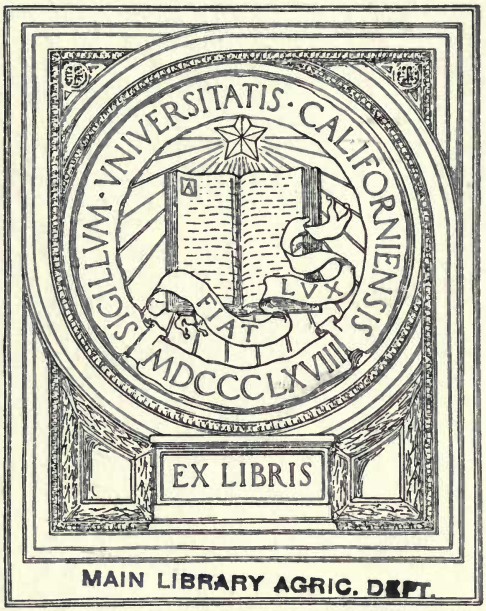
BULBS
AND THEIR CULTIVATION



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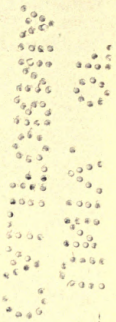

LILIUM MONADELPHUM SZOVITZIANUM.

A handsome border lily. Grows 4 ft. high, and flowers in July. Colour: yellow, spotted with black. Native of the Caucasus.

BULBS

And their Cultivation.

A Practical Treatise on the Cultivation and Propagation of Window and Indoor Bulbous and Tuberous-Rooted Plants, adapted for Outdoor, Greenhouse, and Room Decoration, :: with Lists of Species and Varieties. ::

BY

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CONTENTS.

FOREWORDS.

Among the great wealth of vegetation at the command of man for decorating his garden and greenhouse few plants possess greater attractiveness, charm, or beauty than those that belong to the bulbous and tuberous-rooted section of the vegetable kingdom. Many of them have graced our gardens for centuries, been idolised and almost worshipped by our forbears, and in more recent times held in the highest esteem by flower lovers of every degree and in every station of life. Owners of princely demesnes have of late years adopted the commendable and artistic fashion of growing hardy kinds by the thousand in meads and woodlands; those of suburban and town gardens have also taken a supreme delight in cultivating them in beds, borders, and greenhouses; and others, again, who lacked the luxury of a garden, have shown an interest in these beautiful flowers by growing them on the window-sill, the balcony, roof garden, and in the home. Still more interesting is the fact of children being encouraged to cultivate bulbs in pots, glasses, and bowls as a means of inculcating a love of nature, finding them a pleasant occupation for leisure moments, and developing the natural instincts of love, work, and delight within the minds of the young. A praiseworthy example

of this phase of gardening has been set by the educational authorities of Sheffield, who every year distribute many thousands of bulbs to children to grow, and afterwards exhibit for prizes at an annual show.

In all ages bulbs and bulb culture seem to have been held in popular esteem. Even the barbarous Turk in bygone days excelled in the culture of the Tulip and Ranunculus, and regarded the plants as priceless treasures. The Greeks and the Romans, moreover, delighted in growing lilies and hyacinths; and, in later days, history shows that the Flemish and Dutch indulged in the cultivation and admiration of a host of bulbous and tuberous-rooted plants. In Holland and in France, indeed, the rage for rearing and cultivating tulips was carried on to such a degree that it developed into a mania. History affirms that in the seventeenth century the craze for these bulbs was so great that as large a sum as £10,000,000 sterling was received in Haarlem and district for new or rare tulips. For a single bulb of a variety named Semper Augustus the price of 4,600 florins, together with a new carriage, harness, etc., was paid. In other instances a single bulb was sold for twelve acres of land, and another for securities of the value of £5,000. Failing to secure the price asked from any one person, lotteries were arranged, and bulbs disposed of in that way. The result was, as in the modern instance of the potato boom, wealthy folk who gambled in so wild a speculation were reduced to absolute beggary, and the Government compelled to suppress the mania. Fortunately, in England no such craze has arisen. Lovers of daffodils, however, who are possessed of wealth do not hesitate to pay high prices for novelties, especially the newer varieties of narcissi.

One of the great charms of bulbous and tuberous-rooted plants is the fact of their flowering mainly at a period of

the year when there is a paucity of other flowering plants. As Thomson has so happily expressed in verse:

> "Fair-handed Spring unbosoms ev'ry grace,
> Throws out the Snowdrop, and the Crocus first;
> The Daisy, Primrose, Violet darkly blue,
> And Polyanthus of unnumbered dyes;
> The yellow Wallflower, stained with iron brown;
> And lavish Stock that scents the garden round;
> From the soft wings of vernal breezes shed,
> Anemones; Auriculas enriched
> With shining meal o'er all their velvet leaves;
> And full Ranunculus, of glowing red.
> Then comes the Tulip race, where Beauty plays
> Her idle freaks; from family diffused
> To family, as flies the father dust,
> The varied colours run; and while they break
> On the charmed eye, th' exulting florist marks,
> With secret pride, the wonders of his hand.
> No gradual bloom is wanting; from the bud,
> First-born of Spring, to Summer's musky wiles:
> Nor Hyacinths, of purest virgin white,
> Low-bent, and blushing inward: nor Jonquils,
> Of potent fragrance; nor Narcissus fair,
> As o'er the fabled fountain hanging still;
> Nor broad Carnations, nor gay spotted Pinks;
> Nor showered from ev'ry bush, the Damask rose.
> Infinite numbers, delicacies, smells,
> With hues on hues expression cannot paint,
> The breath of Nature, and her endless bloom."

And not only in spring, but in dreary autumn and wintry days, to say nothing of summer, we have in the great family of bulbs and tubers precious blossom to add colour and gaiety to our gardens, window-sills, etc. In winter, for example, the hardy cyclamens, winter aconites, snowdrops, and some of the irises grace the rockery or the lawn with chaste and simple beauty. In spring the gay crocus, squill, narcissi, star-flower, Glory of the Snow, many irises, tulips, hyacinth, bluebell, anemone, dog's-tooth violet and grape hyacinth are a few of the many beautiful bulbs and flowers that will flood the mead, woodland, and garden with a plethora of precious richly-coloured blossom. And what shall we say of summer days, when lilies galore, Spanish and English irises, early

gladioli, ixias, sparaxis, and a host of other beautiful kinds, including the stately Eremuri, shed their floral refulgence on the garden and fill the air with dreamy fragrance? And when russety autumn arrives there are the meadow saffrons, the autumn crocuses and cyclamen, the gorgeous gladioli, and so on, to vie with the richness of the dying autumnal tints.

As in our gardens, so in our greenhouses, we have a wealth of really beautiful subjects to cheer us in autumn, winter, and spring; indeed, if it were not for the great variety of bulbs, and the easiness with which they lend themselves to being forced into flower, our greenhouses and hot-houses would not be the bright and cheerful spots they are in autumn and winter days.

Bulbs, indeed, are indispensable members of the vegetable kingdom, and it is well that we have not only a large number of genera and species, but also, thanks to home and Dutch growers, such a wonderful number of pretty varieties to suit all conditions of growth and all tastes as regards form and colour. In the gladioli, narcissi, and cottage or May-flowering tulip families we have, indeed, a glorious wealth of colour, mostly the product of enterprising growers in England and Ireland. It is a great satisfaction to know that these families of plants can be grown with such signal success commercially in our own country, and that we have not to depend entirely on foreign supplies for them.

The Cottage or May-flowering tulips are bulbs of such exquisite loveliness that they deserve a place in every garden. They come into flower in May and June, and help to form a connecting link between the ordinary spring-flowering and the summer-blooming bulbs. We cannot too strongly impress upon our readers the inestimable value of these tulips for massing in the borders or naturalising in grass, and everyone should make a point of growing some, at least, of the varieties and species named elsewhere. We might also speak in equally glow-

ing terms of praise about the glories of the many precious types and varieties of the Narcissi family.

Lastly, we would strongly counsel the reader to study the tabulated list of hardy bulbs, and note the many kinds there advised for culture on rockeries. If it stimulates him to grow them, and to carpet the surface with lowly alpine plants, he will indeed derive great pleasure from the pursuit. And, above all, if the reader will only cultivate hardy bulbs in his cold house he will derive far greater satisfaction from them than from ordinary plants, and add immensely to the pleasure and profit of that most ancient and inspiring of all pursuits —the art and craft of gardening.

In issuing a second edition of this work the Author has taken advantage of the opportunity to revise the text, add new illustrations, and bring the tabulated lists and selections up to date. The work has thus been made as replete as is possible for its size and price on the subject of bulb culture in the garden, greenhouse, and the home.

T. W. S.

1913.

Bulbs and their Cultivation.

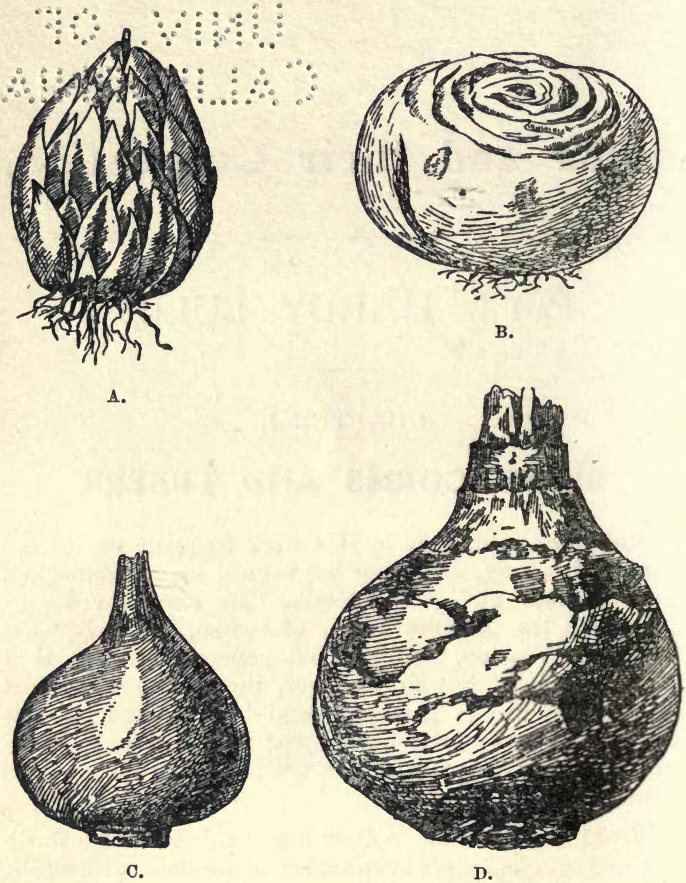
Part I.—HARDY BULBS.

CHAPTER I.

BULBS, CORMS AND TUBERS.

In the various chapters in this work frequent use of the terms bulb, corm, and tuber has been made in connection with cultural and other details. The experienced gardener and the botanist know, of course, precisely what these terms mean, and to what genera of plants they strictly apply. Not so, however, those who have had little experience of gardening and botany, and, as this work is primarily intended for the latter class, it is desirable that we should give a brief explanation of each term.

What is a Bulb?—A bulb may be defined as a modified underground stem surrounded at its base with fleshy scales rolled round each other, as in the case of the hyacinth, or overlapping, as in a lily bulb. The scales are really modified leaves, and their office is to hold food in

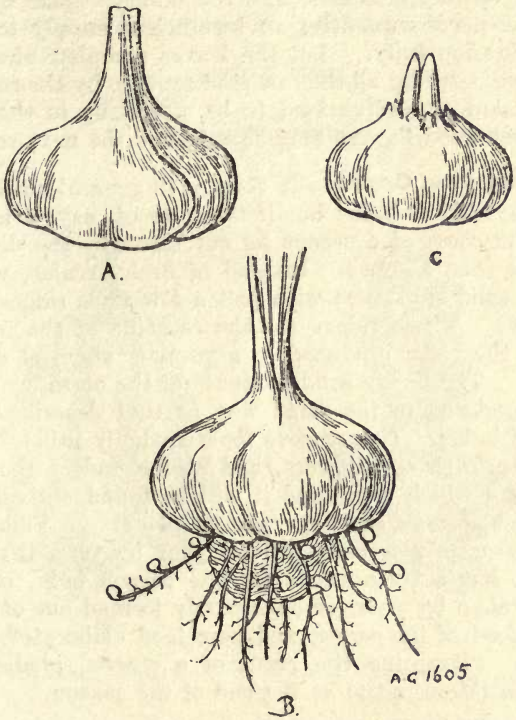


A. B. C. D.

TYPES OF BULBS.

A, Lily bulb, showing overlapping scales. B, Scilla bulb, showing scales rolled round each other. C, Tulip bulb, with smooth scales. D. Narcissus bulb, with rough rolled scales.

reserve for supporting the embryo stem and flowers within until new roots form to collect additional food to meet the requirements of the new growing stem. Thus the fleshy



TYPES OF CORMS.

A, Corm of a Gladiolus. B, Corm of a Gladiolus after a season's growth. Below is the base of the old exhausted corm with new corms on top. The small nodules on the roots are "cormlets" or "spawn" which may be grown on to make flowering corms. C, Crocus corm.

scales are storehouses of food collected by the roots and elaborated by the leaves, and sent down by them the pre-

vious year in readiness for the new stems to draw upon the next season. It naturally follows, therefore, that if the leaves are removed from the bulbs before they have turned quite yellow and withered, less reserve food is stored up in the scales, and the embryo spike or flower stem has, consequently, an insufficient supply to enable it to develop fully. Let the leaves complete their work of manufacturing all the raw food sent up by the roots into elaborated or reserve food to be stored up in the scales, and then good flowers may be expected the next year.

What is a Corm?—A corm is in general outward appearance like a bulb; but if the bulb of, say, a hyacinth and the corm of a crocus be cut through, the difference will be seen at once. Instead of fleshy scales, we shall find a solid substance with just a few faint ridges on the outside. These ridges are the remains of the few thin scales the corm produced in a younger stage of development. The fleshy solid contents of the corm are reserve food prepared in the same way as that described in the case of bulbs. This reserve food is wholly utilised by the young growth and flowers, and at the end of the season the corm which contained it will be found shrivelled up, and new corms formed to take its place. A bulb practically goes on increasing in size year by year, if properly grown, but a corm exists for one season only, its place being taken by younger ones partly formed out of the reserve food of its parent and new food elaborated by the leaves. Examine the corm of a crocus, gladiolus, or Tritonia (Montbretia) at the end of the season.

What is a Tuber?—A tuber is a swollen underground stem, which may simply be an enlargement of a portion of a root, as in the case of Tropæolum tuberosum, and of one season's duration only; or an individual growth of perennial duration, as in the case of the Winter Aconite, Gloxinia, and Tuberous-rooted Begonia. It has almost invisible leaf-scales upon its outer surface, and a solid

body within composed of reserve food for supporting future growth. In the case of the Tropæolum, as in that of the Potato, the old tuber gives up all its reserve food to the new growth, and eventually perishes; but in the case of the Gloxinia it only supplies a portion of the food, and has the power of absorbing additional food each year, and

A.

B.

C.

TYPES OF TUBERS.

A, Tuber of Erythronium dens-canis. B, Tubers of Alströmeria. C, Tuber of an Anemone.

thereby increasing in size. Tubers vary a great deal in size and shape, according to the size of the plant.

In all cases the primary object of a bulb, corm, or tuber is to store up reserve food, and they may be considered in this respect as analogous to seeds, a means of ensuring the perpetuation of the species. Under the action of sunlight the sap absorbed by the roots is, by the

aid of chlorophyll in the leaves, converted from a crude state into special food, which is conducted down in due course to the bulb scales and the reservoirs of corm and tuber, to await the requirements of new growth in spring.

CHAPTER II.

SOILS AND MANURES.

The majority of hardy bulbous and tuberous-rooted plants will do very well in good ordinary soil, as a reference to the list of genera and species on page 53 will show. A few, however, require special composts, such as peat, leaf-mould, etc. As to manures, bulbs do not appreciate these to the same extent as other hardy plants, a little sufficing to meet their requirements. Most of them like a rich soil, it is true, but if manures are added they must not be of a rank description, nor be placed in close contact with the bulbs.

Soil.—This should be deeply dug, in order to ensure free drainage and absence of stagnant water. Heavy soils should be liberally dressed with grit and leaf-mould, in addition to well-rotted manure. The earlier the soil can be dug and got ready before planting the better. The old florists used to pay a good deal of attention to this matter, and the modern ones would be well advised also to do so. Bulbs generally do best in a sandy loam. The secret of the bulb industry in Holland is due entirely to the sandy soil and the judicious use of cow manure. Those, therefore, who possess a sandy soil may hope to grow bulbs

well. But heavy soils, if treated as above advised, will do equally well for bulb growing in gardens. The best form of leaf-mould is that obtained from an oak coppice. Ordinary leaf-mould made from elm, lime, sycamore, and poplar leaves is not so good, because it is apt to introduce fungi to the soil. The peat, too, should not be too light, spongy, fibry, or boggy in nature, but of a medium texture, and the best sand to use is the coarse silver sand. Cocoanut-fibre refuse also comes in handy for mulching the surface after planting.

Manures.—For light soils decayed cow manure is best, and for heavy ones well-rotted horse manure is the most suitable. Both should be buried six inches for small bulbs and a foot below the surface for the large ones. When the bulbs are in full growth their roots will then easily reach the manure and benefit by it. When the manure is near the surface the roots cannot derive any benefit from it; moreover, if it should happen to touch the bulbs it invariably subjects them to disease. Artificial manures are very beneficial to bulbs if judiciously applied. On the heavier soils apply basic slag at the rate of 4oz. per square yard, and kainit at the rate of 1oz. per square yard. On light soils superphosphate should be used instead of basic slag, at the rate of 1½oz. per square yard, and kainit at the same rate as advised for a heavy soil. In both cases apply in autumn, when preparing the soil. Bone-meal is also a good artificial manure for a heavy soil, and should be used at the same rate as advised for slag. For a spring dressing, in default of an autumn application, apply 1½oz. of superphosphate and ½oz. of sulphate of potash per square yard, forking it in. A good all-round fertiliser for permanent and temporary bulbs is the following: Mix together one part by weight of kainit, two parts of mineral phosphate, half a part of nitrate of soda, and a quarter part of sulphate of iron. Apply one ounce of this mixture to every square foot of soil occupied

by the bulbs, or a quarter-ounce to each six-inch pot when the bulbs have begun to show their flower-stems. Outdoor bulbs, especially those of a permanent nature, ought also to be liberally mulched with rotten manure in early spring to keep the soil cool and prevent evaporation of moisture.

CHAPTER III.

LIFTING AND STORING BULBS.

Some bulbous and tuberous-rooted plants succeed best if lifted, dried, stored, and replanted in autumn or spring. Others, again, merely require to be lifted in autumn and replanted at once; while the majority may be grown in the ground all the year and only lifted and replanted every few years. Although this subject has been briefly referred to in some of the chapters dealing with outdoor bulbs, it will be more helpful to the reader if we deal with it more fully and specifically here.

The Object of Lifting is a threefold one. First of all, it enables certain bulbs which do not ripen satisfactorily in the soil to be well ripened by exposure to the air and storage in a dry atmosphere. Secondly, it enables the site they occupy to be planted with other plants for a portion of the year; and, thirdly, it affords an opportunity of seperating the mature flowering-sized bulbs from the non-flowering offsets, and so make sure of having colonies of bulbs uniform in the number and quality of their flowers.

Bulbs Requiring to be Annually Lifted.—Those that need to be lifted, dried, stored, and replanted

annually are: Hyacinths, Darwin, Parrot, and ordinary bedding tulips; babianas, calochorti; bedding crocuses only, gladioli, ixias, Milla biflora, anemones, tuberous-rooted begonias, ranunculi, sparaxi, Tropæolum tuberosum, and tigridias. The hyacinths, tulips, and crocuses should either remain in their flowering positions until the foliage has turned yellow and withered; or, if their site be required for summer plants, be lifted and replanted at once in a reserve bed till growth is completed. The ixias, babianas, calochorti, millas, and sparaxi must be permitted to remain in the soil until they have lost their foliage. The same remarks apply to the anemones and ranunculi. The gladioli and tigridias should be lifted at the end of October. All, except the two last, should be divested of dead foliage, loose scales, and dead roots, and stored in shallow boxes in a cool, airy shed to get quite dry, when store in any cool place till planting time. The gladioli and tigridias should be tied in small bunches, and hung up in an airy shed till quite dry; then be cleared of dead foliage and offsets. Store the tigridias and tropæolum tubers in dry silver sand, and the gladioli in shallow boxes in a cool frost-proof place. Tuberous-rooted begonias should be lifted in September, placed close together in shallow boxes in a greenhouse till the leaves wither; then have the stems and leaves twisted off and the tubers stored in fibre refuse in a heated greenhouse. Anemones and ranunculi should be placed thinly in boxes in a cool shed, and, when quite dry, be divested of dead foliage and then stored in boxes in a cool, dry place. Narcissi used for bedding may be treated like hyacinths.

Bulbs Requiring Annual Lifting and Replanting.—The only kinds needing to be lifted and replanted annually are the crocosmias and the tritonias or montbretias. The corms have a tendency to push themselves to the top of the soil, and hence are best replanted each November.

Bulbs Requiring Periodical Lifting.—All the narcissi grown in borders are best lifted every third or fourth year. If left longer the bulbs are apt to flower sparsely, owing to soil exhaustion and overcrowding by offsets. The bulbs should be lifted in July, when the leaves have quite faded, then be placed in shallow boxes in a cool place till quite dry. Afterwards divest them of dead foliage and offsets, and store in boxes as advised for other bulbs till replanting time. Other genera requiring similar treatment are alliums, brevoortias, brodiæas, bulbocodiums, camassias, chionodoxas, colchicums, crocus species, fritillarias, snowdrops, galtonias, hyacinthuses, irises, leucojums, ornithogalums, puschkinias, scillas, and sternbergias. Lilies do not require lifting and transplanting so long as they are doing well. In case lifting is necessary, the bulbs of candidum are best lifted and replanted directly after flowering, and the remaining species in November. A golden rule to observe in the case of all bulbs that only need periodical relifting is not to do it oftener than necessary. So long as they grow and flower well leave them alone.

A Special Note.—In the case of bulbs naturalised in turf, or in mixed borders, there is no necessity to lift them unless they show signs of deterioration.

CHAPTER IV.

BULBS IN BEDS AND BORDERS.

Bulbs, especially those that flower in spring, are popular subjects for bed and border culture in gardens of all dimensions. Hyacinths and tulips are particularly well adapted for growing in formal lines or rows, beds, and borders. In

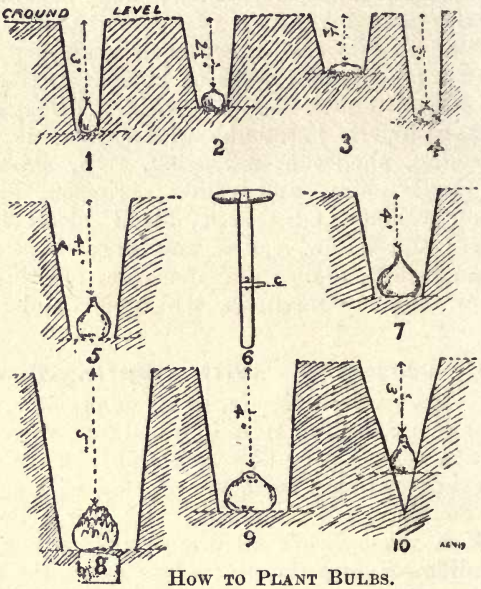
borders of more ample scope quite a wealth of beautiful spring, summer, and autumn-flowering bulbs may, however, be grown in a less formal fashion, in groups or masses, in conjunction with other hardy plants, and this is really the most effective way of growing them.

I. CULTURE IN BEDS.

Colour Schemes.—When grown in beds the reader has the choice of growing a number of kinds, arranged in rows or circles according to height; or, as in the case of a group of beds, of devoting a bed to each kind. In either event a good effect can only be ensured by planting the bulbs according to a properly-defined colour scheme. Beds planted with mixed varieties of hyacinths or tulips are an exception to this rule, since their colours will blend harmoniously; but, where rows or lines of distinct colour are used, then attention should be paid to arranging those colours that properly harmonise with each other. Generally speaking, shades of red, pink, rose, salmon, and scarlet; purple, lilac, and yellow; crimson, blue, and white; and yellow and orange, blend nicely together; whereas red and yellow, yellow and blue, violet and red, scarlet and yellow, orange and magenta, or crimson and orange are offensive mixtures, which should be strictly avoided.

Bulbs Carpeted with Spring-flowering Plants.—The modern plan is, as far as possible, to plant one colour of hyacinth or tulip in a bed, and to carpet the surface with some spring-flowering plant. Thus a bed of crimson tulips or blue hyacinths carpeted with the white-flowered double arabis or a white viola; or yellow daffodils with a groundwork of orange polyanthus, Purple Queen wallflower, or aubrietia; white hyacinths or tulips with blue forget-me-nots or blue viola; scarlet tulips or hyacinths with pink Silene pendula compacta; or salmon

hyacinths with double-red daisies, are effective combinations. In mixed arrangements it is advisable to have mixed crocuses for an edging, followed by a band of mixed tulips, and mixed hyacinths in the centre. Large beds might be planted with mixed crocuses or snowdrops and scillas as an edging, followed by the following colours in their order of names, viz., white, pink, rose, crimson, and scarlet. The advantage of carpeting the beds with plants is first of all covering the bare soil, and, secondly, providing a succession of colour up to June, as the plants usually continue to flower after the bulbs have ceased to do so. Care, too, should be taken to plant those varieties of bulbs together that naturally flower at the same period. Seedsmen will, if requested, make the proper selection to flower



How to Plant Bulbs.

