grown in rough places for the ornamental aspect of its foliage. It is easily raised from seeds in spring and flourishes in any garden soil.

SHORTIA galacifolia.—A beautiful tufted North American rock plant, 2 to 3 inches high, with long-stalked broadly elliptic or roundish leaves, that become deeply tinted with bronzy-purple in autumn. The solitary white funnel-shaped flowers appear in March and April, gradually becoming tinged with pale rose. A mixture of sandy peat and loam, and a warm sunny spot suit this little plant well. It may be raised from seeds, or by careful division in early autumn.

SOLIDAGO (*Golden Rod*).—Ornamental, but coarse and rank-growing, composites with feathery trusses of bright golden-yellow flowers in summer and autumn. They are suitable for rough parts of the garden or near lakes and streams, and flourish in any ordinary garden soil. They are easily increased by division of the rootstocks in spring. There are about 80 species altogether, but these will give general satisfaction: *canadensis*, *rigida*, *rugosa*, *Shorti*, and *speciosa*, 3 to 6 feet high; *Virgaurea*, 1 to 2 feet, &c.

SPIGELIA marilandica.—An effective North American perennial, 6 to 18 inches high, with dense erect tufts of four-angled stems and ovate lance-shaped leaves. The trusses of more or less tubular blossoms, 1 to 1½ inches long, appear in summer, and are deep red or crimson outside, and yellow within. This plant requires a moist peaty soil and a partially shaded spot in the border or rockery. It may be increased by careful division of the roots in spring.

SPIRÆA.—(*Meadow Sweet*).—The herbaceous

Spiræas are graceful bushy plants for massing in the border or shrubbery, or near the margins of ponds or streams; indeed the latter position is the most natural one for all of them. A rich and moist, yet well-drained, loamy soil suits them perfectly, and they may all be raised from seeds sown in spring, or when ripe in cold frames; or be increased by division.

The most valuable kinds are:—*S. Aruncus*, the Goat's Beard, a charming plant, 3 to 5 feet high with thrice pinnate leaves, and feathery panicles of creamy-white blossoms thrown well above the foliage in June and July. *S. Kneiffii* is a peculiar dwarfish form with skeleton leaves. *S. astilboïdes* is similar in appearance, but dwarfer and with looser trusses of blossoms. The variety *floribunda* is a great improvement on the type. *S. Filipendula* is a native species with dense tufts of finely-cut leaves which spread out on the surface of the ground making a beautiful green carpet. The white or rosy tinted blossoms are borne from June to August in panicles $1\frac{1}{2}$ to 2 feet high. The double-flowered variety (*flore pleno*) is particularly charming (Plate 22, fig. 60). *S. kantschatica* (or *gigantea*) is a magnificent perennial, 6 to 9 feet high, with large palmately-lobed leaves, and immense heads of white sweetly-scented flowers. The variety *elegans* is remarkable for its leaves being nearly a foot across and for its rose-coloured blossoms. *S. lobatu*, the Queen of the Prairie, is another tall-growing species from North America. The leaves are gracefully cut and lobed, while the deep rosy-carmine blossoms appear in dense clusters in June.

S. palmata, a charming Japanese Meadow Sweet,

1 to 2 feet high, with crimson stems and five to seven lobed leaves with sharply serrated margins. The brilliant crimson flowers are borne in large flattish clusters from June to August. The variety *alba* has more numerous white flowers, and is a dwarfer plant. *S. Ulmaria* is a native Meadow Sweet, 2 to 4 feet high, the pinnate leaves of which are whitish and downy beneath. The white blossoms are borne in branched trusses from June to August, and in the variety *flore pleno* they are double. There is a pretty form in which the leaves are variegated with green, white, and yellow. *S. venusta* grows 4 to 5 feet high, and has rosy flowers in June.

STACHYS grandiflora (*Betonica grandiflora*).—A hairy perennial about 1 foot high, with wrinkled ovate leaves, and beautiful reddish-violet blossoms in erect spikes from May to July. Increased by division.

STATICE latifolia.—This is the best of the hardy Sea Lavenders. It has large oblong-elliptic wavy leaves and immense numbers of pale lilac-blue flowers in large flattish clusters in July and August. The white-flowered variety *alba* is also a charming plant. Ordinary good garden soil will suit them, and they may be increased by division after flowering; or better still, pieces of the roots, about 2 inches long, may be covered with about an inch of sandy soil and placed in a cold frame any time during October, but not later.

SYMPHYANDRA Hoffmanni.—A rather pretty biennial, 1 to 1½ feet high, with lance-shaped sharply-toothed leaves, and large creamy-white tumbler-like blossoms, bearded within, drooping from the stems from July to September. It may be raised from



MARIGOLD (*CALENDULA OFFICINALIS*) (85)

LARGE CHINESE LANTERN (*PHYSALIS FRANCHETI*) (86)

SNAPDRAGON (*ANTIRRHINUM MAJUS*) (87)

seeds one year to flower the next. *S. pendula* is similar, with creamy-white flowers, and *S. armena* and *S. Wanneri* are kinds with blue flowers.

TAGETES (*French and African Marigold*).—Ornamental Mexican annuals of free growth and blossom. They flourish in ordinary good garden soil, and are easily raised from seeds sown in gentle heat in March or April. The African Marigold (*T. erecta*) grows about 2 feet high, and has pinnately-cut leaves with lance-shaped toothed segments. The flower-heads are of a beautiful soft yellow, and in the fine double varieties vary from pale lemon-yellow to orange. The French Marigold (*T. patula*), 1 to 2 feet high, has leaves more finely divided than those of the African variety. The blossoms are golden brown in the type, but in the garden forms the double-flowered varieties are striped and mottled with orange, yellow, and chestnut brown or purple. The Pigmy Marigold (*T. nana*) is a variety of the French. It grows only 6 inches high, and is a capital plant for edgings or borders. The Striped Mexican Marigold (*T. signata*) is very similar to the French one in habit, but it has much smaller golden-yellow flowers. The variety *pumila* is a bushy plant rarely more than a foot high, and covered with bright yellow blossoms.

TAMUS communis.—This is the “Black Bryony” of our copses and hedges. It is an ornamental climber of the Yam family, and has black ovoid fleshy rootstocks and angular climbing stems. The leaves are ovate heart-shaped, and the minute blossoms which appear in May and June are succeeded in autumn by oblong red berries about half an inch long,

flourishes in any ordinary garden soil in somewhat shaded positions, and may be increased by careful division of the rootstocks in spring, or from seeds.

TELLIMA grandiflora.—A hairy North American perennial of the Saxifrage family, 1 to 2 feet high, having lobed and toothed leaves beautifully veined and washed with bronzy-purple, this being the chief attraction of the plant. It flourishes in the border or rock garden in ordinary soil, and may be increased by division of the rootstocks in spring. *Tolmiea Menziesi*, a closely related plant, may be grown in the same way.

THLADIANTHA dubia.—A tuberous-rooted climber of the Cucumber family, with hairy heart-shaped ornamental leaves. An abundance of yellow blossoms appear in summer, but the bright red hairy fruits, which are about the size and shape of a hen's egg, are only borne on the female plants. Being a native of India and China, this climber is best grown against a south wall in the colder parts of the kingdom. It flourishes in ordinary good soil, and may be easily increased by division of the rootstocks in spring. Seeds may also be sown in heat in March.

THUNBERGIA alata.—A pretty half-hardy South African climber with heart-shaped sagittate leaves, and bell-shaped, buff-yellow, and deep purple flowers. The variety *alba* has white flowers; *aurantiaca* is orange; *sulphurea*, pale yellow; and *Doddsi*, pale orange and rich violet purple. The plants flourish in any good garden soil, and are useful for trellises, &c., during the summer months. Easily raised from seeds.