1, Snowdrop. 2, Crocus. 3, Anemone. 4, Scilla. 5, Narcissus. 6. "Dibber" for planting bulbs. 6c, Adjustable slide to "dibber." 7, Tulip. 8, Lilium. 9, Hyacinth. 10, Wrong way to plant bulbs.

[*Photo: J. Tyler.*

TULIPS NATURALISED ON A GRASSY BANK.

The variety portrayed is Rose Grisdelin, a delicate and white tinted early-flowering single tulip. Equally well suited for beds.

A CHARMING COMBINATION OF HYACINTHS, TULIPS, AND VIOLAS.

at the same period. It must, of course, be understood that such bulbs as snowdrops, scillas, and crocuses usually flower in advance of tulips, hyacinths, and daffodils.

Time to Plant.—The precise season or period to plant each kind of bulb is described in the table published further on in this work.

Soil and Planting.—The next point for consideration is the preparation of the soil and the planting. To grow tulips and hyacinths well, the beds should be dug two spits deep in early October, and have about three inches of well-rotted manure placed a foot below the surface. On no account mix manure with the upper layer of soil, as bulbs dislike to have manure in direct contact with them. If the soil be heavy, old potting mould, sand, and leaf-mould may be freely mixed with the surface mould. Bulbs, like hyacinths, tulips, and narcissi, should be planted with their base four inches from the surface and six inches apart. Those of smaller size, like the crocus, should not be planted deeper than three inches, and the same distance apart. Bulbs like chionodoxas should be put in about three inches deep and an inch or so apart. Use a flat-bottomed dibber for making the holes, so that the base of the bulb rests directly on the soil. We prefer to use a trowel for the large bulbs, and to simply press the smaller ones in with our fingers. It is a good plan in the case of choice tulips, narcissi, and hyacinths to put a pinch of silver sand in each hole for the bulb to rest on. After planting, mulch the surface of the bed with fibre refuse to keep it neat and as a protection to the bulbs. When hardy plants are grown as a carpeting to the bulbs it is advisable to plant the latter eight to ten inches apart, and to put one of the plants before described between each pair of bulbs. The plants should be put in at the same time as the bulbs. In spring, when the growth is above the soil, lightly loosen it with a hoe or fork. Staking is rarely necessary, except in exposed positions, and then it should be done soon after the spikes show.

Lifting Bulbs, etc.—After flowering, the bulbs should be carefully lifted and replanted in reserve beds to complete their growth, after which again lift, dry, and store away, as advised in the chapter on Lifting and Storing elsewhere. The polyanthus and double daisies must also be lifted, divided, and replanted in a shady border to make strong growths for autumn planting. Cuttings should also be taken of the double arabis and aubrietias, to ensure a fresh supply of plants, while the violas may be replanted elsewhere to furnish cuttings for rooting in August and September. The forget-me-nots, wallflowers, and the silenes are best reared annually from seed in July.

II. CULTURE IN BORDERS.

Soil and Position.—In small gardens, where the borders do not exceed three feet wide, the bulbs may be grown in rows; say, a row of crocuses as an edging, followed by rows behind of tulips, hyacinths, and daffodils; they may be planted in groups of three, six, or a dozen bulbs. In large gardens, where the borders are six or more feet wide, and contain hardy perennials, the bulbs are best grown in bold groups between the hardy plants. Thus lilies may be grown in groups of not less than three bulbs up to six or twelve bulbs; hyacinths, tulips, narcissi, gladioli, crocosmia, anemones, tritonias, English and Spanish irises in groups of a dozen or more bulbs; and smaller bulbs, like crocuses, snowdrops, muscaris, scillas, chionodoxas, Allium moly, ranunculi, etc., in patches of fifty or a hundred bulbs. Crown Imperial lilies should also be grown in groups of three or six bulbs to look well. Bulbs, corms, etc., always look more effective when boldly massed than when grown in small groups. Small or low-growing bulbs may be carpeted with violas, double arabis, or aubrietias; then, when the former have ceased flowering, the latter can take their place, the bulbs remaining in

the soil all the year round. For ordinary purposes the average border soil will suffice, but it must be clearly understood that to get the best results with choice kinds the special soils for each one recommended in the list of hardy bulbs and tubers must be provided. Special attention must also be given to kinds that require full sun, partial shade, or complete shade. The times for planting and the depth to plant will also be found in the list on p. 43. Anemones and ranunculi require a rich, well-manured soil to grow them well. The soil, therefore, should be dug two spits deep, and have plenty of rotten manure and leaf-mould mixed with it. If heavy, add a free supply of grit. Gladioli like a rich soil also, but in this case the manure must not be in direct contact with the corms, but placed six inches below. Mulchings of manure on the surface are, however, most beneficial, and should be given without hesitation. Lilies require special treatment, and so we shall deal with them in a separate chapter.

General Treatment.—Regarding the treatment of bulbs generally in borders, all except gladioli, tigridias, anemones, and ranunculi, and cottage tulips may be left all the year round in the borders, lifting and replanting every third or fourth year, as explained in the chapter on lifting and storing bulbs and tubers. In no case should the foliage be removed until it has withered. The foliage is indispensable to the last moment for enabling the bulb to store up its reserve food for next year's growth and flowering.

Carpeting Bulbs in Borders.—A very pretty effect will be obtained by planting the various bulbs wider apart than usual, and then placing polyanthuses, forget-me-nots, silenes, double daisies, primroses, double arabis, aubrietias, violas, violettas, and pansies between, to come into flower at same time or a little later than the bulbs. See remarks in connection with bulb culture in beds.

CHAPTER V.

BULBS ON ROCKERIES.

Those who possess a rockery may derive a good deal of pleasure from the cultivation of the many kinds of dwarf bulbous and tuberous-rooted plants described in the list published on p. 43. The chionodoxas, puschkinias, alliums, bravoas, brodiæas, calochorti, colchicums, crocuses, erythroniums, fritillarias, galanthuses, irises, muscaris, narcissi, as minimus and Bulbocodium, hymenocallis, cyclamen, and a few of the tulips are examples of various interesting genera of bulbs and tubers that are well adapted for rockery culture.

Carpeting Plants for Bulbs.—The elevated soil of a properly-constructed rockery ensures a well-drained site, just what most bulbs like, and the nooks and crannies afford ideal homes for small colonies of these lowly and interesting plants. As many of the foregoing genera flower and complete their growth early, it is a good plan to grow some dwarf alpine plant as a carpet or groundwork for clothing the bare soil in summer, and as a means of protection to the more tender bulbs in winter. Good plants for this purpose are the charming violettas, which Mr. D. B. Crane so enthusiastically describes in his book on "Pansies and Violets," and also aubrietias, Antennaria tomentosa, Arenaria balearica, montana, and purpurascens, Acæna microphylla, Campanula pulla, hederacea, and cæspitosa, Linaria alpina and repens, Mentha Requieni, Oxalis corniculata rubra, Saxifraga hypnoides and muscoides, Veronica repens and saxatilis, Hutchinsia alpina, Phlox canadensis, procumbens, reptans, and subulata, and Sedum acre, glaucum, and dasyphyllum. These are all very dwarf evergreen plants, not exceeding three inches

high, that will form a dense carpet of foliage, as well as produce a mass of flowers and add an additional attraction to the rockery. It may be thought that these plants will impoverish the soil and affect the growth of the bulbs. As a rule, however, this does not occur. In any case if the bulbs should show signs of deterioration it is an easy matter to lift them when their foliage has died down, and replenish the soil, afterwards replanting as before. Apart from clothing the bare surface and protecting the bulbs in winter, the carpeting of foliage intensifies the beauty of such bulbs as produce their flowers before their leaves, as in the case of autumn and spring flowering crocuses and colchicums, for example.

There are several annuals that may be sown in April as carpeting plants for small colonies of bulbs. For instance, there is the Sweet Alyssum, and Asperula setosa azurea, Clintonia (Downingia) elegans and pulchella, Erinus alpinus (strictly a perennial, but may be grown as an annual). Gypsophila elegans and muralis, and Leptosiphon (Gilia) densiflora, are also dwarf kinds specially suitable for the purpose.

Soil and Position.—Each genus or family of bulbs will require its own special soil and position, details of which are given in the lists published on p. 48. There also will be found information as to depth and distance apart to plant the bulbs, and the proper time to do so. Strict attention must be paid to all these points in order to ensure success. Some of the bulbs, too, may require to be lifted and replanted annually, particulars of which are supplied in the chapter on lifting and storing. Hardy cyclamen will be benefited by an annual mulching of rotten manure, which should be supplied when growth is at rest.

Protection.—Calochorti, babianas, ixias, and such irises as bakeriana, persica, and histrioides, should be protected from rains during the ripening period by covering

them with a bell-glass or hand-light. Indeed, in severe weather the very early-flowering kinds ought also to be protected thus, in order to permit their flowers to develop without injury by heavy rains, frosts, and cold winds.

CHAPTER VI.

NATURALISING BULBS.

The old-time method of growing bulbous and tuberous-rooted plants in lines and circles in beds and borders has, happily, lost a good deal of its popularity during the last two or three decades. Lovers of hardy flowers are gradually becoming more sensible in their ideas and tastes, and growing them in a more rational, effective, and artistic manner than of yore. Witness the delightful and pleasing displays of spring-flowering bulbs in our public parks, and in the large private gardens, for instance. There you observe thousands of snowdrops, crocuses, or daffodils massed either in the open lawn or under the shade of trees, in woodland or shrubbery, and flooding the landscape with golden, purple, or white blossoms in the spring. Truly, a charming picture of floral beauty, and a thousand times more artistic and natural than the old-time formal displays.

It is true that this modern plan is mainly applicable to gardens of ample scope. But even in a small garden there are ways and means of growing hardy bulbs and tubers effectively other than in the stereotyped old-fashioned plan of lines and circles. For example, on a small grass plot it is possible to grow small groups of snowdrops, crocuses, and daffodils, or in patches in the borders with a good

DAFFODILS NATURALISED ON A GRASSY BANK.

The Daffodil figured above is the Musk-scented Daffodil (Narcissus moschatus cernuus), a silvery-white kind, which is admirably adapted for naturalising in grass or woodlands in partial shade.

LILIUM AURATUM.

The popular Golden-rayed Japanese Lily. There are several varieties described on page 61.

effect. In those of a larger size, rockeries, terrace slopes, shrubbery borders, lawns, and open glades in the woodland afford a splendid opportunity for growing spring bulbs effectively. And then those who are privileged to have their homes surrounded by meadows, which can be kept free from live stock till summer arrives, may, indeed, have a glorious wealth of saffron and ivory-tinted narcissi, chequered fritillarias, blue and white anemones, and a host of other lovely spring-flowering bulbs and tubers with jewelled blossoms scintillating in a setting of exquisite emerald-green herbage from March to June. But let us cease these generalities and deal more specifically with the various ways to grow bulbs and tubers in a natural, pleasing, and effective manner.

Bulbs on Lawns.—Bulbs and tuberous-rooted plants may be grown in bold masses in the open lawn, under the spreading branches of deciduous trees, around the base of the branches of evergreen trees or shrubs, rockeries, or rock beds, and on grassy terrace slopes. Bulbs and tubers do well under the branches of deciduous trees, because at the time of flowering there is little shade and plenty of light filtering through from above. Then tufts of narcissi or snowdrops, peeping up through the ground-swept branches of evergreen trees, look exceedingly pretty in spring. Moreover, what looks prettier in spring than a terrace slope spangled with the white, purple, blue, and gold of snowdrop, squill, crocus, and daffodil? The main secret of growing bulbs in turf is not to cut off the foliage until it has turned yellow, and finished its good work of supplying the bulb with plenty of reserve food. Those who have a craze for tidiness, and must cut off the foliage when the flowers fade, had better leave the culture of bulbs in turf alone, for they will never flower satisfactorily after the first season. It is an easy matter where bulbs are grown on a small scale to cut the grass between the groups, and leave the rest till the foliage of the bulbs has finished its work.

To secure the most pleasing effect when the bulbs are in flower, simply scatter them as you would seeds, and then plant them just where they lie. Never arrange them in a set pattern. Take an object lesson from Nature, and note the way she scatters her primroses on hedge bank or in copse, or the daisies in the meadow. Of course, in a very small garden the bulbs may be grouped in patches of a dozen or so. Bulbs like those of the daffodil should be planted about four inches, and smaller ones, like snowdrops, three inches deep. Ues a dibber for making the holes, one with not too sharp a point. If a pointed dibber be used, put a pinch of soil in each hole for the bulb to rest on. Messrs. Barr and Son, bulb specialists, make a special tool for planting bulbs which is infinitely superior to the dibber. Where only a limited quantity of bulbs are to be planted lift the turf, fork up the soil and plant the bulbs, then replace the turf. It is not possible, of course, to scatter the bulbs on a sloping terrace bank. In this case, simply plant the bulbs a few inches apart, and thicker in some places than others.

Suitable bulbs and tubers to grow in the manner described anywhere on the lawn are:—Bulbs: Snowdrops, crocuses, chionodoxas, scillas, muscaris, leucojums, daffodils, Brodiæa violacea, erythroniums, and tulips. Tubers: Cyclamen and winter aconite. See pp. 43 to 76.

Bulbs in Pastures.—As previously explained, bulbs and tubers may be grown in meadows, pastures, or grass orchards, out of which cattle are kept during the flowering period. We know of no phase of floral beauty so attractive as bold masses of fritillarias, tulips, narcissi, crocuses, snowdrops, Star of Bethlehem (Ornithogalums), chionodoxas, colchicums, Hyacinthus amethystinus and azureus, leucojums, Muscari conicum (Heavenly Blue), Scilla hispanica and sibirica, in flower during the springtime. If the grass be left uncut till mid-July the bulbs will rapidly increase and produce a wealth of colour, the beauty of

which will be greatly intensified by the surrounding green grass and wild flora. Here, again, each kind of bulb should be grown in large colonies by themselves, scattering the bulbs like seeds on the surface, and then planting them by means of a Barr Bulb Planter.

Bulbs on Hedge Banks.—Bulbs like Muscari conicum (Heavenly Blue), hardy cyclamen, tulips, narcissi, crocus, scillas, bluebells, snowdrops, and narcissi add lustre and beauty to a hedge bank in spring. In many gardens rough hedge banks often exist, and these may be made extremely pretty and interesting by planting colonies of the foregoing bulbs in company with primroses and white and blue anemones. One of the prettiest banks we have ever seen was one planted thickly with Muscari Heavenly Blue and yellow primroses. In a well-ordered garden no spot should be left unplanted with a few spring bulbs.

Bulbs in Woodlands.—Woodland spaces fringing paths, or such as can readily be seen, may be turned to account by planting large colonies of bluebells, Muscari conicum (Heavenly Blue), and daffodils. In smaller colonies near the paths, Winter Aconite, cottage tulips, Crown Imperial lilies, Snake's-head Fritillarias, Leucojum vernum, Ornithogalum arabicum, Allium Moly, Dodecatheon media, Erythronium Dens-canis, snowdrops, crocuses, and larger colonies of such lilies as candidum, umbellatum, giganteum, and pyrenaicum may be grown with good effect. In springtime and summer the woodland garden will then be a veritable paradise of exquisite beauty, and add greatly to the charm of the surroundings of home.

Bulbs in Shrubbery Borders.—In large gardens there are often acres of shrubbery borders with large patches of earth under deciduous trees that might be uti-

lised to good effect by growing any of the bulbs named for the woodland garden. Certainly the white and the blue common bluebell, and Spanish bluebell (Scilla hispanica) in its several varieties, might be grown under the trees, and the other kinds grouped on the margins of the borders. Bulbs that have been used for forcing or pot culture might be utilised, too, for such positions.

Bulbs by the Waterside.—Several lilies do well in moist soil on the margins of water, as, for example, L. Burbankii; canadense, and its varieties; carniolicum and carolineum; pardalinum, and its varieties; Parryi, philadelphicum, Roezlii, and parvum, Fritillaria meleagris and its varieties, Narcissus odorus, poeticus, Emperor, Empress, Sir Watkin, Barrii conspicuus, Stella superba, and Duchess of Westminster. These grouped in colonies will not only flourish, but also flower profusely every year.

Bulbs on Banks.—On rough grassy banks crocuses, snowdrops, and Poet's Narcissus invariably do well, and may be planted in good bold masses.

CHAPTER VII.

OUTDOOR LILIES.

Liliums are such an important genus of plants, and form such a strong feature in garden decoration, that they deserve a fuller appreciation of their worth and a more extended description of their cultural needs than is possible in the chapters dealing with bulbs generally. We shall therefore devote a special chapter to their cultivation.

So numerous are the species and varieties that, to do them justice, they almost need a special monograph to themselves. One might, indeed, devote a garden entirely to their culture if one wished to grow them in large colonies. A garden of lilies carpeted with violas, pansies, or violettas would be a striking and most interesting feature, but, as such a scheme would require ample space, most lovers of these stately flowers could not avail themselves of such a luxury, and hence must be content with growing a few of the many species and varieties described on p. 61, in small groups in the mixed borders. And, after all, this is by no means an ineffective way of growing lilies. They certainly have an imposing and stately appearance when grown in groups of three or more in company with other tall subjects in the hardy plant border. What is more stately than a well-grown single specimen of L. giganteum, with its noble spike towering to a height of ten or twelve feet, and what more chaste and beautiful than a group of the Madonna lily! Anyway, there are no more beautiful garden flowers than the liliums, or that will better reward the grower for careful culture.

Some of the kinds will succeed in ordinary soil; others in a prepared soil of loam, leaf-mould, and peat; and

others in peat and leaf-mould only. We shall therefore divide the lilies into three groups, and deal with each separately so far as soil and position are concerned.

Lilies for Ordinary Soils.—In the first group, which includes the following species and their varieties, namely, Batemanniæ, bulbiferum, candidum, chalcedonicum, concolor, coridon, croceum, davuricum, excelsum, elegans, Hansoni, Henryi, longiflorum, Marhan, Martagon, pomponium, pyrenaicum, speciosum, tenuifolium, tigrinum, and umbellatum, ordinary garden soil will suffice. If it should be heavy, lighten it with sand and rotten manure; if very light, add rotten cow manure. Dig the soil deeply, and then the lilies will not fail to do well. The foregoing kinds will all do best in a sunny bed or border.

Lilies for Rich Soils.—In the second group a rich, deep, and good soil is essential. Peat and leaf-mould should be freely mixed with the natural soil. The subsoil must also be fairly moist. Where there is the slightest risk of the subsoil being dry, take out the soil to a depth of two feet, and place six inches of cow manure at the bottom, then six inches of soil on top, and fill up with equal parts of loam, peat, leaf-mould, and sand. Do not mix manure with the upper layer of soil. In such a soil the following species and varieties will succeed; Auratum, bakerianum, Bolanderi, Brownii, callosum, columbianum, cordifolium, giganteum, Humboldtii, japonicum, Kelloggii, kewense, Krameri, Leichtlini, Martagon album and dalmaticum, Maximowiczii, monadelphum, pulchellum, rubellum, washingtonianum, and sulphureum.

Lilies for Shady Positions.—In the third group we have lilies that require special soil, shade, and moisture. Thus, beds of peat and leaf-mould, or leaf-mould only, are essential, and these should be in partial shade. The beds should be made between peat-loving shrubs in the bog

NANKEEN LILY, LILIUM TESTAÇEUM.

This Lily, known also as Lilium excelsum, grows four to six feet high, bears lovely Nankeen yellow flowers in July, and will grow in any fairly good soil in a sunny position.

REMBRANDT TULIPS.

A race of Tulips allied to the Darwin type, and noteworthy for their rich and beautiful colours. Excellent for massing in beds and borders.

garden, or on the margins of a pond or lake where the lily roots can get plenty of moisture in summer. The species that require to be grown thus are: Burbankii, canadense, carniolicum, pardalinum, Parryi, philadelphicum, Roezlii rubescens, and superbum. L. giganteum also does well in partial shade, and may be grown in bold groups in open spaces in woodlands.

Grouping Lilies.—Generally speaking, all lilies are the better for having their bulbs and roots shaded from hot sunshine, and hence it is always an advantage to plant the bulbs in shrubberies or borders, where foliage can shield the soil from the sun. Lilies, moreover, also show to the best effect when grouped or massed together, not grown singly dotted about the borders. It is wise, too, to plant each species and its varieties by itself, then the effect is more pleasing. Lilies look well grouped among hardy ferns or peeping here and there out of shrubs.

Planting.—As to planting and the time to plant. The planting may be done in October and November or in March. The earlier period is the best where home-grown bulbs can be obtained. Bulbs that have basal roots only should be planted three inches deep, each bulb being placed on a layer of silver sand and also surrounded by it before covering in with soil. Those that produce stem as well as basal roots require to be planted four to six inches deep, to allow the stem roots when they form to have free access to plenty of food. It is the stem roots which supply the shoots and leaves with food; hence, if planted too shallow, the latter will develop too near the surface of the soil. In the case of imported bulbs, examine them carefully and remove all dead scales, then place the bulbs in cocoanut-fibre refuse in shallow boxes for a few weeks to enable them to regain their normal plumpness before replanting. Just before planting also see that plenty of flowers of sulphur is freely blown into the scales of the imported bulbs.

The Subsequent Culture of Lilies is confined to giving the beds an annual top-dressing of decayed manure in early spring. This precaution is especially necessary in the case of stem-rooting kinds like auratum, Alexandræ, Batemanniæ, Brownii, croceum, Dalhansoni, elegans, Hansoni, Henryi, Krameri, longiflorum, speciosum, and tigrinum, as the stem roots are greatly benefited by the manure. In dry weather, moreover, plenty of water is required, as lilies love moisture. An occasional dose of weak liquid manure will be helpful to bulbs that are flowering freely. So long as lilies are doing well do not interfere with them. When kinds like candidum fail to flower, lift the bulbs at the end of July, and replant in a fresh site; then they may flower in a year or so.

CHAPTER VIII.

TUBEROUS-ROOTED PLANTS.

The following genera require more or less special treatment than has been advised for bulbs generally, and, although we have, in the tabulated list published elsewhere, described the soil, position, time of planting, etc., for each, there yet remain a few important details which it is essential the reader should know. We will, therefore, give a few additional facts in this chapter.

Abobra.—This is a half-hardy Brazilian climber requiring to be grown in a warm border at the foot of a south wall, a trellis being provided for the support of the shoots. The tubers have to be lifted in October and stored

in sand in a frost-proof place, planting out again in June. In warm seasons this plant bears scarlet, egg-shaped fruits in autumn. Increased by offsets.

Alstromeria.—This genus, popularly known as the Herb Lily, is a native of China and Peru, and requires to be grown in a specially-prepared bed. Dig out the soil to a depth of three feet, and as wide as required. In the bottom place six inches of brick rubble for drainage, then add six inches of rotten manure, and fill up with a compost of equal parts peat, leaf-mould, and sandy loam. In this plant the roots, and each autumn top-dress with a mulch of decayed cow manure. A sunny, sheltered spot is essential for the bed. In very dry seasons give copious supplies of water. Increased by seeds sown in pans or boxes in a cold frame. Seedlings flower when two or three years old. Also increased by division, but it is not wise to disturb the roots too often. Keep all spent flowers removed.

Amorphophallus Rivieri.—This curious plant is of tender constitution, and can only be grown outdoors in the South of England during summer. The flowers are large, Arum-like, have a fœtid smell, and appear before the leaves. The latter are finely divided, and borne umbrella-like on the top of a stout solitary stem. More curious than beautiful. Tubers must be lifted when the foliage dies, and be stored in sand in a hothouse. Increased by division.

Anemone.—The tuberous-rooted anemones described in the tabulated list are among the gayest of spring-flowering plants. Particularly beautiful and richly diversified in colour are the St. Brigid, Nice, Caen, and Chrysanthemum-flowered strains of the Poppy Anemone (A. coronaria). These require to be grown in a medium soil, not too heavy nor too light. The soil must be deeply dug, and have plenty of decayed manure and leaf-mould worked into it. They prefer a partially shady position, such as

under the shade of fruit trees, and where there is ample protection from cold winds. The tubers may be planted in October or November for the earliest flowering, and in February or March for successional supplies. Draw drills three inches deep and six inches apart, and plant the tubers six inches apart therein, then cover with soil. In the case of those planted in autumn, place a layer of twiggy tree branches over the bed. This will afford the slight protection the early flowers need. After the foliage has died, lift the tubers, and store them in shallow boxes in a cool place till replanting time. To obtain a good supply of flowers, especially of the St. Brigid strain, it is really better to rear the plants from seed. The seed germinates very readily in good soil, and you get very strong plants. The seeds should be mixed with some sand or dry mould, and the whole well rubbed together to separate the fluffy seeds. They can either be sown broadcast and raked in or in shallow drills six inches apart. If you buy seeds, try and sow them in January or February, not later; if you save your own, then sow in July or August, as soon as the seeds are ripe. Seeds sown in March and later do not germinate so freely. Germination takes place very slowly indeed, consequently patience is needed. It usually takes seven months from the time the seed is sown till the plants flower. Those sown early in the year will flower in autumn; those sown in August the following spring. The beds must be well watered in dry weather. The roots may be allowed to remain in their beds so long as they continue healthy. We prefer to make a fresh sowing annually, and to discard the old roots after flowering.

As regard the Scarlet Windflower (A. hortensis fulgens) and its double variety the Peacock Anemone (A. hortensis pavonia), these are best grown on a partially shady rockery, in a compost of rich loam and old mortar. Plant the tubers in autumn, and do not lift annually.

Aplos.—A hardy climbing plant bearing fragrant

brownish-purple, pea-like flowers, and a native of Canada. It requires a warm border at the foot of a sunny wall, and a trellis for its graceful shoots to twine round. The tubers will not require annual lifting. Increased by division of the tubers. The only species is tuberosa.