TIARELLA cordifolia (*Foam Flower*).—A pretty

little perennial, about 6 to 12 inches high, of the Saxifrage family. It has heart-shaped lobed and toothed leaves, and in April and May its small white starry blossoms appear in great profusion. It likes a partially shaded spot in the rock-garden or border, and flourishes in ordinary soil. Increased by division of the rootstock in spring or early autumn.

TRACHELIUM cœruleum (*Throatwort*). — An elegant bushy perennial of the Campanula family, 1 to 2 feet high, with ovate acute deeply-toothed leaves and trusses of violet-blue blossoms from June to August. The variety *album* has white flowers. The Throatwort likes rather a warm sheltered spot in the garden. It flourishes in sandy loam and leaf soil, and may be increased from seeds sown in autumn or spring; from cuttings of the young shoots in summer; and also from cuttings of the roots in spring.

TRADESCANTIA virginica.—A pretty American perennial, about 1½ feet high, with purple-veined leaves and deep violet-blue flowers in summer. It flourishes in ordinary garden soil, and may be increased by division. (Plate 18, fig. 54.)

TRILLIUM grandiflorum (*Wood Lily; Wake Robin*). —A charming tuberous-rooted North American perennial, 6 to 12 inches high, with rhomboid-ovate leaves and pure white flowers in May, as shown in Plate 3, fig. 7. There are other species, such as *T. cernuum*, with rather drooping white flowers; *T. erectum*, having dark purple strong-smelling blossoms, and its white flowered variety; *T. erythrocarpum*, white, striped with purple; and several others not so well-known.

The Wood Lilies like partially shaded spots in the

rock garden or flower border, and flourish in a deep and well-drained sandy peat and leaf soil. They are increased by careful division of the tuberous rootstocks in early autumn, and by seeds in spring.

TROLLIUS (*Globe Flower*).—These beautiful members of the Buttercup family like a rich loamy soil, and rather moist situations, such as near ponds, streams, &c. They will, however, also flourish in ordinary good soil in the flower border or rock garden, and are increased by careful division of the rootstocks in early autumn or in spring. The following are the best known kinds: *T. asiaticus*, 12 to 18 inches high, has divided leaves and deep yellow roundish blossoms with ten petals. There are several forms, including a fine one known as “Orange Globe,” the flowers of which are shown on Plate 4, fig. 9. *japonicus*, *Fortunei*, and *major*, are other good forms; and *albus* is a very pale yellow one. *T. europæus* is a native Globe Flower, 1 to 2 feet high, with roundish leaves, the five main segments of which are cut to wedge-shaped lobes. The pale or clear yellow flowers appear from June to August, and sometimes up to September. (Plate 4, fig. 8.) There are several other species of *Trollius* all with yellow or orange blossoms in early summer.

TROPÆOLUM (*Indian Cress*).—A showy group of climbing or trailing annuals or perennials belonging to the Geranium family. The best known annuals are: *T. majus*, with fleshy climbing stems, large roundish glaucous-green peltate leaves, and showy tubular and spurred flowers of rich scarlet, orange, crimson, or creamy-white, the two upper petals being

generally blotched with reddish or purple-brown. *T. minus* is very similar in foliage and blossom, but differs in being dwarf and somewhat bushy, while the flowers of yellow, crimson, scarlet, yellow, cream, &c., are also smaller than those of *T. majus*. Seeds of both kinds may be sown under glass in March, or in the open ground in April and May.

Another popular Tropæolum is the "Canary Creeper" variously known as *T. peregrinum*, *T. aduncum*, and *T. canariense*, the first name being the correct one. It has kidney-shaped leaves divided into 3 to 5 lobes, and produces its brilliant canary-yellow flowers, from June to October. *T. Lobbianum*, with leaves like *T. majus*, and long-spurred orange-yellow flowers spotted with scarlet, may be raised in the same way. There are many fine varieties of it, some having pure golden-yellow, scarlet, and deep crimson blossoms.