Arum.—The Italian Arum (A. italicum) is a tuberous-rocted plant which bears curiously-formed yellowish, creamy, and green flowers, in the form of a spathe, in spring. Its leaves are green veined with white. A curiosity for culture in a well-drained, sunny border. Does not require to be lifted. Increased by offsets. For other so-called Arums see Dracunculus and Helicodiceros.

Asclepias tuberosa.—A showy tuberous-rooted perennial which does well in sandy soil on a warm border. It is a very striking plant when well grown, and usually flowers profusely in September and October. Increased by division of the roots in autumn.

Begonia.—The single and double-flowered varieties of the tuberous-rooted begonia are excellent and showy plants for summer bedding. They do very well in partial shade, as well as in sun, and if planted in good rich soil will make a brave display of colour from June to October. Plants may be reared from seed, as advised on p. 101, but these do not flower so freely as one, two, or three-year-old tubers. In the latter case the tubers should be started in boxes or pots in heat in February, grown on in heat till May, then hardened off and planted out six to twelve inches apart, according to size, late in May. Prior to planting dig in a liberal supply of decayed manure and leaf-mould, to make the soil rich and encourage a healthy growth. In dry weather give copious supplies of water. Early in October lift the plants intact, and place them in boxes in a sunny greenhouse to gradually ripen. When the foliage withers twist off the leaves and stems, and a week or so later store the tubers in cocoanut-fibre refuse in a cool, dry, frost-proof place till February.

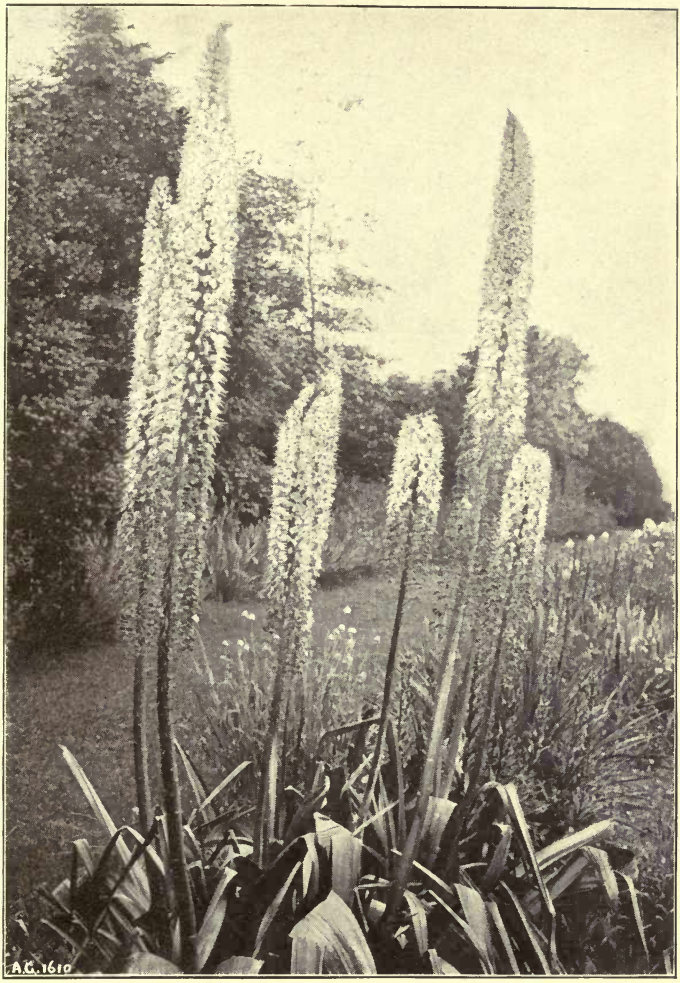
Boussingaultia.—The Madeira Vine (B. baselloides) bears fragrant white flowers and fleshy leaves on slender annual stems. A suitable plant for covering a sunny trellis or trailing over a bank in summer. Requires a warm soil. In cold districts lift the tubers in autumn, store in sand, and plant out in spring. Increased by division.

Commelina.—The only species (C. cœlestis) is a pretty blue-flowered plant with tuberous roots. There is also a white variety, named alba, and both do well in sea-side or sunny gardens. In well-drained soils this Mexican plant can be grown permanently in the garden, but in cold soils it is better to lift the tubers in autumn, store them in sand in a cool place, and plant out in spring. Increased by division.

Corydalis.—The species bulbosa and tuberosa are interesting plants for naturalising in woodland gardens or rough borders. See table of Hardy Tuberous-rooted Plants (p. 43).

Cyclamen.—We have but little to add about these charming winter and spring flowers to what has been supplied in the tabular list. Suffice it to say, these dainty plants appear most at home when naturalised on grassy slopes or in turf under the shade of deciduous trees. They may, however, be grown successfully on a rockery facing north or north-west, where there is little risk of their being disturbed or overgrown by other plants. Increased by seeds sown in pans of peat and leaf-mould in a cold frame.

Dahlia.—The dahlia is, of course, a tuberous-rooted plant, and strictly entitled to come within the scope of this work. As, however, its many types require more cultural details than we can afford space for, we shall refrain from saying more here than that it is, as well known, one of the



THE STATELY EREMURUS.

Eremurus robustus is one of the most stately and imposing of outdoor tuberous-rooted plants. When in flower the spikes grow 8 to 10 ft. high. Flowers pink; summer.

ERYTHRONIUM GRANDIFLORUM GIGANTEUM.

A beautiful variety of one of the finest of the American Dog's Tooth Violets. The flowers rich cream colour with orange base; Spring.

showiest genera of tender plants for autumn-blooming and worthy of a place in every garden. For full cultural details the reader cannot do better than consult Mr. J. B. Wroe's excellent monograph on "Dahlias and their Cultivation," issued by the publishers of this work.

Dracunculus.—D. vulgare (the Dragon Plant) was formerly included in the genus Arum as Arum dracunculus. It is a curious plant, with mottled stems, green leaves, and green and violet spathes or flowers. Requires similar culture to the Arum.

Eranthis.—This is the generic name of the Winter Aconite, a dwarf tuberous plant which flowers early in the year, and is well suited for naturalising in woodlands, in turf under trees, or grouping in the mixed border. It is perhaps best grown in turf, as there is less likelihood of the small tubers being disturbed than when grown in a border. Increased by offsets.

Eremurus.—A genus of very handsome tuberous-rooted flowering perennials, belonging to the Lily order (Liliaceæ). Many of them are of stately and noble growth, but they are unfortunately not hardy enough to succeed really well outdoors except in a few favoured districts. Those who live in mild, sheltered districts may grow these plants in positions sheltered from north and east winds. To ensure success it is advisable to prepare a special well-drained bed, fully three feet deep, and composed of good sandy loam, decayed cow manure, and leaf-mould. In this plant the roots three to four feet apart in autumn, keeping the crown just out of the soil. In winter mulch around each plant with decayed tree leaves, and when growth begins actively in spring top-dress with rotten manure and leaf-mould. In the event of frosty weather occurring after growth has begun protect the young shoots with dry bracken or litter. The plants often fail to flower

till three or more years after planting. Eremuri may be raised from seed sown in sandy loam and leaf-mould in gentle heat in spring, the seedlings being carefully transplanted into small pots, and finally placed in cold frames for a couple of years before finally planting out. Natives of Turkestan, Persia, and the Himalayas.

Geranium.—G. tuberosum is an interesting tuberous-rooted Crane's-bill, growing about a foot high and having curiously knotted and forked stems. Does best on a sunny rockery, and in cold districts requires a little protection in the shape of a covering of bracken or dry litter in winter. A well-drained soil is essential. Increased by division.

Helicodiceros.—A curious Arum-like plant, formerly known as Arum crinitum, or H. crinitus. It has narrow lobed leaves, purple-spotted stems, and purplish spathes which emit a carrion-like odour when fully grown. Requires similar culture to the Arum.

Mirabilis (Marvel of Peru).—Tender tuberous-rooted plants long grown in gardens during the summer. M. Japala grows three feet or so high, and bears red, lilac, yellow, or white fragrant flowers in summer. Other species are M. longiflora, bearing white, pink, or violet fragrant blossoms in August; and M. multiflora, purple flowers. The first-named is the most generally grown. The tubers require to be lifted in autumn, stored like dahlias, and started in heat in March, or planted out direct into the soil in May. Plants may be reared from seed sown in heat in February, to plant out in May for flowering the same year.

Orchids.—Several genera and species of orchids have tuberous roots, and, being very interesting hardy plants, must not be omitted from this volume. We refer to Calapogon pulchellus; Habenarias (Butterfly Orchises);

Orchis foliosa (Madeira Orchis); O. latifolia (Marsh Orchis); O. spectabilis (North American Orchis); laxiflora (Guernsey Orchis); and purpurea (Lady Orchis); also to Ophrys apifera (Bee Orchis); O. aranifera (Spider Orchis); O. muscifera (Fly Orchis); and O. tenthredinifera (Sawfly Orchis). A spare corner should certainly be found for these quaint plants. Grow the Calapogon in equal parts of peat and leaf-mould in a special bed in partial shade; Habenaria bifolia on a raised border in leaf-mould and loam under the shade of trees; Habenaria blephariglossis, ciliaris, and fimbriata in a bed of moist peat and leaf-mould in a shady spot; the orchises in a bed of two parts loam and one part of equal proportions of leaf-mould and decayed manure, in a sunny spot; and the Ophrys in a special bed composed of at least one foot of a compost of two parts of turfy loam, and one part of equal proportions of chalk or broken limestone and leaf-mould. They may also be grown on a turfy limestone or chalk bank.

Ranunculus.—The various kinds grown in gardens under the names of Turban, Scotch, Persian, Dutch, Italian, and French Ranunculi, and varieties of Ranunculus asiaticus, are asiatic species. They have claw-like tubers, and bear double or semi-double flowers in early summer. The Turban strain have large, double yellow, crimson, orange, rose, scarlet, or white self-coloured flowers. The French and Italian forms have larger flowers and a more robust constitution. The Persian strain are compact growing, and bear double flowers of striking colours. The Dutch and Scotch strain are dwarf forms of the latter, with edged or spotted flowers. The Turban type is the hardiest of the various strains. Ranunculi require a deep, rich, moderately moist soil, and a shady position. Before planting add plenty of decayed cow manure and leaf-mould to the soil. Plant the Turban strain in October or February; the Persian one in February

or March. Draw drills two inches deep and six inches apart, and plant the tubers claw-side downwards. In dry weather give copious supplies of water, with an occasional dose of weak liquid manure. On very light soils add a mulch of rotten manure to conserve the moisture and keep the roots cool. When the leaves turn yellow lift the tubers, dry, and store them away till planting time. Increased by seeds and offsets.

Salvia.—Salvia patens, a blue-flowered Mexican species, has tuberous roots, and requires to be treated similarly to the Marvel of Peru. Increased by cuttings inserted in a warm greenhouse in early spring; also by seeds sown in heat in March.

Schizostylis coccinea. — A showy crimson-flowered gladiolus-like plant, the spikes of which are most valuable for cutting in late autumn. It should be grown at the foot of a sunny wall or fence in moist loamy soil. Give an ample supply of water in summer, with occasional applications of liquid manure.

Tropæolum.—Three species of this genus have tuberous roots, and are more or less hardy. T. pentaphyllum grows six to ten feet high, and is well suited for rambling over a tree stump or trellis; and T. polyphyllum and T. tuberosum are also suitable for tree stumps or trailing over sunny banks. All require a sunny position; the two first a rich and the latter a rather poor soil. Lift the tubers of T. tuberosum in October, store in sand in a frost-proof place, and plant out the following May. Indeed, in cold districts it would be wise to treat all the species in this fashion. Increased by offsets.

CHAPTER IX.

HARDY TUBEROUS-ROOTED PLANTS.

A TABULATED LIST OF HARDY AND HALF-HARDY SPECIES.

THE genera and species of plants enumerated below are, with the exception of those prefixed by an asterisk, quite hardy and adapted for outdoor culture in the British Isles. The exceptions are best suited for the S. of England and Ireland, and if left in the soil all the year round, should be protected by a cloche or hand-light, or a covering of bracken fern, during the winter.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
*Abobra viridiflora ...	Green	June	6 ft.	Sandy loam	Sunny border	June	4	1 ft.
Alströmeria aurantiaca ...	Orange... ...	July	4 ft.	Loam, peat, leaf mould	,, ,,	October	6	,,
,, ,, lutea	Yellow ...	,,	,,	,, ,,	,, ,,	,,	6	,,
,, chilensis ...	Rose, red, orange	,,	3 ft.	,, ,,	,, ,,	,,	6	,,
,, Erembaulti ...	Rose, green, crimson	,,	2 ft.	,, ,,	,, ,,	,,	6	,,
,, pelegrinia ...	Yellow, rose	,,	18 in.	,, ,,	,, ,,	,,	6	,,
,, ,, alba	White	,,	1 ft.	,, ,,	,, ,,	,,	6	,,
,, ,, rosea	Rose	,,	,,	,, ,,	,, ,,	,,	6	,,
,, pulchella ...	Crim., pur., green	August	6 ft.	,, ,,	,, ,,	,,	6	,,
,, pulchra ...	White, yell., crimson	July	3 ft.	,, ,,	,, ,,	,,	6	,,
*Amorphophallis Rivieri ...	Purple	Spring	4 ft.	Sandy loam	,, ,,	April	4	6 in.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Anemone coronaria ...	Various ...	Spring	1 ft.	Ordinary, light, rich	Partial shade	Oct. or March	3	6 in.
,, hortensis ...	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, fulgens	Crimson ...	May	,,	,, ,,	,, ,,	,,	3	,,
,, ,, pavonina	,, double	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ranunculoides ...	Yellow	March	,,	,, ,,	,, ,,	,,	3	,,
*Apios tuberosa	Purple, black	July	10 ft.	Sandy loam	S. wall, sunny	March	4	3 ft.
Arum italicum	Yellow & grn.	Spring	18 in.	,, ,,	Sunny border	Oct. or March	4	1 ft.
Asclepias tuberosa	Or. red... ...	Autumn	,,	Sandy soil	Warm border	March	4	,,
*Boussingaultia baselloides	White & blk.	Sept.	6 to 8 ft.	,, ,,	S. wall, sunny	,,	4	3 ft.
Calopogon pulchellus ...	Purple, yell.	August	18 in.	Peat, leaf mould	Partial shade	,,	3	6 in.
*Commelina cœlestis ...	Blue	July	18 in.	,, ,,	Sunny border	April	4	1 ft.
Corydalis tuberosa	Purple	March	6 in.	Ordinary				
,, ,, albiflora	White	,,	,,	,, ,,				
,, bulbosa	Purple	April	,,	,, ,,	Sunny borders	March		6 in.
Cyclamen africanum ...	Blush	Autumn	,,	Peat, leaf mould, loam	Grass, rock'ries	August	2	,,
,, cilicicum ...	Wh. & purple	Winter	4 in.	,, ,,	,, ,,	,,	2	,,
,, Coum	Purple	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, album ...	Wh. & purple	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, lilacinum	Lilac	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, roseum ...	Rose	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, rubrum ...	Red	,,	,,	,, ,,	,, ,,	,,	2	,,
,, europæum ...	Crimson ...	Autumn	,,	,, ,,	Shady rockery	August	2	3 in.
,, ,, ibericum	Red	Feb.	,,	,, ,,	Grass, rock'ries	,,	2	6 in.

A LOVELY HYBRID NARCISSUS.

Narcissus poetaz Elvira is a hybrid, the result of a cross between a Polyanthus Narcissus and a Poet's Narcissus. Each stem bears three or more flowers which are deliciously fragrant. These hybrids are adapted for fibre, pot or garden culture.

BULB CULTURE IN FIBRE.

The Daffodil portrayed above is Narcissus bicolor Victoria. A simple and effective way of growing bulbs for home decoration.

Hardy Tuberous-rooted Plants.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
Cyclamen europæum	Red, lilac,	Feb.	4 in.	Peat, leaf	Grass, rock'ries	August	2	6 in.
lilacinum	crimson			mould, loam				
,, ,, roseum...	Rose	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, rubrum	Crimson ...	,,	,,	,, ,,	,, ,,	,,	2	,,
,, libanoticum ...	Rose, carm..	March	,,	,, ,,	,, ,,	,,	2	,,
,, neapolitanum ...	Red	Winter	,,	,, ,,	,, ,,	,,	2	,,
,, ,, album	White	Winter	,,	,, ,,	,, ,,	,,	2	,,
,, repandum ...	Crimson ...	March	,,	,, ,,	,, ,,	,,	2	,,
,, ,, album	White	,,	,,	,, ,,	,, ,,	,,	2	,,
Dracunculus vulgare ...	Purple	June	18 in.	Sandy loam	Sunny border	October March	4	1 ft.
Eranthis cilicica	Yellow ...	Jan.	4 in.	Ordinary	Grass, borders	Sept.	2	2 in.
,, hyemalis	,, ...	,,	,,	,,	,, ,,	,,	2	,,
Eremurus Bungei	,, ...	July	3 ft.	Sandy loam, leaf mould	Sheltered borders	March	3	4 ft.
,, himalaicus ...	White	June	8 ft.	,, ,,	,, ,,	,,	3	,,
,, Olgæ	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, robustus ...	Flesh	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, elwesianus	,, ...	,,	10 ft.	,, ,,	,, ,,	,,	3	,,
,, spectabilis ...	Yellow... ...	July	4 ft.	,, ,,	,, ,,	,,	3	,,
,, Warei	Orange, red, bronze	June	6 ft.	,, ,,	,, ,,	,,	3	,,
Erythronium americanum	Yellow ...	April	6 in.	Loam and leaf mould	Shady rockery or border	August	3	2 in.
,, Dens-canis ...	Purple, white	March	,,	,, ,,	,, ,,	,,	3	,,
,, ,, album	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, grandiflorum	Yellow ...	April	,,	,, ,,	,, ,,	,,	3	,,
,, Hartwegii ...	,, ...	March	1 ft.	,, ,,	,, ,,	,,	3	,,
,, Hendersonii	Purple ...	April	6 in.	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
Erythronium Howellii ...	Yellow ...	April	6 in.	Loam and leaf mould	Shady rockery or border	August	3	2 in.
,, Johnsonii ...	Red, pink ...	,,	8 in.	,, ,,	,, ,,	,,	3	,,
,, montanum ...	Wh. & yellow	,,	6 in.	,, ,,	,, ,,	,,	3	,,
,, nuttallianum	Yell., brown	,,	,,	,, ,,	,, ,,	,,	3	,,
,, revolutum ...	Pnk, ro., pur.	,,	8 in.	,, ,,	,, ,,	,,	3	,,
,, Watsonii ...	Cream ...	,,	,,	,, ,,	,, ,,	,,	3	,,
Geranium tuberosum ...	Violet, rose ...	July	2 in.	,, ,,	Sunny rockery	October	3	6 in.
Habenaria bifolia	White	June	1 ft.	Leaf mould, loam	Partial shade	April	6	,,
,, blephariglottis	,, ...	,,	2 ft.	Peat, leaf mould	Moist; shade	,,	6	,,
,, ciliaris	Orange... ...	,,	,,	,, ,,	,, ,,	,,	6	,,
,, fimbriata ...	Purple	,,	,,	,, ,,	,, ,,	,,	6	,,
Helicodiceros crinitum ...	Purple	,,	18 in.	Sandy loam	Sunny border	March	4	1 ft.
Ophrys apifera	Brown, pur.	June	8 in.	Sandy loam Limestone or chalk	Dry sunny rockery	April	4	6 in.
,, aranifera	Brown, yell.	,,	6 in.	,, ,,	,, ,,	,,	4	,,
,, muscifera	Br., pur., etc.	May	6 in.	,, ,,	,, ,,	,,	4	,,
,, tenthredinfera ...	Gn., brn., yell.	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
Orchis foliosa	Lilac	July	3 ft.	Loam, leaf mould, decayed manure	Sunny border	,,	6	1 ft.
,, latifolia	Purple	May	1 ft.	,, ,,	,, ,,	,,	6	6 in.
,, laxiflora	Purplish ...	May	18 in.	,, ,,	,, ,,	,,	6	8 in.
,, purpurea	Gn., pur., rose	,,	1 to 3 ft.	,, ,,	,, ,,	,,	6	1 ft.

Hardy Tuberous-rooted Plants.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Orchis spectabilis	Pinkish pur.	May	6 in.	Loam, leaf mould, decayed manure	Sunny border	April	6	6 in.
,, sambucina	Yellow, pur.	April	1 ft.	,, ,,	,, ,,	,,	6	,,
Ranunculus asiaticus ...	Various ...	Summer	9 in.	Ordinary, rich	Partial shade	October Feb.	2	,,
Schizostylis coccinea ...	Crimson ...	October	2 ft.	Moist loam	Sunny borders	March	4	1 ft.
Tropæolum pentaphyllum	Verm., pur....	,,	6 to 10 ft.	Sandy loam	Sunny bank	May	4	3 ft.
,, polyphyllum ...	Yellow, red	June	Trailer	,, ,,	,, ,,	,,	4	,,
,, tuberosum ...	Scar., yellow	Aug.	4 ft.	,, ,,	,, ,,	,,	4	,,

CHAPTER X.

HARDY AND HALF-HARDY BULBS.

A TABULATED LIST OF SPECIES, HYBRIDS, ETC.

THE genera and species described in the following tables are, with the exceptions of those prefixed by an asterisk, quite hardy and adapted for outdoor culture in the British Isles. Those prefixed by an asterisk are more or less tender and suitable for outdoor culture in the S. of England and Ireland only. In other districts, if grown outdoors, they should be given the protection of a cloche or a hand-light. Most, if not all, of the hardy and tender species may also be grown in pots in a cold house.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
*Albuca caniculata... ...	Yellow ...	June	18 in.	Sandy loam	Sunny border	March	3	4 in.
,, fastigiata	White & grn.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Nelsoni	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
Allium acuminatum ...	Rose ...	July	9 in.	Ordinary	Sunny border or rockery	Sept. to Oct.	3	,,
,, cæruleum (syn. azureum)	Blue ...	,,	2 ft.	Sandy loam	Sunny rockery	,,	3	6 in.
,, cyaneum	Blue ...	,,	6 in.	,, ,,	,, ,,	,,	3	3 in.
,, karatoviense ...	Red & violet	June	,,	,, ,,	,, ,,	,,	3	,,
,, moly	Yellow ...	May	1 ft.	Ordinary	Sunny border or rockery	,,	3	4 in.
,, murryanum. see acuminatum.								
,, narcissiflorum ...	Rosy purple	June	,,	,,	Sunny border	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Allium Erdeli	Wh. crim. eye	Summer		Ordinary	Sunny border	Sept., Oct.	3	6 in.
,, neapolitanum ...	White ...	May	18 in.	,,	Shady border or woods	,,	3	,,
,, ostrowskianum ...	Rose ...	,,	6 in.	Sandy loam	Sunny rockery	,,	3	3 in.
,, pulchellum ...	,, ...	July	9 in.	Ordinary	Sunny borders	,,	3	4 in.
,, ,, flavum...	Yellow ...	,,	,,	,,	,, ,,	,,	3	,,
,, rosenbachianum ...	Purple rose ...	,,	2½ ft.	,,	,, ,,	,,	3	8 in.
,, roseum	Rose ...	June	1 ft.	,,	,, ,,	,,	3	4 in.
,, Schubertii	Rose	Summer	,,	,,	,, ,,	,,	3	6 in.
,, triquetrum	White & grn.	June	18 in.	,,	,, ,,	,,	3	4 in.
,, tubergianum ...	Pink	Summer	2½ ft.	,,	,, ,,	,,	6	6 in.
,, zebdanense... ...	White ...	May	15 in.	Sandy loam	Sunny rockery	,,	3	4 in.
Amaryllis belladonna ...	Rose ...	Aug. & Sept.	20 in.	Light, well drained	Sunny border	Sept.	6	8 in.
,, ,, purpurea maxima	Deep rose ...	August	3 ft.	,, ,,	,, ,,	,,	6	,,
Antholyza æthiopica ...	Red & yellow	June	4 ft.	Sandy loam	,, ,,	Oct.	4	6 in.
,, caffra	Red ...	July	3 ft.	,, ,,	,, ,,	,,	4	,,
,, cunonia... ...	Scarlet & bk.	,,	,,	,, ,,	,, ,,	,,	4	,,
,, fulgens	Rose ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, paniculata ...	Red & yellow	,,	4 ft.	,, ,,	,, ,,	,,	4	,,
*Babiana disticha	Blue ...	July	6 in.	,, ,,	Sunny border	Sept	4	3 in.
,, macrantha ...	Yell., purple	,,	8 in.	,, ,,	Sunny rockery	Mar. or Sept.	4	,,
,, plicata	Violet, blue...	,,	6 in.	,, ,,	Sunny border	,,	4	,,
,, ringens	Scarlet ...	June	,,	,, ,,	,, ,,	,,	4	,,
*Belamacanda chinensis ...	Orange & bk.	,,	2 ft.	,, ,,	,, ,,	Oct.	4	4 in.
Bellevalia, see Hyacinthus.								