The perennial Tropæolums described here have more or less tuberous roots and climbing or prostrate stems. *T. pentaphyllum* has leaves cut into five oblong lobes, and has bright vermilion flowers. It likes warm sunny spots, and is best planted out each year about April or May in rich sandy soil; or if the tubers are left in the ground for the winter months, they should be protected from cold rains and hard frosts. *T. polyphyllum* has trailing stems 3 to 4 feet long, having glaucous leaves cut into about eight obovate lance-shaped segments. The bright yellow flowers—of which the two broader petals are spotted with red—appear in summer. The variety *Leichtlini* is chiefly recognised by its deep orange-yellow flowers. If possible the roots of this species should not be

disturbed for a few seasons. *T. speciosum* is a splendid climber with 6-lobed, almost peltate leaves, and beautiful scarlet flowers from June to October. The tubers may be planted in April or May in well-drained sandy loam, peat, and leaf soil. It grows best in partially shaded and moist situations. If good results are not secured the first season, it is better to leave the plants alone, and it is probable that the following year, when they have become well-established, they will display their beauty to full advantage. *T. tuberosum* has 5-lobed leaves, and scarlet and yellow blossoms. It should be grown in the same way as *T. pentaphyllum*.

THALICTRUM (*Meadow Rue*).—A large genus of perennial herbs belonging to the Buttercup family, and chiefly remarkable for their elegantly-cut foliage, which in some kinds (e.g., *T. minus* or *T. adiantifolium*) is as finely-divided as, and similar in appearance to, the fronds of a Maidenhair Fern. The blossoms are green, yellow, purplish or white, and are usually very small and numerous, the protruding thread-like stamens constituting their most conspicuous feature. The Meadow Rues flourish in any good garden soil, and give a graceful appearance to the rock garden or flower border. They are useful for cutting; the elegant foliage going well with flowers in vases, &c. The plants may be readily increased by division of the rootstocks in spring, and seeds. The most useful kinds are *alpinum*, 6 inches high, likes moist or boggy soil; *anemonoides*, 6 inches; *angustifolium*, 3 to 4 feet; *aquilegifolium*, 1 to 3 feet, with several varieties; *Chelidoni*, 6 inches; *Delavayi*, 2 to 4 feet; *flavum*, 2 to 4 feet; *fœtidum*, 1 foot; *glaucum*, 2 to 5 feet;