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
*Bessera elegans	Scarlet ...	Aug. to Sept.	18 in.	Loam, leaf mould	Sunny rockery	March	3	4 in.
*Bloomeria aurea	Yellow ...	June	15 in.	Sandy loam	Sunny borders	Sept.	3	3 to 4 in.
,, Clevelandii ...	,,	,,	1 ft.	,, ,,	,, ,,	,,	3	,,
Bobartia, see Homeria.								
Bravoa geminiflora ...	Orange-red	July	2 ft.	,, ,,	Sunny rockery	March	3	4 in.
Brevoortia Ida-Mai ...	Red & green	June	18 in.	Light	,, ,,	Sept.	4	3 in.
Brodiæa Bridgesii ...	Purple, rose	,,	,,	Sandy loam	,, ,,	,,	4	,,
,, californica ...	Heliotrope ...	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
,, candida	Blue & white	,,	,,	,, ,,	,, ,,	,,	4	,,
,, capitata alba ...	White ...	,,	2 ft.	,, ,,	,, ,,	,,	4	,,
,, coccinea violacea	Rose, white...	,,	,,	,, ,,	,, ,,	,,	4	6 in.
,, ,, alba ...	Primrose, gn.	,,	,,	,, ,,	,, ,,	,,	4	,,
,, congesta ...	Lilac ...	,,	,,	,, ,,	,, ,,	,,	4	3 in.
,, ,, alba ...	White ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, grandiflora ...	Blue ...	,,	6 in.	,, ,,	,, ,,	,,	4	,,
,, Hendersoni ...	Yellow ...	,,	18 in.	,, ,,	,, ,,	,,	4	,,
,, Howellii lilacina	Lilac ...	,,	2 ft.	,, ,,	,, ,,	,,	4	,,
,, ixioides splendens	Yellow ...	,,	9 in.	,, ,,	,, ,,	,,	4	,,
,, laxa	Blue ...	,,	18 in.	,, ,,	,, ,,	,,	4	,,
,, murryana ...	Violet, blue	,,	9 in.	,, ,,	Sunny borders	,,	4	,,
,, peduncularis ...	White ...	,,	18 in.	,, ,,	Sunny rockery	,,	4	,,
,, Purdyi	Lilac, violet	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
,, uniflora	Wh., blue, &c.	May	6 in.	,, ,,	Rockery or grass	,,	4	,,
,, volubilis	Rose	Summer	5 to 10 ft.	,, ,,	Border; climber	,,	4	1 ft.
Bulbocodium vernum ...	Rose, purple	Feb.	,,	Ordinary	Borders or grass	,,	3	3 in.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
*Calochortus albus	White ...	July	1 ft.	Loam, peat, sand	Partial shade	Nov.	3	4 in.
,, amœnus ...	Pink ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Benthamii ...	Yellow ...	,,	8 in.	,, ,,	Sunny rockery	,,	3	,,
,, cæruleus major	Lilac, blue ..	,,	6 in.	,, ,,	,, ,,	,,	3	,,
,, clavatus ...	Yellow ...	June	2½ ft.	Gravelly soil	Sunny border	March	4	,,
,, elegans... ...	White ...	,,	8 in.	Loam, peat, sand	Sunny rockery	Nov.	3	,,
,, Goldyii ...	Golden ...	,,	1½ ft.	Moist loam	Partial shade	,,	4	,,
,, Gunnisonii ...	White ...	July	2 ft.	Loam, peat, sand	Sunny beds	,,	3	,,
,, Howellii ...	,, ...	,,	1½ ft.	Moist loam	Partial shade	,,	4	,,
,, Kennedyii ...	Orange, red	,,	2½ ft.	Gravelly soil	Sunny borders	March	4	,,
,, lilacinus ...	Lilac, purple	,,	9 in.	Loam, peat, sand	Sunny rockery	Nov.	3	,,
,, luteus	Yellow, red	,,	1 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, concolor	Yellow ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Lyonii	White, rose	,,	2 ft.	,, ,,	,, ,,	,,	3	,,
,, macrocarpus	Lilac ...	Aug.	18 in.	Gravelly soil	Sunny border	March	4	,,
,, nitidus ...	White ...	,,	2 ft.	Loam, peat, sand	Sunny rockery	Nov.	3	,,
,, Plummeræ ...	Lilac ...	,,	,,	Gravelly soil	Sunny border	March	4	,,
,, pulchellus ...	Yellow ...	,,	1 ft.	Loam, peat, sand	Sunny rockery	Nov.	3	,,
,, Purdyii ...	White ...	,,	,,	Sandy loam	,, ,,	,,	3	,,
,, splendens ...	Lilac ...	,,	2 ft.	Peat, loam, sand	,, ,,	,,	3	,,
,, venustus ...	White ...	July	18 in.	,, ,,	,, ,,	,,	3	,,
,, ,, citrinus	Yellow ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, oculatus	Various ...	,,	,,	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Calochortus venustus purpurascens	Purple, rose, white	July	18 in.	Peat, loam, sand	Sunny rockery	Nov.	3	4 in.
,, ,, robustus	Various ...	,,	,,	Moist loam	Partial shade	,,	3	,,
,, ,, roseus ...	,, ...	,,	,,	Peat, loam, sand	Sunny rockery	,,	3	,,
,, ,, Eldorado	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, vesta ...	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Nuttallii ...	White ...	June	6 in.	,, ,,	,, ,,	,,	3	,,
,, Weedii (citrinus)	Yellow ...	July	1 ft.	,, ,,	,, ,,	,,	3	,,
Camassia atrocœ rubea ...	Blue	,,	2 ft.	Ordinary	Sunny border	October	4	6 in.
,, esculentea ...	,, ...	,,	,,	,,	Sunny border or grass	Oct. or March	4	4 in.
,, ,, alba ...	White ...	,,	,,	,,	,, ,,	,,	4	,,
,, Cusickii	Blue ...	,,	2½ ft.	,,	,, ,,	,,	4	,,
,, Fraseri	,, ...	,,	1 ft.	,,	Sunny borders	,,	4	,,
,, Leichtlinii ...	Creamy white	,,	2 ft.	,,	,, ,,	,,	4	,,
Chionodoxa cretica... ...	Blue & white	March	6 in.	Sandy loam	Sunny rockery	Sept., Oct.	3	1 to 2 in.
,, Allenii ...	Violet ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Boissieri ...	Lav., blue ...	,,	6 to 9 in.	,, ,,	,, ,,	,,	3	,,
,, grandiflora ...	,, ,, ...	,,	6 in.	,, ,,	,, ,,	,,	3	,,
,, luciliæ	Blue & white	,,	6 to 9 in.	,, ,,	Sunny borders	,,	3	,,
,, ,, alba ...	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, roseus ...	Rose, lilac ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, nana	White, lilac	April	3 in.	,, ,,	Sunny rockery	,,	3	,,
,, sardensis ...	Blue ...	March	6 in.	,, ,,	,, ,,	,,	3	,,
,, Tmolusii ...	Pur., bl., wh.	April	,,	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
*Chlidanthus fragrans ...	Yellow ...	June	9 in.	Loam, leaf mould, sand	Sunny border	April	3	3 in.
Chlorogalum pomeridianum	White & pur.	July	2 ft.	Ordinary	,, ,,	Oct.	3	,,
Colchicum autumnale ...	Purple ...	Sept.	9 in.	Sandy loam	Borders, shade	Aug.	3	,,
,, ,, album ...	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, croci-florum	Purple, wh.	March	6 in.	,, ,,	,, ,,	,,	3	,,
,, Bornmulleri ...	Rosy lilac ..	Sept.	1 ft.	,, ,,	,, ,,	,,	3	,,
,, byzantinum ...	Rosy purple	,,	6 in.	,, ,,	,, ,,	,,	3	,,
,, ,, cilicium	,, ,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Decaisnei ...	Flesh ...	Nov.	8 in.	,, ,,	Partial shade	,,	3	,,
,, hydrophilum ...	Pink ...	Spring	6 in.	,, ,,	,, ,,	Sept.	3	,,
,, libanoticum ...	Rose & white	,,	,,	,, ,,	,, ,,	,,	3	,,
,, neapolitanum ...	Rosy purple	Sept.	,,	,, ,,	,, ,,	Aug.	3	,,
,, Sibthorpii ...	Wh., purple	,,	8 in.	,, ,,	,, ,,	,,	3	,,
,, speciosum ...	Lilac, purple	,,	1 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, album	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, variegatum ...	Wh. & purple	,,	6 in.	,, ,,	,, ,,	,,	3	,,
,, ,, Parkinsonii	Purple & wh.	,,	,,	,, ,,	,, ,,	,,	3	,,
*Cooperia Drummondi ...	White ...	August	9 in.	,, ,,	Sunny borders	Sept. Oct.	3	,,
,, pedunculata ...	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
*Crinum capense	Rose	Summer	3 ft.	Well-drained loam	,, ,,	March	6	1 ft.
,, ,, album ...	White	,,	,,	,, ,,	,, ,,	,,	6	,,
Crocosmia aurea	Orange, red	July	2 ft.	Sandy loam	,, ,,	Oct.	3	4 in.
Crocus alatavicus	Wh. & black	Spring	3 in.	,, ,,	Sunny rockeries	Oct. Nov.	3	3 in.
,, asturicus	Purple ...	Autumn	,,	,, ,,	,, ,,	Aug.	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
Crocus asturicus azureus ...	Blue ...	Autumn	3 in.	Sandy loam	Sunny rockeries	Aug.	3	3 in.
,, aureus	Orange yell.	Spring	,,	,, ,,	,, ,,	Oct.	3	,,
,, anycrensis	Or. yellow ...	Winter	,,	,, ,,	Borders or Rockeries	Aug.	2	,,
,, Balsanæ	Or. brown ...	,,	,,	,, ,,	Sunny Rockeries	Oct.	3	,,
,, biflorus	Wh. & black	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, argenteus	Wh., str. bk.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Weldeni albidus	Cream & wh.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Chrysanthus ...	Orange ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Cyprius	Lilac ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Imperati	Black, etc. ...	,,	4 in.	,, ,,	,, ,,	,,	3	,,
,, hyemalis Foxii ...	Wh.,pur.,yel.	Autumn	3 in.	,, ,,	Borders or Rockeries	Aug.	2	,,
,, iridiflorus	Lilac ...	,,	,,	,, ,,	Sunny rockeries	,,	3	,,
,, longiflorus	Rosy lilac ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, medius	Purple ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, pulchellus	Blue ...	,,	,,	,, ,,	Sunny rockeries	,,	3	,,
,, nudiflorus	Purple ...	,,	,,	,, ,,	Sunny rockeries or grass	,,	3	,,
,, reticulatus	White, lilac	Spring	,,	,, ,,	Sunny rockeries	Oct.	3	,,
,, Salzmanni	Lilac	Autumn	,,	,, ,,	Borders or Rockeries	Aug.	2	,,
,, ,, ...	Purple ...	,,	,,	,, ,,	Sunny Rockeries	,,	3	,,
,, sativus	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Crocus Sieberi	Lilac ...	Spring	3 in.	Sandy loam	Sunny rockeries	Oct.	3	3 in.
,, speciosus	Blue ...	Autumn	,,	,, ,,	Rockery or grass	Aug.	3	,,
,, susianus	Or. brown ...	Spring	,,	,, ,,	Sunny rockery	Oct.	3	,,
,, tommassinianus ...	Lav., white	,,	,,	,, ,,	,, ,,	,,	3	,,
,, vernus	White, pur.	,,	,,	,, ,,	Bord. or grass	,,	3	,,
,, versicolor violaceus	Lilac, purple	,,	,,	,, ,,	,, ,,	,,	3	,,
,, vitellinus	Yellow & or.	Winter	,,	,, ,,	Borders or Rockeries	Aug.	2	,,
,, zonatus	Rose, lilac ...	Autumn	,,	,, ,,	Bord. or grass	Oct.	3	,,
*Cypella Herbertii... ...	Yellow ...	July	1 ft.	,, ,,	Sunny border	,,	4	,,
,, peruviana ...	Yell., brown	,,	,,	,, ,,	,, ,,	,,	4	,,
,, plumbea	Blue ...	August	3 ft.	,, ,,	,, ,,	,,	4	,,
,, platensis	Bl., wh., yell.	,,	,,	,, ,,	,, ,,	,,	4	,,
Dierama pulcherrimum ..	Blood red ..	Sept.	3 to 6 ft.	,, ,,	,, ,,	Sept.	3	,,
*Eucomis punctata... ...	Creamy wh.	July	2 ft.	,, ,,	,, ,,	,,	3	1 ft.
* ,, ,, ...	Green	Aug.	18 in.	,, ,,	,, ,,	March	6	18 in.
*Ferarraria undulata ...	Green, brown	Spring	8 in.	Loam, leaf mould	,, ,,	Sept.	4	4 in.
Fritillaria armena	Gold. yellow	July	6 in.	Sandy loam	Sunny rockery	,,	4	6 in.
,, aurea	Yellow ...	May	8 in.	,, ,,	,, ,,	,,	4	,,
,, citrina	,, ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, coccinea ...	Scarlet ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, Elwesii	Yellow, pur.	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
,, kamtschatica ...	Black	,,	9 in.	,, ,,	Sunny borders	,,	4	,,
,, Imperialis ...	Yellow ...	,,	4 ft.	Ordinary	,, ,,	,,	4	,,
,, ,, lutea	,, ...	,,	,,	,,	,, ,,	,,	4	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Fritillaria Imperialis rubra	Red ...	May	4 ft.	Ordinary	Sunny borders	Sept.	4	6 in.
,, lanceolata graci-lis	Purple ...	,,	18 in.	,,	,, ,,	,,	4	,,
,, latifolia	Red ...	,,	1 ft.	Sandy loam	Sunny rockery	,,	4	,,
,, libanotica ...	Lil. & yellow	,,	,,	,, ,,	,, ,,	,,	4	,,
,, liliaceæ	White ...	,,	9 in.	,, ,,	,, ,,	,,	4	,,
,, Meleagris ...	Purple ...	April	1 ft.	Ordinary	Borders or grass	,,	4	,,
,, pallidiflora ...	Yellow ...	May	8 in.	Sandy loam	Sunny rockery	,,	4	,,
,, persica ...	Violet ..	,,	2 ft.	,, ,,	,, ,,	,,	4	,,
,, ,, alba ...	White ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, plurifolia ...	Purple red ...	April	1 ft.	,, ,,	,, ,,	,,	4	,,
,, pudica	Yellow ...	,,	6 in.	,, ,,	,, ,,	,,	4	,,
,, pyrenaica ...	Purple ...	June	18 in.	,, ,,	,, ,,	,,	4	,,
,, recurva	Scarlet & yell.	May	,,	,, ,,	,, ,,	,,	4	,,
,, Sarana	Pur. & black	,,	1 ft.	Peat and leaf mould	Shady, moist border	,,	4	,,
,, Thunbergi ...	Green & pur.	,,	,,	Sandy loam	Sunny rockery	,,	4	,,
,, tubæformis (Moggridgei)	Pur. yellow	June	8 in.	,, ,,	,, ,,	,,	4	,,
,, Whitallii ...	Pur. brown	April	1 ft.	,, ,,	,, ,,	,,	4	,,
Gagea lutea	Yellow & grn.	,,	6 in.	Ordinary	Sunny border	October	3	3 in.
Galanthus cilicicus ...	White ...	Feb.	,,	Sandy loam	Sunny rockery	Sept.	2	,,
,, Elwesii	,, ...	January	8 in.	,, ,,	Rockery or grass	,,	2	,,
,, Fosteri	,, ...	Feb.	6 in.	,, ,,	Sunny rockery	,,	2	,,
,, Ikariæ	,, ...	,,	8 in.	Ordinary	Borders or grass	,,	2	,,
,, nivalis	,, ...	,,	4 in.	,,	,, ,,	,,	2	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Galanthus nivalis Atkinsii	White ...	Feb.	3 in.	Ordinary	Borders or grass	Sept.	2	2 in.
,, ,, fl. pl.	Double ...	,,	,,	,,	,, ,,	,,	2	,,
,, plicatus	White ...	January	1 ft.	,,	,, ,,	,,	2	,,
,, Whittalli ...	,, ...	Feb.	6 in.	Sandy loam	Borders or Rockeries	,,	2	3 in.
Galtonia candicans ...	,, ...	July	4 ft.	Ordinary	Borders	October March	6	,,
*Geissorhiza rochensis ...	Blue & crim.	June	9 in.	Peat, loam and sand	Sunny border	October	3	,,
*Gelasine azurea	Blue ...	May	1 ft.	,, ,,	Sunny rockery	,,	4	4 in.
Gladiolus alatus	Red ...	June	6 in.	Good ordinary	Sunny borders	,,	4	,,
,, atroviolaceus ...	Purple ...	July	1 ft.	,, ,,	,, ,,	Nov.	4	8 to 12 in.
,, blandus	White, red, yellow	June	2 ft.	,, ,,	,, ,,	Feb. or March	4	6 in.
,, brenchleyensis ...	Scarlet ...	Sept.	3 ft.	,, ,,	,, ,,	March	4	8 to 12 in.
,, byzantinus ...	Purple ...	June	2 ft.	,, ,,	,, ,,	Nov.	4	6 in.
,, cardinalis ...	Scarlet, wh.	July	1 ft.	,, ,,	,, ,,	,,	4	8 to 12 in.
,, Childsii	Various ...	Autumn	3 to 4 ft.	,, ,,	,, ,,	March	4	,,
,, Colvillei	Purple, red ...	July	2 ft.	,, ,,	,, ,,	Nov.	4	,,
,, ,, alba ...	White ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, communis ...	Wh., ro., pur.	,,	,,	,, ,,	,, ,,	,,	4	6 in.
,, cruentus	Scarlet ...	Summer	,,	,, ,,	,, ,,	,,	4	,,
,, delicatissima ...	White, crim.	,,	,,	,, ,,	,, ,,	,,	4	,,
,, gandavensis ...	Various ...	Autumn	2 to 3 ft.	,, ,,	,, ,,	,,	4	8 to 12 in.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Gladiolus Lemoinei ...	Various ...	Autumn	3 ft.	Good ordinary	Sunny borders	March	4	8 to 12 in.
,, psittacinus ...	Yell. & red ...	Summer	2 ft.	,, ,,	,, ,,	,,	4	6 in.
,, purpurea-auratus	Yellow ...	,,	,,	,, ,,	,, ,,	Nov.	4	,,
,, ramosus	Various ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, Saundersii ...	Scarlet, wh.	,,	,,	,, ,,	,, ,,	,,	4	,,
,, segetum	Purple ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, tristis	Yellow ...	,,	,,	,, ,,	,, ,,	,,	4	,,
*Hippeastrum(Habranthus) pratensis	Scarlet ...	July	1 ft.	Loam and leaf mould	,, ,,	October	4	,,
*Homeria collina	Or., red, yell.	May	2 ft.	Sandy loam	,, ,,	Sept.	3	3 in.
Hyacinthus amethystinus...	Blue ...	Spring	6 to 12 in.	Ordinary	Borders or grass	October	4	4 in.
,, ,, albus	White ...	,,	,,	,,	,, ,,	,,	4	,,
,, azureus ...	Blue ...	Feb.	4 in.	,,	Rockery	,,	4	,,
,, orientale ...	Various ...	Spring	9 to 12 in.	,,	Beds or borders	Nov.	4	6 to 8 in.
,, romanus ...	White or blue	May	18 in.	,,	Borders	,,	4	,,
*Hymenocallis (Ismene) Amancæs	White ...	March	2 ft.	Sandy loam, leaf mould	Sunny rockery	,,	4	6 in.
,, calathina ...	Wh. & green.	,,	,,	,, ,,	,, ,,	,,	4	,,
,, Macleana ...	White ...	June	,,	,, ,,	,, ,,	,,	4	,,
*Hypoxis stellata	Wh. & black.	May	8 in.	Peat, loam, leaf mould	,, ,,	March	3	3 in.
,, ,, elegans...	Yell. & black	,,	,,	,, ,,	,, ,,	,,	3	,,
,, villosa	Yellow ...	,,	,,	,, ,,	,, ,,	,,	3	,,
Iris alata	Blue ...	January	1 ft.	Sandy loam	,, ,,	August Sept.	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Iris Aschersonii	Yell. purple	Spring	1 ft.	Sandy loam	Sunny rockery	August Sept.	3	3 in.
,, assyriaca	White ...	March	,,	,, ,,	,, ,,	,,	3	,,
,, bakeriana	Blue & white	January	,,	,, ,,	,, ,,	,,	3	,,
,, Battanderi	White ...	Spring	,,	,, ,,	,, ,,	,,	3	,,
,, Boissieri	Violet, yellow	May	,,	,, ,,	,, ,,	,,	3	,,
,, Bucharica	White and yellow	Spring	,,	,, ,,	,, ,,	,,	3	,,
,, caucasica	Yellow ...	Feb.	,,	,, ,,	,, ,,	,,	3	,,
,, Danfordiæ	Yell. & brown	,,	,,	,, ,,	,, ,,	,,	3	,,
,, filifolia	Purp. yellow	Summer	18 in.	,, ,,	,, ,,	,,	3	6 in.
,, galatica	Silver grey ...	Spring	6 in.	,, ,,	,, ,,	,,	3	3 in.
,, Grant Duffii	Sulp. yellow	,,	2 ft.	,, ,,	,, ,,	,,	3	6 in.
,, Histrio	Lilac ...	Feb.	6 in.	,, ,,	,, ,,	,,	3	3 in.
,, histrioides	Blue, yellow, violet	,,	,,	,, ,,	,, ,,	,,	3	,,
,, juncea	Yellow ...	May	1 ft.	,, ,,	,, ,,	,,	3	,,
,, lusitanica	Wh., yell., or.	Spring	18 in.	,, ,,	Sunny rockeries	Sept.	3	3 in.
,, orchioides	Yellow ...	April	8 in.	,, ,,	Sunny rockery	August Sept.	3	,,
,, ,, cærulea ...	Blue ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, sulphurea ...	Pale, yellow	,,	,,	,, ,,	,, ,,	,,	3	,,
,, persica	Yellow, lilac, green	Feb.	4 in.	,, ,,	,, ,,	,,	3	,,
,, ,, Heldreichii ...	Blue ...	March	6 in.	,, ,,	,, ,,	,,	3	,,
,, purpureo-persica ...	Red, mar., or.	Feb.	4 in.	,, ,,	,, ,,	,,	3	,,
,, purs sind	Ro., pur., blue	,,	,,	,, ,,	,, ,,	Sept.	3	,,
,, reticulata	Bl., yell., etc.	,,	8 in.	,, ,,	Sunny rockery or grass	August Sept.	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Iris reticulata Krelagei ...	Purple ...	Feb.	8 in.	Sandy loam	Sunny rockery	October	3	3 in.
,, rosenbachianum ...	White, lilac, yellow	March	6 in.	,, ,,	,, ,,	,,	3	,,
,, sindjarensis	Lilac ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, sind-pers...	Blue & yellow	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Sisyrinchium	Lilac & yell.	April	1 ft.	,, ,,	,, ,,	,,	3	,,
,, Tauri	Violet, white, and yellow	March	6 in.	,, ,,	,, ,,	,,	3	,,
,, tingitana	Violet & pur.	May	3 ft.	,, ,,	Sunny borders	,,	3	6 in.
,, tuberginiana	Yellow ...	April	8 in.	,, ,,	Sunny rockery	,,	3	3 in.
,, tuberosa	Green & bk.	March	9 in.	,, ,,	Sunny border	,,	3	,,
,, Vartani	Lilac, yellow	October	8 in.	,, ,,	,, ,,	,,	3	,,
,, warleyensis	Blue, violet, yellow	April	,,	,, ,,	,, ,,	,,	3	,,
,, xiphioides	Various ...	Summer	1 to 2 ft.	Ordinary	,, ,,	,,	3	6 in.
,, xiphium	,, ...	,,	,,	,,	,, ,,	,,	3	,,
Ixia maculata	Brown & wh.	May	1 ft.	Sandy loam	,, ,,	Nov. or Feb.	3	3 in.
,, paniculata	Yell. & white	July	,,	,, ,,	,, ,,	,,	3	,,
,, patens	Purple ...	April	,,	,, ,,	,, ,,	Nov.	3	,,
,, polystachya	Wh. & brown	Summer	18 in.	,, ,,	,, ,,	Nov. or Feb.	3	,,
,, speciosa	Purple and crimson	,,	1 ft.	,, ,,	,, ,,	,,	3	,,
,, viridiflora	Green ...	May	,,	,, ,,	,, ,,	,,	3	,,
*Ixiolirion kolpakowskianum	Blue ...	,,	,,	Loam, leaf mould, sand	,, ,,	Sept.	4	6 in.
,, montanum ...	Lilac ...	June	,,	,, ,,	,, ,,	,,	4	,,
,, Pallassi	Blue ...	,,	,,	,, ,,	,, ,,	,,	4	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Lapeyrousia cruenta ...	Carmine, crimson	Aug. and Sept.	1 ft.	Sandy loam	Sunny border	Sept.	6	6 in.
Leucojum æstivum ...	White & gr.	May	,,	,, ,,	Moist border or grass	,,	3	4 in.
,, vernum	,, ,,	March	,,	,, ,,	,, ,,	,,	3	,,
,, ,, carpathicum	,, ,,	,,	,,	,, ,,	,, ,,	,,	3	,,
Lilium Alexandræ	White ...	July	2 ft.	Loam and leaf mould	Partial shade	Oct. to March	3	6 in.
,, auratum	White, crim., etc.	August	4 ft.	,, ,,	,, ,,	,,	3	6 to 8 in.
,, ,, pictum	White, crim., red	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, platyphyllum	White, crim., etc.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, ,, virginale	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rubra vittatum	Wh., crimson	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Wittei ...	White, gold	,,	3 to 4 ft.	,, ,,	,, ,,	,,	3	,,
,, Batemanniæ ...	Apricot ...	,,	2 to 3 ft.	Good ordinary	Sunny borders	,,	3	6 in.
,, Bolanderi	Crimson ...	July	3 ft.	Sandy peat	Shady damp border	Oct. to Feb.	3	1 ft.
,, Brownii	White & red	June	3 ft.	Loam and leaf mould	Partial shade	Oct. to March	3	6 in.
,, ,, leucanthemum	White, br. & yellow	,,	,,	,, ,,	,, ,,	,,	3	,,
,, bulbiferum	Crim. & or.	,,	1 ft.	Good ordinary	Sunny border	,,	3	,,
,, Burbankii	Orange, yell., crimson	July	4 to 6 ft.	Peat and leaf mould	Shady, moist bed	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Lilium callosum	Orange, red	July	2 ft.	Loam and leaf mould	Partial shade	Oct. to March	3	6 in.
,, canadense	Yell., orange	,,	3 ft.	Peat and leaf mould	Shady, moist bed	,,	3	,,
,, ,, flavum	Yell. & black	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rubrum	Red, yellow, black	,,	,,	,, ,,	,, ,,	,,	3	,,
,, candidum	White ...	June	4 to 5 ft.	Good ordinary	Sunny border	,,	3	,,
,, ,, speciosum	,, ...	July	,,	,, ,,	,, ,,	,,	3	,,
,, carniolicum... ...	Red ...	,,	3 ft.	Peat and leaf mould	Shady, moist bed	,,	3	,,
,, carolinianum ...	Orange, red, mar.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, chalcedonicum ...	Scarlet ...	,,	,,	Good ordinary	Sunny border	,,	3	,,
,, ,, Heldreichii	,, ...	,,	2½ ft.	,, ,,	,, ,,	,,	3	,,
,, ,, maculatum	Scar. & black	,,	3 to 4 ft.	,, ,,	,, ,,	,,	3	,,
,, columbianum ...	Yellow, red	,,	2½ ft.	Loam and leaf mould	Partial shade	,,	3	,,
,, ,, ...	Yell. & crim.	,,	3 ft.	,, ,,	Shady border	October	3	1 ft.
,, concolor	Scarlet, red...	,,	1 ft.	Good ordinary	Sunny border	Oct. to March	3	6 in.
,, cordifolium... ...	White	,,	3 ft.	Loam and leaf mould	Partial shade	,,	3	1 ft.
,, ,, Glehnii	,,	,,	,,	,, ,,	,, ,,	,,	3	,,
,, coridon	Citron yellow	June	1½ ft.	Good ordinary	Sunny border	,,	3	6 in.
,, croceum	Orange ...	,,	3 to 5 ft.	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Lilium Dalhansoni	Purple ...	June	4 ft.	Good ordinary	Sunny border	October March	3	6 in.
,, davuricum	Yell. red, bk.	,,	2 to 3 ft.	,, ,,	,, ,,	,,	3	,,
,, elegans	Scarlet & or.	,,	1 ft.	Loam and leaf mould	Partial shade	,,	3	2 to 3 ft.
,, ,, Alice Wilson	Yellow... ...	,,	,,	Sandy loam	Sunny borders	Oct. to Feb.	3	1 ft.
,, ,, atrosanguineum	Red, black ...	,,	,,	Loam and leaf mould	Partial shade	Oct. to March	3	2 to 3 ft.
,, ,, bicolor ..	Or.-red &yell.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, marmoratum aureus	Or., yellow, crimson	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Orange Queen	Orange ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, ornatum ..	Or., yellow & black	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Prince of Orange	Apricot yell.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, van Houttei	Crimson ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, venustum ..	Or., yellow ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Wilsoni ..	Yell. & purple	,,	,,	,, ,,	,, ,,	,,	3	,,
,, giganteum	White, purple	July	10 to 12 ft.	,, ,,	,, ,,	,,	3	,,
,, Grayi	Red & purple	,,	4 ft.	Peat and leaf mould	Shady, moist bed	,,	3	,,
,, Hansoni	Gold, yellow, black	,,	3 to 4 ft.	Good ordinary	Sunny border	,,	3	,,
,, Henryi	Or., yellow...	August	3 to 6 ft.	,, ,,	,, ,,	,,	3	,,
,, Humboldtii.. ..	Yellow, pur.	July	4 to 5 ft.	Loam and leaf mould	Partial shade	,,	3	6 in.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Lilium Humboldtii magnificum	Yellow & pur.	July	4 to 5 ft.	Loam and leaf mould	Partial shade	October March	3	6 in.
,, japonicum .. .	Ivory white	,,	2 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, colchesterense	Creamy yell.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Kelloggii	Pink ...	,,	2 to 3 ft.	,, ,,	,, ,,	,,	3	,,
,, kewense	Buff and creamy white	,,	4 to 6 ft.	,, ,,	,, ,,	,,	3	,,
,, Krameri	Pink ...	,,	2½ ft.	,, ,,	,, ,,	,,	3	,,
,, Leichtlinii	Cit. yellow & purple	August	3 to 4 ft.	,, ,,	,, ,,	,,	3	,,
,, longiflorum.. ..	White ...	,,	2 to 3 ft.	Good ordinary	Sunny border	,,	3	,,
,, ,, eximium (Harrisii)	,, ...	,,	3 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, Takesima grandiflorum	White & br.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Wilsoni ..	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Marhan	Or. & red br.	July	4 to 5 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, Ellen Willmott	,, ,,	,,	5 ft.	,, ,,	,, ,,	,,	3	,,
,, maritimum ..	Red & purple	,,	2 ft.	Loam and leaf mould	Partial shade	,,	3	,,
,, Martagon	Pur., red & car.	,,	3 ft.	Good ordinary	Sunny border	,,	3	,,
,, ,, album ..	White ...	,,	,,	Loam and leaf mould	Partial shade	,,	3	,,
,, ,, dalmaticum	Purple ...	,,	5 to 6 ft.	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Lilium Maximowiczii ..	Red ...	August	3 to 4 ft.	Loam and leaf mould	Partial shade	October March	3	6 in.
,, monadelphum ..	Yellow & red	June	4 to 5 ft.	,, ,,	,, ,,	,,	3	,,
,, szovitzianum ..	Yellow & bk.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, pardalinum	Or. & crimson	July	4 to 6 ft.	Peat and leaf mould	Shady, moist bed	,,	3	,,
,, ,, Bourgæ	Crim., or., & brown	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, californicum	Or. & maroon	,,	3 to 4 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, Johnsoni ..	Spotted or., etc.	,,	4 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, Michauxia..	Or. crimson	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, minor ..	Or. crimson, etc.	June	2½ ft.	,, ,,	,, ,,	,,	3	,,
,, Parryi	Yellow, chocolate	July	3 to 4 ft.	,, ,,	,, ,,	,,	3	,,
,, parvum	Yellow & red	June	4 to 5 ft.	,, ,,	,, ,,	,,	3	,,
,, philadelphicum ..	Yellow, mar., & scarlet	July	18 in.	,, ,,	,, ,,	,,	3	,,
,, pomponum verum	Scarlet ...	June	3 ft.	Good ordinary	Sunny border	,,	3	,,
,, pyrenaicum ..	Yellow & bk.	,,	2 ft.	,, ,,	,, ,,	,,	3	,,
,, Rœzlii	Or., red, & purple	,,	,,	Peat and leaf mould	Shady, moist mould	,,	3	,,
,, rubellum	Rosy-pink ...	,,	4 ft.	Loam and leaf mould	Partial shade	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
Lilium rubescens	Pinkish white	June	4 ft.	Peat and leaf mould	Shady, moist bed	October March	3	6 in.
,, speciosum album ..	White ...	August	4 to 5 ft.	Good ordinary	Sunny border	,,	3	,,
,, ,, album Krætzeri	White & gr.	Aug. & Sept.	5 to 6 ft.	,, ,,	,, ,,	,,	3	6 to 8 in.
,, ,, ,, novum ..	White, gold anthers	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, cruentum ..	Richly coloured	Sept.	4 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, macranthum ..	Deep rose ...	,,	5 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, magnificum ..	Ruby car., white	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Melpomene ..	Crim., purple	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Roseum superbum	Rose ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, punctatum ..	White & pink	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rubrum ..	White and crimson	,,	,,	,, ,,	,, ,,	,,	3	,,
,, sulphureum ..	Yell. & brown	,,	5 to 6 ft.	Loam and leaf mould	Partial shade	,,	3	,,
,, superbum	Or., crimson, & purple	July	6 to 7 ft.	Peat and leaf mould	Shady, moist bed	,,	3	,,
,, sutchuenense ..	Or., red, & purple	August	3 ft.	Loam and leaf mould	Partial shade	,,	3	,,
,, tenuifolium ..	Scarlet	June	18 in.	Good ordinary	Sunny border	,,	3	,,
,, testaceum	Yell., orange	July	4 to 6 ft.	,, ,,	,, ,,	,,	3	,,
,, Thomsonianum ..	Rose	May	1½ in.	Limestone and gravel	Partial shade	October	3	8 in.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Lilium tigrinum	Or., red, bk.	August	4 ft.	Good ordinary	Sunny border	Oct. to March	3	6 in.
,, ,, Fortunei gigantum	,, ,,	,,	5 ft.	,, ,,	,, ,,	October March	3	6 to 8 in.
,, ,, flore pleno ..	Double flowers	,,	4 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, splendens ..	Richly col. flowers	,,	,,	,, ,,	,, ,,	,,	3	,,
,, umbellatum ..	Crim. & yell.	July	2 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, Cloth of Gold	Orange, yell.	June	,,	,, ,,	,, ,,	,,	3	,,
,, ,, diadem ..	,, ,,	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, grandiflora	Orange, red	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Sappho ..	,, ,,	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Tottenhami	Yell. & red	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, Wallaceii ..	Rose and apricot	July	,,	,, ,,	,, ,,	,,	3	,,
,, washingtonianum .	White & lilac	,,	4 ft.	Loam & leaf mould	Partial shade	,,	3	,,
,, ,, purpureum	White & red	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Wallacei	Apricot ...	,,	2½ ft.	Good ordinary	Sunny border	Oct. to Feb.	3	1 ft.
*Lycoris aurea	Golden yellow	Aug.	2 to 3 ft.	Sandy loam, leaf mould	,, ,,	Sept.	4	6 in.
,, radiata	Red ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, squamigera ..	Rosy lilac ...	,,	,,	,, ,,	,, ,,	,,	4	,,
,, straminea	Yellow, pink, red	,,	,,	,, ,,	,, ,,	,,	4	,,
Merandera bulbocodium ..	Rosy lilac ..	Sept.	4 in.	Sandy loam	Partial shady border	August	3	3 in.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance
							in.	
Merandera Eichleri ..	Rosy purple..	May	3 in.	Sandy loam	Partial shady border	August	3	3 in.
,, caucasica ..	,, ..	,,	,,	,, ,,	,, ,,	,,	3	,,
Milla biflora..	White ...	Aug.	1 ft.	,, ,,	Sunny rockery	March	3	,,
Muscari armeniacum ..	Blue ...	March	6 in.	,, ,,	,, ,,	October	3	,,
,, botryoides.. ..	,, ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, album ..	White ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, candidum	White & rose	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, carneum	Flesh ...	,,	8 in.	,, ,,	,, ,,	,,	3	,,
,, ,, pallidum grandiflorum	Azure blue ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, comosum	Blue ...	April	1 ft.	,, ,,	,, ,,	,,	3	6 in.
,, ,, monstrosum	Bluish violet	,,	,,	,, ,,	,, ,,	,,	3	,,
,, conicum	Blue ...	,,	9 in.	Ordinary	Rockeries or grass	,,	3	,,
,, ,, Heavenly Blue	,, ...	,,	6 in.	,,	Grass, woodlands	,,	3	,,
,, Heldreichii ..	,, ...	,,	,,	Sandy loam	Sunny rockery	,,	3	,,
,, masseyanum ..	Rose ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, moschatum ..	Purplish viol't	,,	9 in.	,, ,,	,, ,,	,,	3	,,
,, ,, flavum	Yellow ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, neglectum magus	Blue black ...	March	6 in.	,, ,,	,, ,,	,,	3	,,
,, paradoxum ..	,, ,,	,,	,,	,, ,,	,, ,,	,,	3	,,
,, plumosum	Mauve ...	,,	,,	,, ,,	,, ,,	,,	3	,,
,, racemosum ..	Blue ...	April	,,	,, ,,	,, ,,	,,	3	,,
Narcissus Backhousei ..	Sulphur & lemon yellow	,,	1 ft.	Ordinary	Borders or grass	Sept. Oct.	4	,,
,, Barri	Sulphur & or. yellow	,,	,,	,,	,, ,,	,,	4	,,

Hardy and Half-hardy Bulbs.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Narcissus Bernardi ..	White & or.	May	1 ft.	Ordinary	Borders or grass	Sept. Oct.	4	6 in.
,, bicolor	Lemon yellow	April	,,	,,	,, ,,	,,	4	,,
,, biflorus	Pale yellow...	,,	,,	,,	,, ,,	,,	4	,,
,, Bulbocodium ..	Yellow ...	,,	6 in.	Sandy loam	Sunny rockery	,,	2	3 in.
,, ,, citrinus	Lemon yellow	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, conspicuus	Golden yell.	,,	,,	,, ,,	,, ,,	,,	2	,,
,, ,, monophyllus	White ...	Feb.	,,	,, ,,	,, ,,	,,	2	,,
,, ,, nivalis ..	Orange yell.	March	,,	,, ,,	,, ,,	,,	2	,,
,, Burbidgei ..	White, yell., red	,,	1 ft.	Ordinary	Grass or borders	October	4	6 in.
,, cyclamineus ..	Yellow ..	,,	6 in.	,,	,, ,,	,,	4	,,
,, gracilis	,, ..	April	1 ft.	,,	Borders	,,	3	,,
,, Humei	,, ..	,,	,,	,,	,,	,,	4	,,
,, ,, albidus ..	Wh. & yell...	,,	,,	,,	,,	,,	4	,,
,, ,, concolor .	Yellow ..	,,	,,	,,	,,	,,	4	,,
,, ,, Hume's Giant	Yell. prim. ..	,,	,,	,,	,,	,,	4	,,
,, incomparabilis..	Yellow ..	,,	,,	,,	Grass or borders	,,	4	,,
,, ,, albus ..	White yell..	,,	,,	,,	,, ,,	,,	4	,,
,, ,, aurantius	Yell. orange	,,	,,	,,	,, ,,	,,	4	,,
,, intermedius ..	,, ,,	,,	,,	,,	Borders	,,	4	,,
,, Johnstoni ..	Yellow ..	March	,,	,,	Grass or borders	,,	4	,,
,, Jonquilla ..	,, ..	April	,,	,,	,, ,,	,,	4	,,
,, juncifolius ..	,, ..	,,	6 in.	,,	Borders	,,	4	,,
,, Leedsii	,, ..	,,	1 ft.	,,	Grass or borders	,,	4	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Narcissus Macleayi ..	Wh. & yellow	April	8 in.	Ordinary	Grass or borders	October	4	6 in.
,, minor	Yellow ..	March	6 in.	Sandy loam	Rockeries	,,	3	3 in.
,, maximus ..	Golden yell.	,,	18 in.	Ordinary, heavy	Grass or borders	,,	4	6 in.
,, minimus.. ..	Yellow ..	Feb.	3 in.	Sandy loam	Rockery	,,	3	3 in.
,, moschatus ..	White ..	,,	6 in.	Ordinary	Grass, shade	,,	3	,,
,, ,, albicans ..	Wh. & prim.	,,	14 in.	,,	Grass or borders	,,	4	6 in.
,, ,, cernuus ..	Silvery white	,,	1 ft.	,,	Grass, shade	,,	4	,,
,, ,, ,, pulcher	Wh. & prim.	,,	16 in.	,,	,, ,,	,,	4	,,
,, Nelsoni	Wh. & yellow	May	1 ft.	,,	Grass or borders	,,	4	,,
,, odorus	Yellow ..	March	,,	Ordinary, moist	,, ,,	,,	3	3 in.
,, ,, Campernellii	,, ..	,,	18 in.	,, ,,	,, ,,	,,	3	,,
,, ,, rugulosus ..	,, ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, ,, maximus	,, ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, plenus ..	Double ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, poculiformis (montanus)	Silvery white	April	1 ft.	,, ,,	Borders	,,	4	6 in.
,, poeticus ..	White, red ..	May	,,	,, ,,	Grass or borders	,,	4	,,
,, ,, ornatus ..	Wh. & scarlet	,,	,,	,, ,,	,, ,,	,,	4	,,
,, ,, poetarum..	Wh. or. scar.	June	14 in.	,, ,,	,, ,,	,,	4	,,
,, ,, flore pleno .	Double ..	,,	,,	,, ,,	Borders	Sept.	4	,,
,, pseudo-narcissus	Yellow ..	March	1 ft.	,, ,,	Grass or woodlands	October	4	,,
,, ,, cambricus..	Wh. & yellow	,,	,,	,, ,,	,, ,,	,,	4	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Narcissus pseudo-lobularis	White and yellow	Feb.	7 in.	Ordinary moist	Grass or borders	October	4	6 in.
,, ,, narcissus lobularis plenus	Double ..	,,	,,	,, ,,	,, ,,	,,	4	,,
,, ,, pallidus præcox	Yell. & white	,,	1 ft.	,, ,,	Grass	,,	4	,,
,, ,, plenissimus	Double ..	,,	,,	,, ,,	,,	,,	4	,,
,, ,, rugilobus ..	Yellow ..	March	,,	,, ,,	Grass or borders	,,	4	,,
,, ,, scoticus ..	,, ..	Feb.	,,	,, ,,	,, ,,	,,	4	,,
,, ,, ,, plenus	Double ..	,,	,,	,, ,,	,, ,,	,,	4	,,
,, Tazetta	White and yellow	May	16 in.	Ordinary	Borders	,,	4	,,
,, triandrus albus..	White ..	March	6 in.	Sandy, gritty loam	Rockery; shade	Sept.	3	3 in.
,, ,, calathinus..	,, ..	,,	,,	,,	,, ,,	,,	3	,,
,, tridymus ..	Yellow ..	April	1 ft.	Ordinary	Grass or borders	October	4	6 in.
Northoscordium fragrans..	White ..	May	,,	,,	Sunny border	,,	3	3 in.
Ornithogalum arabicum ..	,, ..	June	18 in.	Sandy loam	Sunny rockery	,,	3	,,
,, aureum ..	Orange ..	,,	1 ft.	,,	,, ,,	,,	3	,,
,, nutans ..	,, ..	April	6 in.	Ordinary	Grass, borders, shade	,,	3	,,
,, montanum .	White ..	May	,,	,,	,, ,,	,,	3	,,
,, pyramidale	Wh. & green	July	2 ft.	,,	,, ,,	,,	3	6 in.
,, umbellatum	,, ,,	May	1 ft.	,,	,, ,,	,,	3	,,
Pancratium canariense ..	White ..	June	2 ft.	Sandy loam, leaf mould	Sunny border	,,	4	1 ft.

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Pancratium illyricum ..	White ..	June	1 to 2 ft.	Sandy loam, leaf mould	Sunny border	October	4	1 ft.
*Phædranasa chloracæa ..	Yellow ..	May	18 in.	,, ,,	,, ,,	Oct. or March	4	,,
,, schizantha ..	Verm., yell., green	,,	,,	,, ,,	,, ,,	,,	4	,,
,, ventricosa ..	Scarlet. ..	,,	,,	,, ,,	,, ,,	,,	4	,,
Polianthes tuberosa ..	White ..	Aug.	3 ft.	Ordinary ..	,, ,,	March	3	6 in.
Puschkinia scilloides ..	White, blue	April	6 in.	Sandy loam	Sunny rockery	Sept.	3	3 in.
Romulea Bulbocodium ...	Yellow, violet	June	,,	,, ,,	Sunny border	March	4	6 in.
,, columnœ	White, purple	,,	,,	,, ,,	,, ,,	,,	4	,,
,, ramiflora	Yellow, lilac	May	9 in.	,, ,,	,, ,,	,,	4	,,
Scilla amœna	Blue	,,	,,	,, ,,	,, ,,	Oct.	3	,,
,, bifolia	,, ..	March	,,	,, ,,	,, ,,	,,	3	,,
,, ,, alba	White ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, præcox ..	Blue ..	Feb.	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rosea	Rose ..	March	,,	,, ,,	,, ,,	,,	3	,,
,, festalis..	Blue ..	May	1 ft.	Ordinary ..	Grass or woodland	,,	3	,,
,, ,, alba	White ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rosea	Rose ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rubra	Red ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, hispanica (campanulata)	Blue ..	,,	8 in.	,, ,,	,, ,,	,,	3	4 in.
,, ,, alba ..	White ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, carnea ..	Rose ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, hyacinthoides ..	Lilac ..	,,	1 ft.	Sandy loam	Sunny rockery	,,	3	,,
,, italica	Blue ..	,,	,,	,, ,,	,, ,,	,,	3	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Scilla peruviana ,, ..	Blue ..	May	1 ft.	Sandy loam	Sunny rockery	Oct.	3	4 in.
,, ,, alba ..	White ..	,,	6 in.	Ordinary	,, ,,	,,	3	,,
,, sibirica	,, ..	Feb.	6 in.	,, ,,	Grass or borders	,,	3	3 in.
,, ,, alba	White ..	,,	,,	,, ,,	,, ,,	,,	3	,,
Sparaxis grandiflora ..	Vi., wh., crim.	May	1 to 2 ft.	Sandy loam	Sunny border	Sept.	3	,,
,, tricolor	Or., yell., pur., brown	,,	1 ft.	,, ,,	,, ,,	,,	3	,,
Sternbergia colchiflora ..	Yellow ..	Sept.	4 in.	Sandy loam, leaf mould	Sunny rockery	Aug.	3	,,
,, fischeriana ..	,, ..	April	6 in.	,, ,,	,, ,,	,,	3	,,
,, lutea	,, ..	Sept.	1 ft.	,, ,,	,, ,,	,,	3	6 in.
,, ,, major ..	,, ..	,,	,,	,, ,,	,, ,,	,,	6	,,
,, macrantha ..	,, ..	,,	6 in.	,, ,,	,, ,,	,,	3	3 in.
Tecophilæa cyanocrocus ..	Blue, white..	April	9 in.	Peat, leaf mould, sands	,, ,,	,,	4	4 in.
Tigridia Pavonia	Vi., yell., pur.	July	1 to 2 ft.	Sandy leam, leaf mould	Sunny borders	April	3	6 in.
,, ,, alba ..	White, car.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, aurea ..	Gold, choc.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, grandiflora.	,, ,, etc.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, conchiflora.	Yell., red	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, immaculata	White ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, lilacina ..	Crim., mag., etc.	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rosea ..	Rose & white	,,	,,	,, ,,	,, ,,	,,	3	,,
,, Pringlei	Scar. crim. ..	,,	,,	,, ,,	,, ,,	,,	3	,,
Triteleia—*See* Brodiæa.								

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Tritonia crocata	Orange ..	June	2 ft.	Ordinary, well drained	Sunny borders	Nov. or April	3	3 in.
,, crocosmiæflora ..	Or., scarlet ..	July	,,	,, ,,	,, ,,	,,	3	,,
,, Pottsii	Ver., scarlet	,,	,,	,, ,,	,, ,,	,,	3	,,
Tulipa acuminata	Yell., red ..	May	17 in.	Ordinary rich	Grass or borders	Oct. or Nov.	4	6 in.
,, biflora major ..	Creamy wh.	,,	8 in.	,, ,,	,, ,,	,,	4	,,
,, billietiana	Yell., red ..	,,	18 in.	,, ,,	,, ,,	,,	4	,,
,, clusiana	Rose, red, violet	,,	8 in.	,, ,,	,, ,,	,,	4	,,
,, Didieri	Cr., indigo, prim.	,,	16 in.	,, ,,	,, ,,	,,	4	,,
,, ,, alba	White ..	,,	,,	,, ,,	,, ,,	,,	4	,,
,, ,, lutescens ..	Yellow, black	,,	,,	,, ,,	,, ,,	,,	4	,,
,, elegans	Cr., ver., yell.	,,	14 in.	,, ,,	,, ,,	,,	4	,,
,, ,, alba	Wh., car. ..	,,	,,	,, ,,	,, ,,	,,	4	,,
,, ,, variegata ..	Crimson, gold	,,	,,	,, ,,	,, ,,	,,	4	,,
,, gesneriana	Scar., blk ..	,,	2 ft.	,, ,,	,, ,,	,,	4	,,
,, ,, aurantiaca	Sc., grn., gold	,,	18 in.	,, ,,	,, ,,	,,	4	,,
,, ,, lutea ..	Yellow ..	,,	16 in.	,, ,,	,, ,,	,,	4	,,
,, ,, rosea ..	Ro., car., bl.	,,	17 in.	,, ,,	,, ,,	,,	4	,,
,, ,, spathulata	Cr., scar., bl.	,,	16 in.	,, ,,	,, ,,	,,	4	,,
,, ,, stella ..	Car., bl., wh.	,,	,,	,, ,,	,, ,,	,,	4	,,
,, Greigii	Or., scarlet, yell., black	,,	9 in.	Sandy loam	Sunny rockery	,,	4	,,
,, ,, aurea ..	Yellow ..	,,	,,	,, ,,	,, ,,	,,	4	,,
,, Haageri	Red.yell.,blk.	,,	6 in.	Ordinary rich	Grass or borders	,,	4	,,
,, kaufmanniana ..	White, car., yellow	,,	8 in.	,, ,,	,, ,,	,,	4	,,

Hardy and Half-hardy Bulbs.