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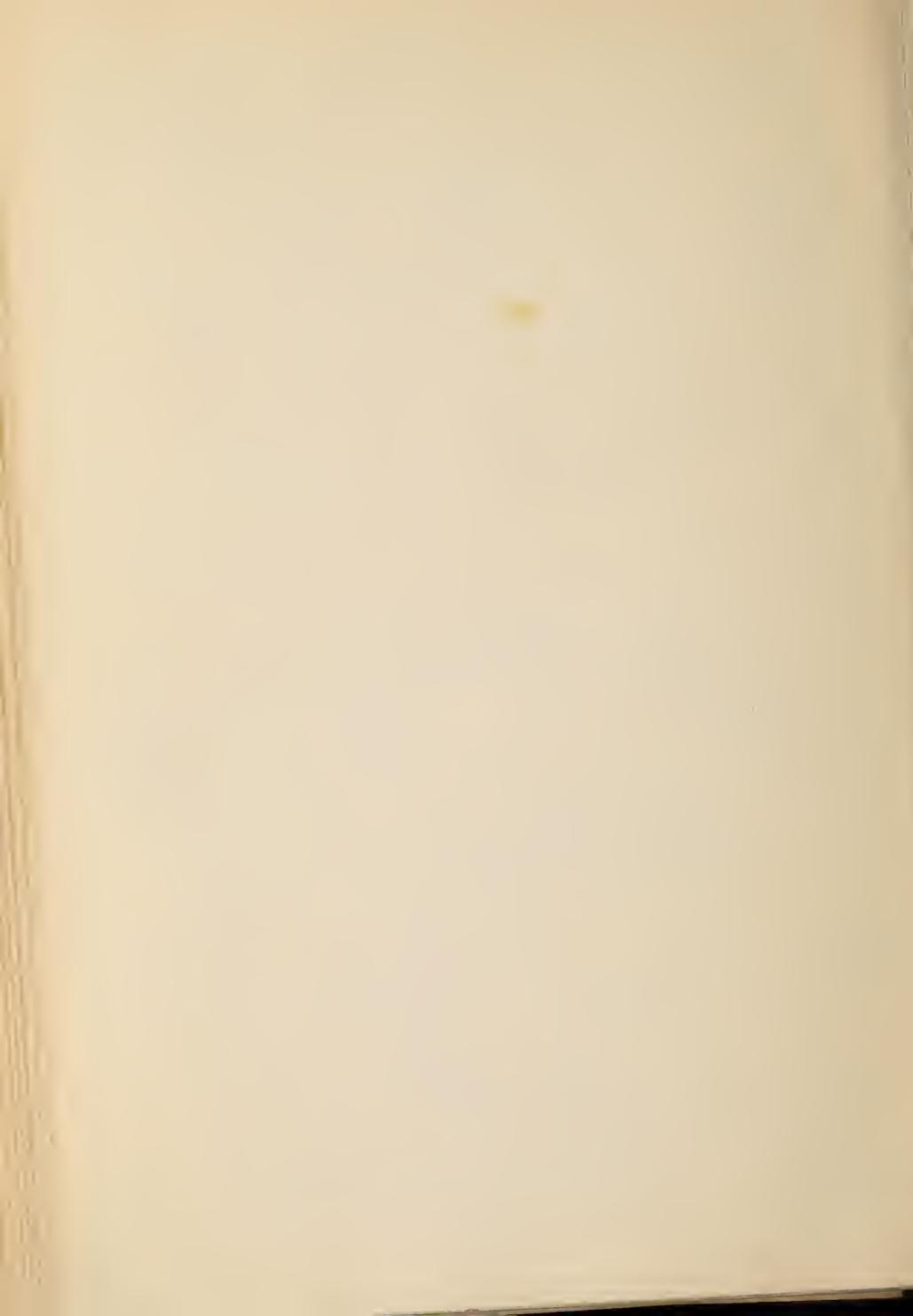
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89

MICHAELMAS DAISIES (*ASTER LINARIFOLIUS*) (88)

ASTER AMELLUS (89)

DAY LILY (*HEMEROCALLIS AURANTIACA*) (90)



minus, 1 to 4 feet with maiden-hair-like leaves; *petaloidum*, 1½ feet; and *rhynchocarpum*, 3 feet.

UVULARIA grandiflora.—A rather pretty and distinct North American perennial of the Lily family. It grows 1 to 2 feet high, and has a thickish creeping rootstock, smooth oblong leaves through which the stems appear to pass near the base, and drooping pale yellow bell-shaped flowers in April and May. Other species are *perfoliata* and *sessilifolia*. They all like sandy peat and loam in shaded places, and may be increased by division of the rootstocks.

VALERIANA (*Valerian*).—There are about 150 species, but only a few are of garden value. They grow in any good soil, and are useful for the rougher parts such as old banks, ruins, or rockeries. They are easily raised from seeds, and may also be divided in spring. *V. montana*, from the Alps, is only about 6 inches high. It has oblong or lance-shaped leaves, and from April to June has flattish clusters of beautiful soft rosy-pink blossoms. *V. officinalis*—the Cat Valerian or All Heal—is a native plant, flourishing in damp situations. It is about 3 feet high with glaucous pinnately-cut leaves and clusters of pale pink or white flowers from June to August. *V. Phu* has hollow stems 2 to 4 feet high, and glaucous leaves, the lower ones being entire, the upper ones cut. The white flowers appear from June to August.