Name	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Tulipa kaufmanniana aurea	Yell., scarlet	May	8 in.	Ordinary rich	Grass or borders	Oct. or Nov.	4	6 in.
,, kolpakowskyana ..	Yellow, rose	,,	8 to 12 in.	,, ,,	,, ,,	,,	4	,,
,, Korolkowi	Red and black	,,	6 to 8 in.	,, ,,	,, ,,	,,	4	,,
,, linifolia	Scarlet	,,	7 in.	,, ,,	,, ,,	,,	4	,,
,, macrospila	Cr., yell., blk.	,,	18 in.	,, ,,	,, ,,	,,	4	,,
,, maculata	Cr., red, yell., black	,,	20 in.	,, ,,	,, ,,	,,	4	,,
,, mauriana	Scar., yellow	,,	10 in.	,, ,,	,, ,,	,,	4	,,
,, michelliana	Red and black	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
,, oculis solis	Cr. and black	,,	16 in.	,, ,,	,, ,,	,,	4	,,
,, orphanidea	Yellow, red..	,,	18 in.	,, ,,	,, ,,	,,	4	,,
,, ostrowskyana ..	Red and black	,,	15 in.	,, ,,	,, ,,	,,	4	,,
,, persica	Yell., bronze	,,	6 in.	,, ,,	,, ,,	,,	4	,,
,, platystigma.. ..	Magenta, red	,,	15 in.	,, ,,	,, ,,	,,	4	,,
,, præstans	Orange, red..	,,	14 in.	,, ,,	,, ,,	,,	4	,,
,, pulchella	Cr., car., rose	,,	3 to 6 in.	Sandy loam	Sunny rockery	,,	4	,,
,, retroflexa	Yellow ..	,,	18 in.	Ordinary rich	Grass or borders	,,	4	,,
,, saxatilis	Rose, yellow.	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
,, Sprengeri	Or., scarlet ..	June	18 in.	,, ,,	,, ,,	,,	4	,,
,, stellata	Yellow, rose.	May	1 ft.	,, ,,	,, ,,	,,	4	,,
,, suavolens	Scar., yellow	,,	6 in.	,, ,,	,, ,,	,,	4	,,
,, sylvestris	Yellow ..	,,	1 to 2 ft.	,, ,,	,, ,,	,,	4	,,
,, triphylla	Orange ..	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
,, undulatifolia ..	Green, crim., black	,,	6 to 9 in.	,, ,,	,, ,,	,,	4	,,

Name.	Colour.	Flowering Period.	Height.	Soil.	Position.	Time to Plant.	Depth.	Distance.
							in.	
Tulipa viridiflora	Green & yell.	May	16 in.	Ordinary rich	Grass or borders	Oct. or Nov.	4	6 in.
,, vitellina	Yellow ..	,,	1 ft.	,, ,,	,, ,,	,,	4	,,
Uvularia grandiflora ..	Yellow ..	,,	,,	Peat	Moist shady border	October	3	3 in.
Uvularia perfoliata ..	Yellow ..	,,	,,	,,	,, ,,	,,	3	,,
*Watsonia meriana ..	Purple, scar.	,,	2 ft.	Peat, leaf mould, loam	Sunny border	,,	3	4 in.
,, ,, coccinea ..	Scarlet ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, iridiflora..	White ..	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, O'Brieni..	,, ..	July	3 ft.	,, ,,	,, ,,	,,	3	,,
,, ,, rosea-alba.	Pink & white	,,	,,	,, ,,	,, ,,	,,	3	,,
,, ,, rosea ..	Rose	,,	,,	,, ,,	,, ,,	,,	3	,,
Zephyranthes atamasco	White ..	July	6 in.	Sandy loam	Sunny rockery	Sept.	3	3 in.
,, Andersoni ..	Red and gold	June	,,	,, ,,	,, ,,	,,	3	,,
,, candida ..	Wh. and rose	Sept.	,,	,, ,,	,, ,,	,,	3	,,
,, carinata ..	Rosy pink ..	June	,,	,, ,,	,, ,,	,,	3	,,
,, rosea ..	Rosy red ..	Sept.	,,	,, ,,	,, ,,	,,	3	,,
,, tubispatha ..	White ..	June	,,	,, ,,	,, ,,	,,	3	,,
,, verecunda ..	Rosy White..	August	,,	,, ,,	,, ,,	,,	3	,,

Part II.—BULBS IN ROOMS, Etc.

CHAPTER I.

CULTURE IN WATER.

One of the most simple and interesting ways in which to grow many kinds of bulbous-rooted plants is in water. Bulbs lend themselves admirably to this system of culture. Unlike fibrous-rooted plants, they store up in the scales of the bulbs during the preceding year the principal food for forming and developing the flowering spikes the next year, and only need the agency of water to assist them to attain full perfection of growth. But bulbs grown in water cannot, like those grown in soil, collect a fresh store of food to replace that exhausted by the development of leaves and flowers, and so provide the material that will yield similarly fine foliage and flowers the next year. In a word, a bulb grown in water exhausts itself the first year, and is practically useless for similar culture the second year. But, if we plant the bulbs out in the garden they eventually garner a fresh store of material that will the next year produce foliage and flowers of a less robust type. Hence, it is necessary, if we want to grow bulbs successfully in water, to procure fresh ones every year, bulbs replete with a full reserve of food equal, with the addition of water only, to yielding fine foliage and

handsome flowers. Everyone, therefore, who wishes to start growing bulbs in water must buy newly-imported ones to ensure success in this novel method of flower culture.

Vessels for Water Culture.—Special glasses for the purpose are sold by all dealers in glass and by florists. There are tall and short kinds made of plain crystal glass, or of shades of blue, purple, and amber, either plain or decorated. Personally, we prefer the plain crystal type, as there is then no colour to conflict with that of the flower. These glasses have a cup or depression at the top to receive the bulb. Smaller sizes are also to be obtained for crocus bulbs. There are also many kinds of small opaque ornamental vases suitable for growing single bulbs of narcissi, crocuses, and squills. The advantage of clear glasses is, you can easily perceive the method of root formation, but, where this is of little interest, opaque vessels will do just as well.

Water.—Rain water is preferable to ordinary spring water, because it contains more soluble plant food, and is in every way better suited to the requirements of the growth of plants. Owing to its organic contents, it is, however, apt to exhale an unpleasant smell, and, to guard against this, it is usual to put a few lumps of charcoal inside each glass. Charcoal keeps the water sweet, absorbs some of the organic matter, and when the roots come in contact therewith they are able to absorb it, and benefit considerably thereby. Ordinary spring water may, of course, be used, but it will not give such good results as rain water.

Bulbs for Water Culture.—Hyacinths, tulips, narcissi, snowdrops, scillas, and crocuses may be grown in water in the glasses or vases mentioned. In all cases those with single flowers usually do the best, and it is most im-

perative that bulbs of the finest quality only should be selected for the purpose. Bulb dealers usually make a point of selling bulbs specially selected for the purpose. Snowdrops, scillas, and crocuses do not, of course, require large vessels, only those with a neck or cup just large enough to hold a single bulb. See selections on p. 170.

Planting the Bulbs.—All the bulbs just mentioned should be procured in September or October. Fill each vessel with water so that, when the bulb is placed in position, the water will nearly, but not quite, touch its base, adding also the charcoal previously referred to. When the bulbs are placed in position put the glasses in a cool, dry, and perfectly dark cupboard, and let them remain there until roots have formed a couple of inches or so long. Bring them to a cool room, and stand them in subdued light to allow the blanched growths to assume a green tinge, when remove to a light, sunny window. Carefully watch the water, the supply of which will be gradually lessened by absorption into the plant. Add a fresh supply as needed to the base of the bulbs. Tall flowers, like those of the hyacinth and narcissus, will need support when they get a few inches long. Seedsmen sell properly-made wire supports for bulbs grown in water; but, failing these, a piece of stout wire forced into the bulb and then secured by a strand of bast or yarn will answer the purpose well. After flowering, the bulbs are only of service for planting out in the garden.

Special Hints.—On no account bring the bulbs out of the dark cupboard until they have made roots two inches long. If you do the flower spikes will be stunted in growth. If a hyacinth spike be slow in ascending, roll a piece of paper round it, not tightly, but so that it does not touch the spike. This will cause the spike to push upwards, and then the paper can be removed. Remove any offsets that form on the sides of the bulbs.

Bulbs in Bowls.—Bulbs may also be grown in shallow bowls containing water and a few pebbles. The Chinese Sacred Lily (Narcissus tazetta) is usually grown thus. A layer of pebbles should be placed on the bottom of the bowl, and enough rain water added to nearly but not quite cover them. Several bulbs have then to be placed on the pebbles, and the bowls put in a dark position until roots form; then be brought to the light, and treated as advised for those in glasses. The roots will ramify among the pebbles, and in that way make the bulbs fairly firm. The water supply should be constantly maintained to the height of the pebbles. Any of the narcissi or hyacinths may be grown in the above manner.

CHAPTER II.

CULTURE IN MOSS FIBRE.

A NOVEL and popular way of growing bulbs for home decoration is the now fashionable one of cultivating them in specially-prepared moss fibre, in fancy bowls. The method is so simple and easy to carry out that the merest novice cannot fail to succeed in growing bulbs to perfection if the following details are carefully observed.

Bowls or Vases.—Special kinds for the purpose can be purchased at china or earthenware dealers, at prices varying from a shilling to five or eight shillings each. Those made from the famous "Doulton" ware are very pretty, and suitable for growing from one to three or more bulbs in each. Those who prefer a more decorative type will find an ample choice in the fancy Japanese style.

They are made in the following sizes: 2½in., 4in., 5½in., 7in., 8in., 9in., 10in., and 12in. The first size is suitable for small bulbs like crocuses, snowdrops, squills, and chionodoxas; the next one (4in. or 5in.) for one bulb of hyacinth or three of narcissi or tulips; and the others for growing a number of bulbs.

The Compost.—This should consist of two parts of moss-fibre and one part each of finely-ground sea-shell and charcoal. But those who do not want to be bothered with the trouble of buying the ingredients separately, and mixing them, may purchase from any of the bulb dealers a specially-prepared mixture of the above materials with the addition of artificial manures for about 3s. 6d. per bushel.

Especial care should be taken in seeing that the compost is in a thoroughly moist condition before it is placed in the bowls. If this precaution be not taken it will be practically impossible to add the requisite moisture afterwards, as, if the material once gets dry, it will not readily absorb water. It is advisable, therefore, to spread the compost out thinly; then sprinkle it with water, and mix together. The proper condition of moisture can be ascertained by squeezing the compost in the hand. If, as a result, the moisture oozes out slightly through the fingers, then it is in a suitable state to use, not otherwise. A bushel of compost will suffice for about twenty-four bowls of six-inch diameter. Some lumps of charcoal are also essential to serve as drainage, and a half-inch layer of this should be put in each bowl prior to adding the compost.

General Treatment.—Great care must be taken not to over-water the fibre so as to make the latter sour. Give just enough to make it fairly moist. If by any chance too much water has been applied, tilt the bowl on one side to allow superfluous moisture to drain away. Nor should cold water be given, as this would chill the roots and cause the flowers to develop improperly. Stand

near to a light window, and turn the bowl round a little every day, so that all sides of the plant get sun and light in due course. After flowering, the bulbs should be carefully planted out in a spare corner in the garden, where in future years they may yield flowers for cutting. For culture in bowls fresh bulbs should be procured annually, and these ought also to be of the finest quality. See also the remarks regarding supporting the flower spikes on p. 87.

Hyacinths in Moss.—Hyacinths may also be grown in moss, as follows: Procure ordinary moss from a damp hedge, bank, or wood; tie this into a ball about eight inches or so in diameter, then arrange hyacinth bulbs all round, adding moss to fill the space between the bulbs, and interlacing this with string as the work proceeds to keep the bulbs in position. When finished, run a stout piece of wire through the centre, and form a loop at one end, so that the ball can be hung up in a cool, dark cellar. Before hanging up the ball dip it in water. As soon as growth has begun, bring the ball to a light window, and dip in water two or three times a week. In due course the bulbs will send forth spikes radiating in every direction, and you will have a distinct floral novelty. Crocuses and tulips could be grown in a similar way, only the ball should be smaller in size.

Kinds to Grow.—It is possible to grow with great success a number of kinds. Hyacinths do extremely well in moss-fibre. White Roman hyacinths, for example, may be had in flower at Christmas time and the New Year by planting them in August. Snowdrops and scillas, also chionodoxas planted at the same time will flower early in January.

The large-flowered Dutch hyacinths, likewise the dainty little miniature kinds, are incomparably pretty when in flower. We particularly recommend the latter, which only grow about six inches high, especially the varieties

Beauty, Canary Bird, Fire King, Loveliness, Blanche, and Winter Cheer. These come into flower about February.

Narcissi, including daffodils, also thrive well in moss-fibre. The Paper White Narcissus, if planted in August, will flower at Christmas; Polyanthus narcissi, as Grand Monarque and Gloriosa; the dainty single and double fragrant jonquils; the pretty, small-flowered cyclamineas, and Triandrus albus; such trumpet varieties as Empress, Emperor, Golden Spur, Henry Irving, Madame de Graaff, and Johnstoni, Queen of Spain; and Barri conspicuus, Aspasia, Elvira, Sir Watkin, Mrs. Langtry, Evangeline, and Princess Mary among other types.

Then, of tulips, the Darwin section succeeds admirably in moss-fibre. Their ample foliage and their stately blooms of many artistic tints show to great advantage in bowls. Clara Butt, Douden, Mrs. Farncombe Sanders, Pride of Haarlem, White Queen, and Gipsy Queen are exceedingly pretty sorts. Single tulips of the Duc Van Thol flower early; White Swan, Pink Beauty, Canary Bird, and Grace Darling are other good singles. Of doubles, El Toreador, Murillo, Princess Beatrice, Duke of York, and Blue Flag are attractive sorts. Indeed, any of the varieties described in the chapter of selections further on are adapted for culture in bowls.

Crocuses are particularly well suited for bowl culture. King of the Whites, David Rizzio, King of the Blues, and Cloth of Gold are very showy sorts for growing either in mixture or separately.

Other interesting bulbs that may be grown in this fashion are the Chequered Fritillary (Fritillaria meleagris), a kind with narrow, graceful foliage and quaintly marked flowers; Iris reticulata Krelaagei, a dainty bulb for flowering in January or February; Chionodoxa luciliæ and sardensis, blue, blooming early in the year; Muscari botryoides, blue, and its variety alba, white, also flowering early; and Scilla sibirica, blue. There is no doubt that

many other kinds of spring-flowering bulbs might be successfully grown thus if they were tried.

Planting.—Having placed half an inch of charcoal in each bowl, proceed with the planting as follows: For large bulbs like those of hyacinths, narcissi, and tulips, put about an inch of compost over the charcoal and press it down firmly. On this arrange the bulbs about half an inch apart, then fill in the intervening spaces with compost, pressing it firmly down, afterwards covering the bulbs with compost nearly to their tips. For smaller bulbs add sufficient compost over the charcoal so that when the bulbs are placed thereon their tips reach to within half an inch of the rim of the bowls. Place them a quarter of an inch apart, fill in with compost to within half an inch of the top of the bowls, and press it down evenly and firmly. In the case of snowdrops, scillas, and chionodoxas, these may be grown in mixture or separately, as all three flower about the same time.

The next step is to place the bowls in a cool, dark cellar, or some other equally cool, dark spot, and let them remain there for about eight weeks, by which time they will have rooted sufficiently to be safely brought into the light. Of course, some, as the Roman hyacinths, snowdrops, and the irises, may have become well rooted before then, and have commenced to make new growth freely. In this event, bring the bowls to the light at once. For the first few days it is not wise to expose the bulbs fully to the light, but to place them in semi-light until the growth assumes a greenish tinge. As a rule no water is required until the bulbs are brought into the room, but, in the event of the fibre becoming dryish, moisten it moderately with chilled rain water. Ordinary water may be used failing a supply of the latter. On no account place the bowls in dry, warm cupboards, as the dry air would absorb the moisture from the fibre, and the warmth stimulate the bulbs to put forth leaves and flowers before new roots had formed, and the result would be dis-

astrous. It is very essential that coolness and darkness should be the prevailing conditions until root action has actively commenced. Moreover, it is important not to have to supply water to the fibre until plenty of roots have formed to imbibe it, otherwise the stagnant moisture will render the compost sour, and prevent healthy root formation. If the foregoing instructions are implicitly followed the bulbs will not only form an abundance of roots, but also yield good sturdy stems, and fine flowers. Very warm rooms are not conducive to successful growth; the flowers are apt to wither or to develop imperfectly; therefore grow them as far as possible in cool rooms.

CHAPTER III.

CULTURE IN WINDOW BOXES.

Bulbs are excellent subjects to grow in boxes on the window ledge, on roof gardens, and on balconies. It is interesting to watch the development of their growth during the early period of the year, and very pleasant to behold their bright blossoms in the early days of spring. To the town gardener, especially, bulb culture should particularly appeal as a means of beautifying the dull surroundings of his home and yielding congenial occupation in attending to the simple cultural requirements of the plants.

Bulbs to Grow.—Any of the numerous varieties and kinds of hyacinths, narcissi, crocuses, snowdrops, scillas, muscaris, chionodoxas, and tulips are adapted for box culture. We have also seen Spanish irises and gladioli do very well indeed in window-boxes; in fact, there is no reason why the owner of a roof garden should not grow

any of the hardy bulbs described for a cold house with equal success in window boxes, or on roofs or balconies.

How to Grow Them.—The boxes should be such as are used for ordinary summer plants. The soil, indeed, that has been used for summer plants may be used for bulbs. It will only be necessary to fork it up, add a handful of bone-meal and two or three handfuls of decayed manure or horse droppings broken up fine, mixing the whole thoroughly. In September or October the bulbs may then be planted. For window-boxes an edging of crocuses may be planted near the outer side; then a row of tulips, with one of hyacinths behind. Or, scillas or chionodoxas and snowdrops may be planted alternately as an edging; next these a row of muscaris, and a row of narcissi at the back. Another pretty way is to plant hyacinths or tulips only in each box, and to place between these polyanthuses, double daisies, forget-me-nots, or wallflowers. In this case the bulbs will flower first, and the other plants follow on, providing a display of floral beauty from March to June. If summer-flowering bulbs are grown, such as English or Spanish irises or gladioli, similar spring-flowering plants might be grown between the bulbs. After the former have flowered they could be replaced by seedling nasturtiums or petunias, to flower in company with the bulbs and afterwards. The advantage of growing other plants between the bulbs is the greater variety and longer duration of floral beauty, and the pretty effect of an attractive carpeting for the soil of the boxes. On balconies or roof gardens larger boxes may be used than for window-sills. They may be of any length or width to suit the situation, but the average depth should be nine inches. Holes should be bored freely in the bottoms, and the ends stood on bricks or narrow strips of wood to permit water to drain away and air to have access to the bottom of the boxes. Here, again, the boxes may be edged with scillas, crocuses, snowdrops, chionodoxas, or muscaris, followed behind with rows of

tulips, hyacinths, or narcissi. Between the larger bulbs any of the plants previously described may be planted, to flower after the bulb; and, in the case of irises or gladioli, violas or pansies may be used as carpeting plants. For all the foregoing bulbs a compost of two parts loamy soil and one of equal proportions of decayed manure, leaf-mould, and coarse silver sand, may be used. Small bulbs like crocuses, etc., should be planted an inch deep and one to two inches apart; and larger ones, like hyacinths two inches deep and three inches apart.

General Treatment.—After planting, cover the surface of the soil with about an inch of cocoanut-fibre refuse. Give no water till growth begins, and then only if the surface soil appears dry. When in full growth more water will be needed. As soon as the flower stems show clearly, the soil may be watered with a solution of guano or fertiliser, using an ounce to a gallon of water. Apply once a week till the flowers open, then cease. Tall spikes or stems should be supported with a neat stake, otherwise wind may cause them to snap off. After flowering continue to give water till the foliage turns yellow; then the bulbs may be removed from the soil, laid out in a cool place to dry, and be stored away. As a rule, bulbs that have been grown in the limited area of a window-box do not collect sufficient new food to develop a strong embryo spike within the bulb before the foliage dies; hence, if used a second year, the spikes or flowers will naturally be smaller than those of the first year. It is, therefore, better to buy new bulbs every autumn, and to either plant the old ones out in the garden, or, failing a garden, to give them to some friend who has one, to plant in his borders. We may add, for the information of the novice, that it is not necessary to place the boxes in a dark place, or to cover them, except as advised. Being in the open air, they will grow best under the natural conditions of light and air.

Part III.—BULBS UNDER GLASS.

CHAPTER I.

HOTHOUSE.

In this chapter we include those bulbs and tubers which require a fairly warm temperature all the year round to grow them to perfection. The structure in which they should be grown is commonly known as a hothouse, or stove, with a day temperature of 65 to 70 deg. in winter, 70 to 75 deg. in spring, 75 to 80 deg. in summer, and 70 to 75 deg. in autumn; also a night temperature of 60 to 65 deg. in winter, 65 to 70 deg. in spring, 70 to 75 deg. in summer, and 65 to 75 deg. in autumn. While the foregoing are the average temperatures for such a structure, it is not always essential that they should be adhered to strictly, since some plants may do well in a slightly lower temperature, and where such is the case the fact will be duly mentioned in connection with each genus of plants. It is essential, moreover, to start some bulbs and tubers in the hothouse, removing them to a cooler temperature later on, and this fact also will be duly noted as we proceed. So much by way of preface, and now we will deal with each genus separately.

Achimenes.—These are South American tuberous-rooted plants, flowering chiefly in summer, growing one

to two feet high, and succeeding in pots or hanging baskets. They are exceedingly showy plants, and by no means difficult to grow by those who can command the necessary heat. They make their growth during spring and summer, gradually lose their foliage in autumn, and remain dormant during the winter.

The small scaly tubers require to be planted an inch apart and half an inch deep in shallow boxes or pans filled with a compost of equal parts of leaf-mould and loam, with a fair amount of sand. Do this in February or March in a temperature of 65 to 70 deg. When the shoots are an inch or so high, transplant the tubers two to three inches apart in 6in. or 8in. pots, 12in. pans, or in hanging baskets, using a compost of two parts of good fibrous loam and one part of equal proportions of leaf-mould, well-rotted manure, and silver sand. If to be grown in baskets, line the interior with moss, place the young plants at intervals of two or three inches round the sides and through the moss, gradually fill up with compost, and plant others on the top. As soon as the shoots are four to six inches high nip off the points to cause side growths to form. Keep in the same temperature, water freely as growth proceeds, give weak liquid manure once or twice a week, and when the shoots are eight inches high, support them with stakes. As soon as the plants come in flower remove to a cooler house. After flowering, gradually withhold water, and when the foliage has faded, either store the pots on their sides in a warm house till spring, or remove the tubers and store them in silver sand in a similar place till repotting time. Easily increased by seeds sown in a temperature of 65 to 75 deg. in spring, to flower the next season. The tubers multiply very rapidly.

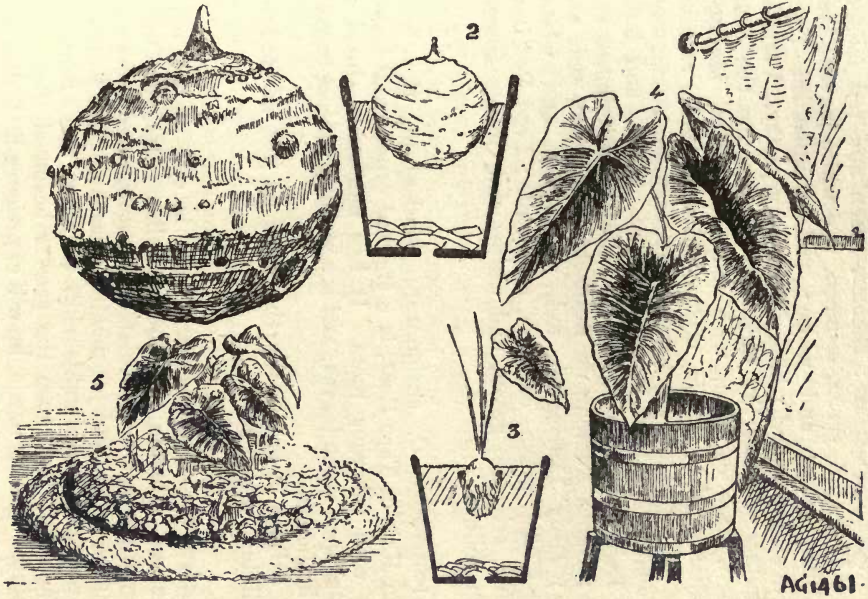
As regards species, the best are: Coccinea, scarlet; longiflora, violet; longiflora alba, white; longiflora major, violet; grandiflora, scarlet; and patens, violet. Showy varieties are: Admiration, purple; Alba maxima, white; Aurora, red; Firefly, crimson; Margarita, white; Ambrose

Verschaffelt, white; carminata, splendens, rose; Hendersoni, orange; Mauve Queen, mauve; Masterpiece, purple and white; and Rosy Queen, rose.

Amaryllis.—See Hippeastrum.

Caladium.—Handsome ornamental-leaved tuberous-rooted plants, natives of tropical America, requiring a high temperature and a moist atmosphere to grow them really well. Few plants possess such richly-coloured leaves as the Caladium. They require great care and skill to produce the foliage to the highest perfection. The plants make their growth in spring and summer, gradually lose their foliage in autumn, and go to complete rest in winter.

Their culture should commence in January or early in February. The tubers should then be taken out of the old soil and repotted in pots just large enough to accommodate them. The compost throughout should consist of two parts loam and one part each of peat, leaf-mould, and coarse silver sand. After potting plunge the pots to their rims in cocoanut-fibre refuse over a hotbed, or in a propagating frame heated to a temperature of 75 to 80 deg. Give no water, but syringe the pots two or three times daily. As soon as growth begins, apply water to the soil, increasing the supply as growth proceeds. When the small pots are filled with roots transfer the plants, according to size of tuber and habit of growth, to 6in. or 8in. pots, or even a larger size if specially big specimens are desired. Give plenty of water, maintain a moist atmosphere and a uniform temperature of 75 to 85 deg., shade from sun, and give weak liquid manure occasionally to fully-grown plants. If any flower stems form remove them. The three main points to consider are: plenty of heat, and moisture, and shade from sun. In autumn, when the leaves begin to fade, gradually withhold water, keeping the soil quite dry after the foliage is dead. From then to spring lay the pots on their sides under the staging in the hothouse.