VENIDIUM calendulaceum.—A showy South African composite, 6 to 12 inches high, with Dandelion-like leaves having a silvery white under surface. The bright golden-yellow flowers, with a brown or blackish centre, appear from July to October, and are

very much like those of the common Marigold in appearance. Although really a perennial, plants are usually raised every year from seeds about March.

VERATRUM (*False Hellebore*).—Distinct perennials of the Lily family, having bold and ornamental leaves regularly folded or plaited. They flourish in a mixture of rich sandy loam, peat, and leaf soil, in partially shaded situations. They may be increased by dividing the thickish and creeping rootstocks about September, care being taken to wash the hands well afterwards as the rootstocks are poisonous. *V. album* is a fine species, about 3 to 5 feet high, with large broadly-oval plaited leaves, 1 foot or more long. The white and greenish blossoms appear in July on dense panicles 1 to 2 feet long. In the varieties *Lobelianum* and *viride* (*Helonius viride*) the flowers are all greenish. *V. nigrum* grows 2 to 3 feet high, having oblong plaited leaves and racemes, 1 to 3 feet long, of blackish-purple flowers. *V. Maacki* is about 2 feet high with lance-shaped leaves about 6 inches long, and loose panicles of dark purple flowers.

VERBASCUM (*Mullein*).—Strong-growing ornamental plants of the Foxglove family. *V. Chaixi* grows 3 to 10 feet high, having Nettle-like leaves, woolly on the under surface, and tall, erect racemes of yellow blossoms with purple stamens. *V. nigrum*, 2 to 3 feet high, has leaves more or less ovate oblong in outline, and yellow flowers, except in the variety *album* in which they are white. *V. olympicum* often attains a height of 10 feet, and has broad lance-shaped woolly leaves, and bright golden flowers. *V. phlomoides*, 3 to 9 feet high with oblong deeply-cut leaves, and

V. pyramidatum, 3 feet or more high, have also yellow blossoms. *V. phæniceum*, however, has flowers which vary in colour from white to violet, lilac, rose, purple, red, and copper. It grows about 3 feet high, and has ovate oblong leaves with crenate margins. Increased by seeds or division.

VERONICA.—The shrubby kinds having already been mentioned in the volume on “BEAUTIFUL FLOWERING TREES AND SHRUBS,” only a few of the best herbaceous kinds deserve notice here. *V. gentianoides* grows 6 to 12 inches high, having obovate or oblong Gentian-like leaves and erect spikes of rather large greyish blue flowers in May and June. There is also a white flowered variety and one with variegated leaves. *V. saxatilis* is a pretty Scottish tufted plant about 6 inches high, having leathery leaves and clusters of bright blue blossoms from July to September. *V. spicata* is a native plant, 1 to 1½ feet high, with oblong lance-shaped leaves toothed on the margins. The bright blue flowers with long purple stamens are borne in dense erect spikes in July and August. The white flowered variety *alba*, is very handsome. *V. longifolia* grows 2 to 4 feet high and is closely related to *V. spicata*, and is indeed often confused with it. Its flowers vary in colour, being lilac, rose, or purple, or white, and borne in dense erect racemes. In the variety *subsessilis*, they are deep purple blue. The form in which the leaves are variegated with creamy-white or yellow is a dwarfer plant, but is worth growing for its bushy habit and ornamental appearance. *V. prostrata* forms a beautiful green carpet with bright blue flowers.

The kinds mentioned above flourish in ordinary

good garden soil, and are increased easily by division of the tufts in spring, or by cuttings.