CULTURE OF CALADIUMS.

1, The tuber. 2, The tuber potted. 3, The tuber started into growth. 4, Plant in full growth. 5, Plant used as a centre for the sub-tropical bed.

Propagation is effected by division of the tubers into as many parts as are furnished with eyes or shoots. Do this when starting the tubers.

The best species are: Bicolor, green and red foliage; bicolor Chantinii, green, crimson, and white leaves; Marmoratum, green and white; and Humboldtii (Syn. argyrites), green and white, dwarf, very pretty. Varieties are numerous, but the following are perhaps the best: Carmen, dark carmine, with red veins; Mrs. McLeod, vermilion-scarlet; Louis d'Or, white ground, carmine veins, yellow edges; Duchess of Fife, carmine, rose, green, and white; Princess Beatrice, violet, green, and blue; Rose Laing, crimson and white; Illustrious, crimson and white; Baron Adolphe de Rothschild, carmine, red, and green; Lady Dorrington, red, pink, grey, and white; Silver Cloud, green, carmine, and white; Lord Penrhyn, carmine, crimson, green, and white; and Golden Queen, golden yellow.

Colocasia.—C. antiquorum esculentum, the West Indian Kale or Taro Root, is a tropical ornamental-leaved plant with tuberous roots. It has handsome shield or heart-shaped green leaves, and is a striking subject to grow in a hothouse.

Its culture is practically the same as just advised for Caladiums, which see.

Eucharis.—The Eucharis Lily is one of the most chaste and valuable of hothouse bulbs. Its pure white blossoms are much appreciated in autumn and winter for table decoration, and for making wreaths. The Eucharis Lily requires considerable skill to grow and flower it satisfactorily, but, once the grower becomes thoroughly acquainted with its needs, he will experience little difficulty in securing a succession of flowers throughout the year. Coming from South America, this lily naturally requires a high temperature to grow it successfully.

The secret of flowering the Eucharis Lily successfully is to give it generous culture in a high temperature, and then rest the bulbs for a couple of months in a lower temperature. The ideal compost consists of two parts of fibrous loam, one part of peat, and one of equal proportions of well-rotted manure and silver sand. Repotting may be done in spring, or directly after flowering. It is usual to grow half a dozen good-sized bulbs in an 8in. or a 10in. pot. Put an inch of crocks in each, then fill the pot two-thirds with compost pressed down firmly, arrange the bulbs on this, and add enough soil to just cover the bulbs, but leaving the apex free. Very firm potting is essential. After potting plunge the pots to their rims in a hotbed of leaves or fibre, in a temperature of 65 deg. by night and 75 deg. by day. Water very sparingly till growth becomes active; then do so freely. When in full growth lift out of the plunging bed and place close to the glass, but shade from bright sunshine. Syringe the foliage twice a day, and see the roots have plenty of water. As soon as the ample foliage is observed to be fully developed, remove the plants to a temperature of 55 deg. by night and 65 deg. by day; gradually withhold water till the leaves begin to droop; then give a moderate amount of water, and withhold again till the leaves flag. Proceed with this code of treatment for two months; then remove the plants to a temperature of 65 deg. by night and 75 deg. by day, and commence to water thoroughly and syringe the foliage daily. In a few weeks flower stems will begin to push up, and then apply liquid manure once or twice a week. After flowering, repot if large specimens are desired; if not, grow on in the same pots for a couple of years or so. In any case, encourage the plants to grow freely, rest them in due course, and start to grow again and flower as previously advised. By having three or four sets of plants, and treating them alternately as above advised, it will be possible to have flowers all the year round. The Eucharis is an evergreen plant, so never

loses its leaves entirely except when in bad health. It is specially liable to be infested with mealy bug, red spider, and thrips, the remedies for which will be found elsewhere. A mite also infests the roots. Increased by offsets at potting time.

The species and hybrids are as follows: Candida, grandiflora (Syn. amazonica), Mastersii, Sanderi, Stevensii, Lowi, and Moorei. The two best are candida and grandiflora. All are white-flowered, and grow about one to two feet high.

Eurycles.—A genus of white-flowered bulbous plants, natives of Queensland, and requiring hothouse culture. They are somewhat similar to the Pancratiums, and flower in spring.

The bulbs require to be grown singly in 6, 8, or 10in. pots, according to size, in a compost of three parts loam, one part leaf-mould, and plenty of coarse sand. Pot firmly. February is the best time to repot. After potting plunge the pots as advised for Eucharis, and keep the roots well supplied with moisture. In autumn gradually withhold water, and keep nearly dry all the winter. The temperature during the growing season should be 65 to 75 deg., and 55 deg. in autumn and winter. Increased by offsets.

The only species are Cunninghami and sylvestris, both white-flowered and growing one foot high.

Gesnera.—The Gesneras are tuberous-rooted plants, natives of South America, growing about a foot high, and bearing tubular-shaped, brilliantly-coloured flowers at various seasons of the year. Many of the kinds, too, have attractively-coloured velvety foliage. They will all succeed in an ordinary stove temperature.

By potting at different periods of the year a long succession of flowers may be obtained. Thus, tubers potted and started to grow in March would flower in June;

those started in May would blossom in September; and those, again, potted in June would flower during the winter. At whichever period the potting is done, a compost of two parts fibrous peat, one part loam, one part leaf-mould, one part decayed manure, and a liberal amount of silver sand should be used. The tubers may be potted singly in 5in. pots, or three in a 6in. pot. Bury the tubers about a quarter-inch deep. Some growers place the tubers an inch or so apart in shallow boxes to start them to grow; then transfer to the pots. Place the pots in a temperature of 65 deg., and water very cautiously till growth becomes active; then give a free supply. To ensure a dwarf habit grow the plants not too far from the glass. When the flowers begin to appear apply weak liquid manure occasionally. Shade from bright sunshine. After flowering gradually withhold water, and when the foliage withers keep quite dry till repotting time arrives. Store the pots on the sides under the staging in the stove. Propagation is effected by seeds or cuttings in spring; also by division of the tubers at potting time.

The leading species and varieties are: Cardinalis, crimson, scarlet, and white (October); Donklarii, red and yellow (July); Douglasii, red and yellow (September); exoniensis, scarlet, yellow, and orange; Leopoldii, scarlet (July); Lindleyii, scarlet and yellow (July); maculata, purple, spotted (October); Marchii, scarlet (July); nægeloides, pink and red (July); refulgens, violet, white, and buff (summer); and Van Houttei, white, carmine, and rose (September).

Gloriosa.—Tuberous-rooted climbers, bearing very quaint and curiously-shaped flowers. Natives of Tropical Asia and Africa, and very interesting plants to grow up the rafters of a plant stove.

Commence their culture in January or February by carefully removing the tubers from the soil and planting these singly in 6in., or several in a 10in., pot, using a

compost of equal parts peat, loam, leaf-mould, decayed manure, and silver sand, and burying the tubers two inches deep. Place the pots in a temperature of 70 to 75 deg., and give no water till the shoots appear, then gradually increase the supply. Train the shoots to stakes up to the rafters; then secure them, as they grow, to wires. In summer the quaint flowers will then appear, and have a pretty effect hanging on long stalks from the shoots. In autumn give less water as the foliage and shoots decay, and, finally, keep dry till January or February. The shoots may, if desired, be trained round stakes in the pots, but a prettier effect is obtained when grown up the roof. Readily increased by seeds sown in a temperature of 75 deg. in spring; or division of the tubers in February.

The species are: Simplex, orange, yellow; simplex Plantii, yellow and red; simplex grandiflora, orange and yellow, large; superba, orange-red. The last-named is the most popular species. All grow four to eight feet high, and flower in summer.

Gloxinia.—The correct generic name of this genus is Sinningia, but, as the old name is more familiar, we retain it. The parent of the present race of Gloxinias (Sinningia or Gloxinia speciosa) originally came from Brazil in the year 1815. Many people manage to grow gloxinias in the cool greenhouse, but they never thrive or flower so well as when grown in the plant stove, or in the warm greenhouse. Anyway, they are best grown there until they begin to flower, when they may be removed to a cooler temperature. The flowers are large, tubular, self-coloured, or prettily spotted. All the forms are exceedingly attractive, and, when the plants are well furnished with their thick, fleshy foliage as a base for the handsome flowers, there are few plants to equal them in beauty.

Gloxinias are easily reared from seeds. Fill a pan or shallow box with sandy peat and leaf-mould, press the surface down evenly with a piece of flat board, dust it over

A GOOD TYPE OF GLOXINIA.

Few greenhouse plants can surpass the Gloxinia in the beauty of its foliage and the richness of the colour of its handsome tubular self-coloured or spotted flowers. A good strain, well grown, makes a fine display of colour in the greenhouse in summer.

CRINUM POWELLI ALBUM.

An African bulbous plant bearing white flowers in summer. Adapted for cool greenhouse culture.

with silver sand, hold the box in tepid water, so that the moisture rises to the surface to thoroughly moisten it, sow the seeds, do not cover with soil, but place a pane of glass on top, and cover this with paper to exclude light. Stand the box in a temperature of 65 to 70 deg., and when the seeds sprout remove the paper except when the sun is shining. As soon as the first two or three leaves have formed, carefully transplant the seedlings an inch apart in well-drained pots, boxes, or pans, and a little later transfer singly to three-inch pots, then to 5in. or 6in. pots, in which size the plants may flower. The compost should consist of equal parts of peat, loam, leaf-mould, decayed manure, and coarse silver sand. During the growing season keep the plants shaded from sun, not too far from the glass, and well watered at the roots. When the first flower-buds form, apply weak liquid manure once or twice weekly. When in full flower the plants may be removed to a conservatory until their blooms fade; then they should be returned to the plant stove, placed on a shelf, and have water gradually withheld. As soon as the foliage is dead, remove the tubers from the pots, and store them in silver sand in boxes in the stove till spring. The tubers should then be partly embedded in leaf-mould or cocoanut-fibre refuse in shallow boxes, and kept moist till new shoots, two inches long, have formed, when plant singly in 4½in. or 6in. pots, and later transfer to 8in. pots if large plants are desired. We only advise the tubers of named sorts, or specially good, promising seedlings, to be saved and repotted, as much nicer specimens may be obtained from a good strain of seed. Seedlings well grown flower within six or eight months of sowing the seed. During the season of growth maintain a uniform temperature of 65 to 75 deg. and a moist atmosphere. When in flower a drier atmosphere is preferable. Gloxinias may be increased by leaf-cuttings and by division of the tubers.

For named varieties and strains of seed see trade lists.

Griffinia.—A genus of evergreen, bulbous plants, natives of South America, and flowering mainly in winter.

The bulbs require to be grown in a compost of two parts fibrous loam and one part of equal proportions of peat, well-rotted manure, and coarse silver sand. March is the best time to repot, or, at any rate, directly after the plants have flowered. Good drainage must be provided, the compost made firm, and the pots must not be over large. When the plants are growing freely supply water plentifully, and maintain a temperature of 70 to 80 deg. Full growth will be attained by June, after which less water will be needed, but the soil must not be permitted to get dry. Later in the summer the flower stems will develop from the centre of the large bulbs, and the blossoms appear in autumn or winter. Large established bulbs will only need repotting every three or four years. The plants make their new growth between October and May. Increased by seeds sown in a temperature of 75 deg. in spring, or offsets at potting time.

The following are the chief species: Blumenavia, pink; hyacinthina, blue; and ornata, lilac. All grow about one foot high.

Hippeastrum.—The species and varieties of this genus are popularly known as Amaryllises, but their correct name is as above. The original species came from Tropical America. The species, however, are not so generally grown as the hybrids and varieties, which are really handsome in form and most attractive in the brilliancy of colour of their flowers. Hippeastrums are bulbous-rooted, and, with one or two exceptions, deciduous, losing their foliage after growth is completed.

The best time to commence the culture of these bulbs is in January, when the latter are dormant. The bulbs should then be removed from their old soil and planted about half-way in well-drained pots in a compost of three-parts fibrous loam and one part of equal proportions of

leaf-mould, well-decayed manure, and coarse silver sand. Pot firmly. The pots may be 6in. or 8in. sizes, according to the size of the bulbs. After potting, plunge the pots to their rims in a hotbed of leaves or fibre refuse, in a temperature of 60 deg., and give no water till growth begins; then gradually increase the supply as the leaves develop. As soon as the flower spikes begin to push, gradually draw the pots out of the plunging material, and then stand them on the staging, in a temperature of 65 deg., to flower. After flowering it is advisable to replunge the pots, and to let them remain thus till growth is completed at the end of the summer, when gradually reduce the supply of water, and keep quite dry when the foliage is dead. Store the pots on their sides in a temperature of 55 deg. till repotting time. Liquid manure should be given once a week to plants in full growth. Hippeastrums are easily reared from seeds sown in spring in a temperature of 65 or 75 deg., afterwards growing the seedlings continuously on in pots for three years, when they will flower. Increased also by offsets. The evergreen species require to be grown in similar soil, but not to be dried off in winter.

The species worth growing are: Ackermanni, crimson (spring); aulicum, crimson and orange (winter); equestre, red and green (summer); Leopoldii, crimson and white (spring); pardinum, yellow and scarlet (spring); procerum, lilac (winter); psittacinum, orange and scarlet (summer); Reginæ, red and white (spring); vittatum, crimson, red, and white (spring). The evergreen species is H. reticulatum, rosy scarlet (spring). For names of the hybrids and varieties, which are very numerous indeed, see catalogues issued by specialists.

Hymenocallis.—A genus of white fragrant-flowering bulbous plants, natives of Tropical America. They flower in autumn, winter, or spring.

These bulbs require to be grown in well-drained pots in a compost of two parts sandy loam, and one part decayed

manure, with a liberal amount of coarse sand. Potting should be done in March, pressing the compost firmly in the pot. Afterwards grow the plants on in a temperature of 65 to 75 deg. in a sunny part of the stove, and give water freely as growth proceeds. In winter keep almost dry. During the summer months liquid manure may be given once a week. Once in three years is often enough to repot. The temperature during autumn and winter should be about 55 to 65 deg. Increased by offsets.

The principal stove species are: Macrostephana, white (spring); ovata (Syn. Pancratium fragrans), white (autumn); and speciosa, white (winter).

Nægelia.—Plants of similar habit to Achimenes and Gesneras, and having scaly, tuberous roots. They require to be treated like the two latter genera, which see. The principal species worth growing are: Cinnabarina, scarlet (summer), 2ft.; multiflora, white (August), 2ft.; and zebrina, yellow and scarlet (autumn), 2ft.

Pancratium.—Bulbous-rooted plants with white, fragrant flowers, natives of the tropics, and requiring similar cultural conditions to the Hymenocallis, which see. The chief species are: Canariense, white (autumn), 18in.; zeylanicum, white (summer), 1ft.

Sandersonia.—A genus of tuberous-rooted plants, one species of which only is grown, namely, aurantiaca, orange-yellow, flowering in summer.

Plant the tubers singly two inches deep in a 6in., or three in an 8in. pot, in February, using a compost of equal parts peat, loam, leaf-mould, and silver sand. Grow in a temperature of 70 to 80 deg., and train the shoots to a low trellis. Supply freely with water till autumn, then gradually withhold it, keeping the roots dry during the winter. Increased by seeds and division.

CHAPTER II.

WARM GREENHOUSE.

The term "warm greenhouse" implies, for the purpose of growing the bulbs and tubers hereafter described, a structure heated artificially so as to maintain the following average temperatures: Winter, 60 deg. by day and 55 deg. by night; spring, 65 deg. by day, and 60 deg. by night; summer, 70 deg. by day, and 65 deg. by night; autumn, 60 deg. by night, and 65 deg. by day. Such a structure comes in intermediate between a hothouse or stove and a cool greenhouse. Our experience of the needs of the amateur gardener has taught us that there are many who have greenhouses sufficiently heated to command above temperatures, and, as there are several genera of bulbs and tubers that like more warmth than can be assured in the ordinary cool greenhouse, and yet would not do so well in the warmer temperature of the hothouse, we have decided to provide this separate section for them.

Begonia.—There are several distinct sections of begonias, but the only one that properly comes within the scope of this work is the Tuberous-rooted, a race of brilliant-coloured flowering plants which have become immensely popular as greenhouse and flower gardening decorative subjects during the past twenty years or so. For pot culture on the stage, or for growing in baskets suspended from the roof, there are few plants to equal the present race of single and double varieties in cultivation.

There are two ways of acquiring a stock of these plants, viz., by rearing them from seed or by purchasing tubers. The first method is the cheaper where a large assortment of colours is desired; and the latter the better one where specially choice-named varieties are preferred. Seeds

require to be sown in January or February, to ensure strong plants for flowering the same year. To rear plants from seeds, a clean 6in. pot must be half-filled with drainage, a layer of moss or partially-decayed leaves placed on this, then sufficient compost to fill the remaining space to within half an inch of the rim. Press the soil down firmly by means of the bottom of another pot, then sift some compost through a fine sieve, and put an eighth of an inch of it on the surface; press it level, water thoroughly with a fine-rose water-pot, and let it drain a few moments. Next get your seed, open the packet carefully, sow thinly, and then sprinkle a little sand over it, and again water through a fine rose. This done, procure a pane of glass and place it over the pot, and then remove the latter to a temperature of 60 to 65 deg. Plunge the pot to its rim in cinder ashes or cocoanut-fibre refuse, and shade from sun. On no account allow the soil to become dry. Directly the slightest absence of moisture can be seen, hold the pot in a vessel of tepid water deep enough to allow the moisture to ascend through the drainage hole to the surface of the soil, but not so that the water rushes through to the top of the pot. When the seedlings have formed their third leaf, transplant them a quarter of an inch apart in a shallow box or pan, water carefully, and shade from sun. When the seedlings touch each other, again transplant them an inch apart in other boxes or pans. Leave them thus till their leaves meet, then pot off singly in 2in. pots. Grow them in this size till they have filled the pots with roots; then transfer to 5in. or 6in. pots. Their future treatment will be the same as for tubers. If you decide on growing plants from tubers, procure these in February or March, embed them in a layer of cocoanut-fibre refuse in a shallow box, but do not cover with fibre, and put in a temperature of 55 deg. Just keep the fibre moist, nothing more. When the tubers sprout freely, pot each one singly in a 2in. or 4in. pot, according to size. Do not bury the tuber too deeply, only

just cover its upper surface. Place the pots in a temperature of 55 to 60 deg., and water very carefully. When growth begins freely, the tubers will be ready for a shift into 5in., 6in., or 8in. pots. Pot moderately firm, and provide good drainage and clean pots. The compost used in all cases should consist of equal parts loam, leaf-mould, and silver sand, with a little charcoal added. Let the plants now have plenty of light, but shade from bright sunshine. Water freely, too, and give stimulants twice or three times a week. When the plants are ready to bloom dispense with artificial heat, except on wet days, and ventilate freely. Remove seed-pods, unless seeds be required, and stake straggling shoots. Some of the more straggling varieties will do well in suspended baskets. When in flower the plants may be transferred to the cool greenhouse or conservatory, where they will make a brilliant display right up to autumn. In September, when the flowering period is drawing to a close, give less water, and as soon as the foliage dies discontinue it altogether. Early in November turn the tubers out of their soil, and store them in cocoanut-fibre refuse in a cool, dry, frost-proof place until February.

Brunsvigia.—South African bulbous-rooted plants of considerable beauty, and well worthy of culture in the warm greenhouse. They lose their leaves in winter.

The bulbs succeed well in a compost of equal parts peat, loam, and coarse silver sand. They require fairly large pots, which must be well drained. New bulbs may be potted in autumn, and established ones in spring, just before new growth begins. Pot firmly. When new growth commences, supply water freely, and continue to do so up to autumn; then gradually decrease the amount, and, finally, withhold it during the winter. During the summer the plants must have full exposure to the sun to ripen the bulbs, and repotting will only be needful every three or four years. Increased by offsets.

The chief species are: Gigantea, red (July); and Josephinæ, scarlet (July), the latter being the better of the two.

Crinum.—A few species of this genus of bulbous-rooted plants require warm greenhouse culture. All are handsome, both in foliage and flower, and merit culture where space can be found for them.

They require rather large pots or tubs to grow them well. The compost should consist of two parts turfy loam, one part of peat, and a liberal amount of silver sand. Good drainage, too, must be provided, as the bulbs are best not repotted oftener than once in three or four years. In potting bury the bulb about half-way in the soil, and ram the latter down firmly. March is a good time to repot. During the spring and summer give plenty of water, and in the case of bulbs that have not been repotted for a year or so an occasional dose of liquid manure. In autumn gradually withhold water, and, finally, store the pots on their sides under the staging till spring. The plants like full exposure to sun in summer. Increased by seeds or offsets.

The species above referred to are: Amabile, purple (July); Macowanii, white and purple (autumn); and Moorei, rose (summer).

Gladiolus.—A new form of Gladiolus has recently been introduced from the Rain Forest, Victoria Falls, on the river Zambesi, in tropical Africa, under the name of Gladiolus primulinus var. "Maid of the Mist." The discoverer of this plant, which, by the way, the Kew authorities regard as a unique kind, was Mr. Francis Fox, a well-known engineer, and a member of the firm who built the bridge at the Zambesi Falls. The stock he was able to collect was placed by him in the hands of Messrs. Kelway and Son, Langport, to distribute. The plant grows three to four feet high, and bears bright golden-yellow and primula-

scented flowers in August. It requires to be grown in a temperature of 60 to 65 deg., and, coming from a moist climate, naturally demands a moist atmosphere. Since Messrs. Kelway and Son introduced this fine species, they have obtained a new race of charming hybrids by crossing it with Gladiolus gandavensis.

Hæmanthus.—Although all the species of this genus come from South Africa, some require more warmth than others to grow them to perfection. The former, therefore, we shall deal with here, and the latter under the heading of the cool greenhouse.

The compost for these bulbs should be composed of two parts of sandy loam and one of equal proportions of peat, well-decayed manure, and coarse silver sand. Plant the bulbs singly with their apex exposed in six or eight-inch pots, according to size, in early spring; make the soil firm, and see the pots are well drained. Until growth becomes active, water sparingly, freely afterwards, and in winter give none at all. These bulbs do not require repotting often than once in three years. It is advisable, therefore, after the first year to give weak liquid manure in summer. Increased by offsets.

The species requiring warm treatment are: Cinnabarium, red (spring); Katherinæ, scarlet (spring); multiflorus (Syn Kalbreyeri), scarlet (spring); and Queen Alexandra, orange scarlet (spring); and albiflos, white (summer).

Tuberose (Polianthes tuberosa).—Although the fragrant Tuberose will do well in a cool house, it requires warmth to bring it early into flower. Indeed, it is a good plan to have three batches of tubers in hand, one in a cold frame, another in a cool house, and a third in the warm one. By bringing forward a few pots at a time from the lower to the higher temperatures, a succession of flowers may thus be obtained over a longer period.

The tubers should be potted as soon as they can be

obtained in the autumn, planting them singly in 5in. pots in a compost of two parts loam, one part well-decayed manure, and plenty of coarse silver sand. Firm potting is very desirable. At this stage the tubers must not be introduced into heat, but placed in a shady cold frame to make roots. Give no water unless the soil appears to be dry until the tubers begin to show signs of growth. In the New Year the most forward in growth may be removed to the cool house, kept there for a month or so, then be transferred to the warm house. When in full growth give copious supplies of water, and syringe the foliage freely daily. As soon as the flower buds can be clearly seen give liquid manure twice a week. By adopting this code of culture Tuberoses may be easily grown with success. The tubers will not flower satisfactorily a second year in pots; so either throw them away or plant them in a spare corner outdoors.

The principal varieties are the Pearl (one of the best); Double African, American, and Italian. The flowers are white, double, and fragrant.

CHAPTER III.

COOL GREENHOUSE.

In this section such bulbous and tuberous-rooted plants as require only a little artificial heat in autumn, winter, and spring will be dealt with. The average night temperature should be 40 to 45 deg., or 50 to 55 deg. by day. These temperatures refer to artificial heat. On sunny days the temperature may, of course, go higher. A greenhouse of this character is a pretty general feature in small gardens. In summer no artificial heat will be required.

Anoiganthus.—A. breviflorus, the only species, is a South African bulbous plant, bearing yellow flowers in May. It is an interesting plant to grow by those who are fond of uncommon bulbs.

The bulbs require to be grown four or five in 5in. pots, in a compost of two parts loam, one part leaf-mould, and plenty of coarse silver sand. Plant the bulbs two inches deep. After potting, place in a cool corner of the greenhouse, and give no water till growth begins; then apply cautiously as it proceeds, watering more freely later on. The plants will do best on a sunny shelf until the flowers appear, After flowering, gradually withhold water, and keep dry all winter. Repot in March, and start to grow as before. Increased by offsets.

Antholyza.—South African bulbous-rooted plants of easy culture, and very pretty when in flower.

Plant half a dozen bulbs two inches deep in a 6in. pot in October, using a compost of equal proportions of loam, peat, leaf-mould, and coarse silver sand. Store in a cool part of the greenhouse, and give no water till growth begins. When the latter occurs place in a light position and

supply freely with water. In autumn withhold water, and keep dry till new growth commences, when repot and grow on as before. Increased by offsets.

The best species are æthiopica, red and yellow (June); and paniculata, red and yellow (summer).

Albuca.—Bulbous-rooted plants from South Africa, that will do well in a cool house.