VIOLA (*Violet, Pansy, Heartsease*).—Very few of the hardy species of *Viola*—of which there are 100 to 200—are cultivated in gardens now-a-days. It may be well to mention a few of the best natural species, as there are still many plant-lovers who prefer the wild types. The Dog Violet (*V. canina*) with blue, lilac, grey or white flowers from April to August; *V. cornuta*, with pale blue long-spurred flowers from May to July; *V. cucullata*, with deep or pale violet-blue or purple blossoms; *V. pedata*, the Bird's Foot Violet, with bright blue or white flowers; the Wood Violet, *V. sylvestris*, a native of our copses and woods, with bluish-purple or lilac flowers; and the Wild Heartsease or Pansy—*V. tricolor*—which bears its purple, white, or golden-yellow flowers from May to September, are a few kinds for shady banks and dells in large gardens.

The Sweet Violet (*V. odorata*) is a British plant found in copses and grassy banks. It has blue, white, or reddish-purple blossoms from March to May. Many charming and sweet-scented varieties have been developed from it, the most important being:—The “Neapolitan” or “Parma” Violet (*pallida plena*) with fragrant double pale lavender flowers; the “Czar,” large single blue or white flowers; “Marie Louise,” lavender-blue and white, very large and sweet-scented; “Admiral Avellon,” reddish-purple; “St. Helena,” clear blue; and several others, like “La France,” “California,” “Luxonne,” “Compte de Brazza,” all charming varieties.

In the open air Sweet Violets may be grown with fair success in rich and moist sandy loam and leaf soil, in situations facing north or west, but not due south. The great point is to keep them cool and moist during hot dry summers, otherwise they will be destroyed by green fly or red spider, or both. The plants should be sprinkled in the morning and evening to keep the foliage clean, and to refresh it generally.

To secure a supply of Sweet Violets during the winter months the plants should be carefully lifted about the middle or end of September, and transferred to cold frames or old hot-beds. A rich compost of sandy loam, leaf soil, and well-decayed manure should be ready for their reception. The roots should be disturbed as little as possible, the plants afterwards being well watered. For a week or ten days the frames may be kept close until the plants become established, after which plenty of air and light should be given on all favourable occasions.

When it is desired to increase Sweet Violets, the old tufts may be divided when the flowering season is over, and planted in rich moist soil in a shaded and sheltered spot. Cuttings of the basal shoots may also be rooted in frames during the summer.

The Pansy and Heartsease (*V. tricolor*) have been developed into three distinct groups, viz. :—(i) the English or show varieties which are either white grounds, yellow grounds, or selfs; (ii) the Belgian or Fancy Varieties, usually large and richly coloured flowers; and (iii) Tufted Pansies or Violas, which have been evolved from *V. cornuta*, *V. lutea*, *V. amœna*, and *V. striata* and various forms of the English and

Belgian varieties. The Pansies of all sections are charming plants, remarkable for the richness of their colours, and their close compact habit.

They flourish in a rich loamy soil, and may be used in beds by themselves, or as a carpet beneath taller plants. The self-coloured kinds of Tufted Pansy are exceedingly popular for treatment in this way. Unless choice varieties are to be kept pure and true to name, plants are easily raised from seeds. These may be sown in shallow drills in the open ground in finely prepared soil about June or July, and by the end of September the young plants will be large enough to transplant into the positions in which they are to blossom the following year. Named varieties may have cuttings of the basal shoots taken off during the summer months and inserted in a shady border. They will soon root in sandy soil, and may be transplanted during September. (See Plate 6, figs. 20-22.)

ZINNIA elegans.—A showy hairy-stemmed annual, 1 to 2 feet high, with ovate heart-shaped stem-clasping leaves, and flowers varying in colour from scarlet to crimson, rose, buff, salmon, or white. In addition to the numerous tall varieties, there is a dwarfer group of “Pompons” which grow about 6 to 9 inches high, and have flowers of various colours. *Z. Haageana* is similar in habit to *Z. elegans*, but has smaller bright orange or yellow flower-heads. The forms of both species are easily raised from seeds sown in gentle heat in March, the young plants being put in the open ground at the end of May or in June.



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