Procure bulbs in October, and plant five bulbs two inches deep in a 5in. pot, in a compost of two parts loam and one of equal proportions of peat, leaf-mould, and coarse sand. In other respects treat as advised for Anioganthus. Increased by offsets.

The species worth growing are: Aurea, yellow and green (June); Nelsonii, white and red (June).

Arum.—A tuberous-rooted plant, bearing curious flowers in spathes, green without and purple within, in winter. Called the Black Arum Lily.

The tubers have to be planted singly in 5in. pots in autumn, in a compost of equal parts loam, leaf-mould, and coarse silver sand. Place the plant in a warm corner, and keep the roots moist. The plant grows during the winter and rests in spring and summer, when the soil must be kept dry. Increased by division.

The species referred to is A. sanctum.

Blandfordia.—Very showy and interesting Australian plants with bulbous-like roots, and suitable for cool greenhouse culture.

These plants succeed best in a compost of equal parts peat, loam, and coarse silver sand, require to be potted firmly in well-drained pots in October, and to be kept dry from then till February, when begin to water freely. Repot every third year. Increased by division in October.

The species worthy of culture are: Flamea aurea, yellow (summer), 1ft.; grandiflora, crimson (summer), 2ft.; and nobilis, orange (July), 2ft.

Cooperia. — Beautiful fragrant-flowered bulbous plants, natives of Texas. The only species are Drummondi, white; and pedunculata, white, both flowering in August, and growing 6in. high.

Grow in a compost of equal parts peat, loam, leaf-mould, and coarse silver sand. Pot in January or February, place in a cold frame till April, then remove to the greenhouse. Give plenty of water whilst growing, and none when the leaves fade. Four or five bulbs may be planted in a 5in. pot. Increased by offsets.

Cyclamen.—The cyclamen here referred to is the Persian Cyclamen (C. latifolium; syn. persicum), one of the showiest and best of winter-flowering cool-greenhouse plants. Our leading florists have now a number of most beautiful strains, with brilliant colours of nearly all shades of colour, as a reference to their catalogues will show.

To ensure the best results, these plants should be practically treated as annuals. That is to say, they should be raised from seed annually, the old plants being discarded after flowering. Fill some shallow pans or boxes, or well-drained pots, with a compost of two parts loam and one part of good leaf-mould, adding also a fair amount of sand. Press the compost in moderately firm, then dibble the seeds in a quarter of an inch deep and an inch apart. Cover the surface of the soil with a thin layer of cocoanut-fibre refuse, and place the pans, etc., in a temperature of 55 to 65 deg. Keep the soil moist. When the seedlings are well up, transplant each carefully into a "thumb" pot, using similar compost to that advised for seed-sowing. Grow in a light position not too far from the glass, and be careful to avoid over-watering and cold draughts. When the small pots are filled with roots, transfer the plants to 3in. pots. Spread a layer of cinders or gravel on the staging, and stand the plants on this. Shade from sunshine. In July transfer to 4½in. pots, and either grow in the greenhouse or in a sunny frame, shaded from bright

sun. In September remove to a light greenhouse, maintain a temperature of 45 to 55 deg., and give stimulants occasionally. The plants must be kept free from insects, have a moist atmosphere about their pots, and a genial warmth and freedom from chills. At each potting use two parts of loam and one of leaf-mould, with only a small quantity of sand. The principal sowing of seed should be made in October and November. The next best time to sow is January, not later. Those who wish to grow the corms a second year should gradually withhold water after flowering, but never entirely. The pots may be stood in a cold frame on an ash bottom till July, then the corms should be turned out and repotted in fresh compost in small pots. After potting, keep in the frame and somewhat close and moist. Syringe the pots daily. As soon as new leaves form, transfer to larger pots, and remove to a light greenhouse, standing the pots on ashes or gravel, which should be kept moist.

Freesia.—Freesias are very popular, fragrant-flowered bulbous plants from South Africa. They have long been great favourites with owners of cool greenhouses, partly on account of the sweetness of their blossoms and partly because of their flowering so freely in winter and spring. Up to a year or so ago the white and yellow forms were the only ones grown, but now we have pretty shades of pink, orange, etc., and thus the Freesia family has become still more valuable as greenhouse decorative plants. They succeed under ordinary cool greenhouse treatment, but if flowers are required early in winter the temperature of a warm house is essential.

The best time to commence the culture of Freesias is in August. Purchased bulbs should then be planted in 5in. pots in a compost of two parts sandy loam, one part leaf-mould, one part well-decayed manure, and a liberal amount of coarse silver sand. Plant seven or eight bulbs one inch deep in the size of pot mentioned. If the bulbs

FREESIA REFRACTA ALBA.

A spring-flowering cool greenhouse bulbous-rooted plant. Flowers white and very fragrant.

A GOOD WINTER FLOWER, CYCLAMEN PERSICUM.

A greenhouse tuberous-rooted plant.

are small a dozen may be planted in a pot. After potting, stand the pots in a cold frame, and cover with ashes or fibre refuse for about a month; then remove to a shelf near the glass in the greenhouse. Water sparingly at first, but as soon as growth becomes active gradually increase the supply. When the flowers begin to form give weak liquid manure occasionally. After flowering water must be gradually withheld, and the pots be fully exposed to the sun to thoroughly ripen the bulbs. When the foliage is dead keep quite dry till August; then repot, and start to grow as before. Freesias are easily reared from seed sown in sandy soil in spring. The strongest seedlings will flower the next year. Also increased by offsets at potting time.

The chief species and varieties are: Refracta, white and orange; refracta alba, white; refracta Leichtlinii, cream and orange; refracta odorata, yellow; and Sutton's Hybrids a new variously coloured strain.

Hæmanthus.—H. coccineus, scarlet; and H. natalensis, green, purple, and yellow, are species of this South African genus of bulbous-rooted plants, that will succeed in the cool greenhouse. They require precisely the same code of culture as that advised for the warm greenhouse species, except as to temperature.

Hymenocallis.—H. calathina, greenish white, fragrant, and flowering in March; Amancæs, yellow, flowering in spring; and Macleana, greenish-white, blooming in June, are worth growing in pots in a cool house. They practically require similar culture to the warm house kinds, except as to temperature.

Hypoxis.—A genus of bulbous plants not very generally grown, but nevertheless worthy the attention of those who like to grow uncommon bulbs. The only species worthy of note is H. hemerocallidea, bearing yellow flowers in summer and growing a foot high.

It succeeds in a compost of equal parts peat, leaf-mould, and sand; requires to be potted in August, stored in a cold frame till growth begins, then transferred to the cool house. Requires similar treatment to other bulbs as regards watering, ripening, etc. Increased by offsets.

Lachenalia.—A genus of South African bulbous-rooted plants, with mottled or green foliage and attractively-coloured tubular flowers. The flowering period extends from January to June, and the bulbs are easily grown in pots or hanging baskets in a cool greenhouse.

The principal species and varieties are: Camii, orange, yellow, and green, a hybrid; Nelsoni, golden yellow, hybrid; lilacina, lilac; orchioides, white or yellow; pendula, purple, red, and yellow; pendula aureliana (syn. L. gigantea), red; tricolor, red or green; tricolor aurea, yellow; and tricolor quadricolor, red, green, and yellow.

All the foregoing kinds are easily grown. The bulbs should be potted in August, placing half a dozen bulbs half an inch deep in a 5in. pot. The compost should consist of two parts loam, and equal parts of leaf-mould, well-decayed manure, and sand. After potting, give no water, but place in a cold frame, and cover with cocoanut-fibre until the end of October, when remove to a shelf in a heated greenhouse. As soon as growth begins, give water. Keep close to the glass, and take care not to overwater the soil. As soon as the bulbs show flower, apply weak liquid manure occasionally, discontinuing it when the flowers open. After flowering, gradually withhold water, so as to render the soil dry and cause the leaves to turn yellow and die. Keep quite dry from then until repotting time—August. These pretty Cape bulbs may also be grown in wire baskets suspended from the roof of the greenhouse or conservatory. Line the inside of the basket with moss, then add a layer of compost. Press the bulbs into the soil an inch or so apart; fill up with soil, then plant bulbs in the top portion. Hang the baskets in

the greenhouse, and when the bulbs begin to push through, dip them for a few minutes in water. Keep well supplied with water when growth is active. After flowering, gradually withhold water. Keep dry till repotting time. Temperature in winter, 45 to 50 deg.; in summer, 55 to 65 deg. Propagation is effected by offsets removed from the old bulbs at potting time; also by seeds sown in a temperature of 55 to 65 deg. in spring. Seedlings flower when four years old.

Lilium.—There are a few species of Liliums that are specially adapted for culture in a cool greenhouse. They are too tender to grow outdoors or in a cold house. The kinds here referred to are: Harrisii or eximium (Easter or Bermuda Lily), white, 3ft.; neilgherense, sulphur (autumn), 3ft.; nepalense, yellow and purple (autumn), 4ft.; Lowii, white and violet (summer), 2ft.; philippinense, white (August), 2ft.; sulphureum (Syn. wallichianum), yellow and brown (summer), 6ft.; and longiflorum Wilsonii, white (spring), 3ft.

L. longiflorum and Harrisii do best in a compost of two parts turfy loam, one of leaf-mould, and a fair quantity of silver sand. One bulb may be grown in a 6in. pot, or three in an 8in. size. Provide good drainage, put in two inches of compost, then the bulb or bulbs; surround each with a little sand, and add sufficient compost to just cover the bulbs. The remaining space in the pots should be left to accommodate a top-dressing when the shoots are six inches high, and stem roots have begun to form. The other lilies will require a compost of equal parts of loam, peat, and coarse silver sand. In potting treat L. nepalense as advised for the longiflorum varieties, because this is a stem-rooting species. The others do not require to have their bulbs placed so low in the pot, or to have so much space left for top-dressing. If the apex of the bulb and the soil be brought to within an inch of the rim this will suffice. The time for potting will depend on when

the bulbs can be obtained. In any case, do it as soon as possible after the bulbs can be got. Repotting should always be done in autumn. After potting, plunge the pots in fibre refuse in a cold frame till root action has commenced, then remove to the greenhouse. Commence to water only when growth begins. As soon as the shoots are six inches high top-dress with a compost of equal parts loam, decayed manure, leaf-mould, and sand, and when the flowers appear give weak liquid manure two or three times weekly. Keep a careful watch for greenfly, otherwise this pest will soon ruin the buds. After the lilies have flowered water requires to be gradually withheld, finally keeping the soil on the dry side till new growth begins. During the growing season lilies like plenty of air, and shade from the direct rays of the sun. For culture of other lilies see chapter on Bulbs in Cold Greenhouse.

Nerine (Guernsey Lily).—Although these interesting autumn-flowering plants will succeed fairly well in a cold house, they really do better in slight warmth, such as a cool greenhouse affords. They are bulbous-rooted and of comparatively easy culture.

The kinds worth growing are: N. appendiculata, pink, 1ft.; curvifolia, scarlet, 1ft.; curvifolia Fothergillii, scarlet, 1ft.; filifolia, red, 1ft.; flexuosa pink, 2ft.; flexuosa angustifolia, pink, 1ft.; flexuosa pulchella, pink and red, 1ft.; sarniensis (Guernsey Lily), salmon, 1ft.; sarniensis corusca, orange-scarlet, 1ft.; sarniensis Plantii, crimson, 1ft.; sarniensis rosea, rose, 1ft.; sarniensis venusta, scarlet, 1ft.; pudica, white and pink, 1ft.; Moorei, scarlet, 1ft.; and undulata, pink (May), 1ft.

Grow the bulbs in a compost of two parts sandy loam, one part decayed cow manure, and a liberal amount of sand. The bulbs may be grown singly in 4½in. pots, or three in a 6in. pot. Provide good drainage, bury the bulb half its depth in the soil, and pot firmly. Repotting

should only be performed every three or four years, and the best time to do this is directly after the plants have flowered. Some of the kinds push forth their flower-spikes before the new leaves, others just after. Anyhow, directly growth begins, water liberally, and continue to keep the soil moist until May. The season of growth begins in August or September, and continues till May. From May to September withhold water entirely, and stand the pots outdoors in a sunny spot. When signs of new growth are evident, soak the pots in water for an hour or so, and treat as advised. Bulbs not newly repotted may be fed with liquid manure once or twice a week from August till March. Bear in mind that the plants must be encouraged to grow freely from September to May, afterwards to have no water, and to be thoroughly exposed to the sun to ripen the bulbs. Nerines may be increased by offsets at potting time, or by seeds sown in heat in spring. The seedlings will not flower until four or five years old.

Ornithogalum.—O. arabicum, bearing white starry flowers in summer, and growing two feet high, is an excellent bulbous-rooted plant to grow in a cool house. It also forces well. The flowers, too, are fragrant and valuable for cutting.

The bulbs should be planted singly in a 5in. pot in September. Use a compost of two parts loam and one of equal proportions of leaf-mould, decayed manure, and silver sand. After potting, place under fibre refuse in a cold frame until growth commences, then transfer to the cool house, and water freely. If early flowers be desired place a few of the most forward plants in the warm house until the flowers expand, then return to the cool house. After flowering, remove to the cold frame, withhold water gradually, and keep dry when the foliage fades. Repot in October. Increased by offsets.

Oxalis.—A few species of this genus are worthy of culture in the cool greenhouse. Those named below are either tuberous or bulbous-rooted, easy to grow, and very pretty when in flower. The following are the most noteworthy kinds: Cernua (Bermuda Buttercup), yellow (spring), 6in.; cernua fl. pl., double-flowered; floribunda, rose (spring), 1ft.; floribunda alba, white; purpurata, purple (October), 3in.; rosea, rose (spring), 8in.; tetraphylla, red (summer), 6in.

The foregoing kinds should be grown in a compost of two parts sandy loam, one part leaf-mould and plenty of silver sand. The potting of all the above kinds should be performed at the same time. Those that flower in spring, as rosea and tetraphylla, should be potted in January and February; those that bloom in summer in March; those that do so in autumn and winter in August. Plant the bulbs or tubers about half-an-inch below the surface, and half-an-inch to an inch apart in 5in. pots. After potting, place in a cool window or greenhouse until growth begins; then remove to the light. No water should be given till growth begins, and then only in small quantities until growth is well advanced. An occasional application of manure will be beneficial when the plants are in full growth. After flowering, gradually withhold water, and keep the soil quite dry from the time the leaves die until the potting season arrives. Propagation is effected by seeds, cuttings, or offsets. Many kinds seed freely, and it is no uncommon occurrence to find plenty of seedlings springing up in the same pot, or in other pots that have stood near the parent plant. Seed may be obtained from florists, and if this be sown in the compost mentioned above in pots in a warm greenhouse in spring, abundance of seedlings may be obtained. The seeds should only be lightly covered with soil, and care must also be taken not to water the soil too freely. Transplant the seedlings when large enough to handle an inch apart in 3in. pots, and later on plant three seedlings in pots of this size. Cuttings

of shoots, where available, may be inserted in small pots, and offsets removed at repotting time. Bulbs or tubers may also be purchased from bulb dealers in autumn.

Sprekelia.—The only species, S. formosissima, commonly known as the Jacobean Lily, was formerly included in the genus Amaryllis, but is now placed in the present one. It is an interesting and an easy plant to grow. The flowers are similar to those of the Amaryllis, but crimson in colour, and borne in summer on stems two feet high. There are two or three varieties, as glauca, paler colour than the parent; Karwinskii, flowers edged with white; and ringens, with the upper segments marked with yellow.

The bulbs require to be grown in a compost of two parts loam, one of decayed manure, and one of coarse silver sand. In February plant the bulbs singly, two-thirds of their depth, firmly in 6in. pots. Place the pot in a warm part of the greenhouse, but give no water till growth begins, then supply it freely. It is not necessary to repot oftener than once in three years, in which case after the first year liquid manure may be applied during the spring. In late summer gradually withhold water, and keep the soil dry all the winter. Increase in a similar way to Hippeastrums, which see.

Vallota (Scarborough Lily).—A popular window and greenhouse plant, which is much appreciated because of its easy culture and flowering in late summer. It is bulbous-rooted, and has evergreen foliage. The only species is purpurea, which bears red flowers in August or early September. There are several pretty varieties of it, as, for instance, eximia, white, feathered with crimson; magnifica, large flowered; major, reddish-scarlet; and minor, red. There is also a very fine hybrid named hybrida, which bears bright vermilion flowers.

The best soil in which to grow the Vallota well is equal

parts of good turfy loam, good leaf-mould, and coarse silver sand. Purchased bulbs should be potted as soon as procured, otherwise repotting of established plants is best done just before flowering in July or August. In repotting, disturb the roots as little as possible, and press the new mould down firmly in the pot. Bury the bulbs about half-way in the soil. The plants commence to grow after flowering, and continue to grow so until the next May. The soil must therefore be kept moist during that period. In summer stand the plants in a sunny position, and give just enough water to keep the soil moist. Repotting is only needful about once in three or four years, and after the first year liquid manure may be given occasionally to the soil. Increased by offsets, removed at potting time.

CHAPTER IV.

COLD GREENHOUSE.

THERE are thousands of persons who either own unheated greenhouses or who only attempt to heat them in an unsatisfactory manner by means of oil stoves. In the first case they could not utilise their cold houses to a better purpose than by growing the many kinds of hardy or half-hardy bulbs that are available for pot culture. And in the second instance it would be far more satisfactory to dispense with heating by oil stoves, and to grow the following hardy bulbs which require no artificial heat. In both instances a great deal of pleasure and a beautiful display of flowers might be obtained that would well reward the grower for the cost, time, and labour involved in their cultivation. Any of the following genera, species, and varieties of bulbous and tuberous-rooted plants may be relied upon to give entire satisfaction in a cold house. Most, if not all, of them may also be grown in the open air, but the advantage of growing them in pots is, they will produce their flowers earlier than those grown outside; and, moreover, if the grower has the good fortune to possess a cool or a warm greenhouse, he may force some of them into flower still earlier, and so obtain a long succession of flowers. Those that may be forced will be specially mentioned in the cultural details given regarding each genus.

Albuca—The Albucas are half-hardy South African bulbous plants, flowering in summer, and growing from six inches to two feet in height. The species worthy of culture are: Caniculata, yellow; fastigiata, white and green; and Nelsoni, white.

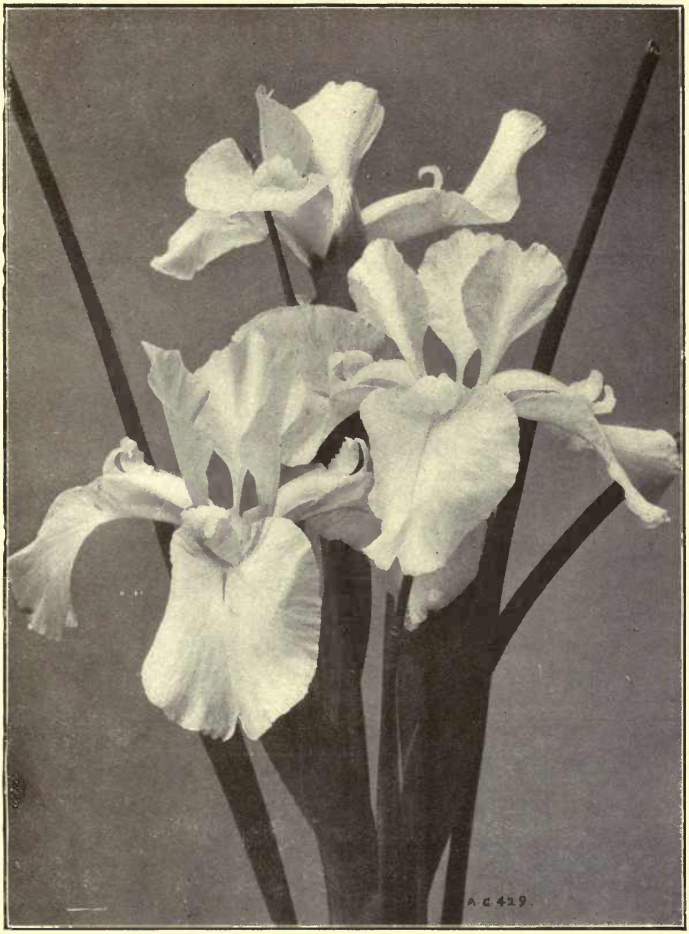
The bulbs should be planted five in a 5in. pot and two inches deep, in a compost of two parts loam and one part of equal proportions of peat, leaf-mould, and silver sand, in October or November. Place in a cold frame, and cover with cinders or fibre refuse till growth begins, when remove to the greenhouse. Commence to water when in the greenhouse, and continue to do so up till the leaves begin to fade; then gradually withhold it till new growth begins. Repot annually in November. Increased by offsets.

Allium.—Several species of this genus do very well in pots in a cold house. Those we specially recommend are: Cæruleum, blue (July); and neapolitanum, white (May); but any of the others named in the table of hardy bulbs might also be grown.

Their culture is quite simple. Plant eight to twelve bulbs one inch deep in a 5in. pot, in a compost of two parts sandy loam and one part leaf-mould, with plenty of silver sand. Do this in October or November, then place the pots in a cold frame, cover with cinder ashes or fibre refuse till growth begins, when remove to the greenhouse and commence to supply water. If a cool or warm house be available, a few of the more forward pots of neapolitanum may be placed therein to force earlies into flower. After flowering, withhold water, and keep dry till repotting time; then treat as before. Increased by offsets.

Alströmeria.—One of the Chilian Herb Lilies (Alströmeria pelegrina alba), a tuberous-rooted plant, makes a good cool-house subject for flowering in late spring. It grows about a foot high, and bears white flowers.

Three or more tubers may be grown in a 6in. pot in a compost of equal parts loam, peat, leaf-mould, and silver sand. Plant the tubers three inches deep. Place in a cold frame till growth begins, then remove to the greenhouse, and supply moderately with water. After the



ENGLISH IRIS, CELESTIAL BLUE.

Very beautiful and showy are the numerous varieties of the English Iris (Iris xiphioides). They are splendid plants for grouping in mixed borders or growing in beds.

A SPLENDID HARDY BULBOUS PLANT.

In Camassia Cusickii we have a showy bulb for growing in sunny borders or massing in grass. Its pretty starry, lavender blue flowers, borne on graceful spikes, produce a pleasing effect in early summer

flowers have faded remove to the cold frame and give less water, finally withholding it when the foliage is dead. Repot every third year in November. Increased by division.

Amaryllis.—The Belladonna Lily (Amaryllis belladonna) may also be grown in pots in a cold house. It will yield its handsome rosy blossoms in August just before new growth begins.

The bulbs may be grown singly in 6in., or three in an 8in., pot. Procure and pot the bulbs in August in a compost of two parts loam, one part decayed manure, and a little coarse silver sand. Bury the bulbs so that their tips just show through the soil. Place in a cold frame, and when the flower stem shows remove to the greenhouse. The plant will make its growth during autumn and winter, and must be well supplied with water. When the leaves begin to fade withhold water, return to a sunny frame, and keep dry till the flower-stems begin to appear. Repot every three years, and feed with liquid manure the second and third year. Increased by offsets.

Anemone.—The various forms of Anemone coronaria and hortensis (stellata) may be grown in pots in a cold house.

Plant the tuberous roots in a compost of equal parts loam and leaf-mould and a little sand in 5in. pots, in November. Place about eight tubers two inches deep in each pot. Store in a cold frame till growth begins, then remove to the greenhouse and water carefully. The flowers will appear about February, and form a pretty contrast to other bulbous plants. After flowering, plant out in the garden, and procure fresh ones for pots the following autumn.

Babiana.—In this genus of bulbous-rooted plants we have some charming subjects for pot culture in the cold

house. They yield pretty blue, violet, scarlet, or yellow flowers in late spring, all of which possess a pleasing fragrance.

The bulbs should be grown five or more, according to size, in a 5in. pot, in a compost of two parts loam and one part leaf-mould, with plenty of silver sand. Plant the bulbs two inches deep early in November. Store the pots in a cold frame, and cover with cinder ashes or fibre till growth begins. After this remove to the greenhouse, commence to give water, and continue the supply till the leaves fade; then keep dry, and store in a sunny cold frame, repotting in November. Increased by offsets. The kinds to grow are: Disticha, blue; macrantha, yellow and purple; plicata, violet and blue; ringens, scarlet; and stricta, white and lilac. Natives of South Africa.

Belamacanda.—B. chinensis, a native of China, bears orange and black flowers in June, and grows two feet high. An uncommon bulbous-rooted plant that succeeds under similar treatment to that advised for Ixias.

Bloomeria. — Californian bulbous-rooted plants, flowering in June, and growing about a foot high. The only species worth growing are aurea and Clevlandii, both yellow-flowered.

Require similar culture to the Alliums, which see.

Bravoa.—B. geminiflora is a pretty Mexican bulbous-rooted plant growing two feet high, and bearing orange-red flowers in July.

Grow in a compost of two parts sandy loam, one part leaf-mould, and plenty of silver sand. Plant five or more bulbs one inch deep in a 5in. pot in November, and otherwise treat as advised for Babianas. Increased by offsets.

Brevoortia.—B. Ida-Mai, formerly known as Brodiæa coccinea, is a Californian bulbous-rooted plant bear-

ing red and green flowers in June, and growing a foot or so high, that makes an interesting subject for cold greenhouse culture.

The bulbs should be planted in September in a compost of two parts sandy loam, one part leaf-mould, and a liberal amount of coarse silver sand. Plant five bulbs two inches deep in a 5in. pot; place the pots in a cold frame, and cover with fibre refuse till growth begins; then transfer to the greenhouse. No water must be given till growth begins; afterwards give a moderate supply till the plants have flowered, then gradually withhold it, keeping the soil dry during the winter. The pots may be stored in a sunny cold frame after flowering. Repot annually. Increased by offsets.

Bulbocodium.—The only species, B. vernum, bears rosy-purple flowers in February, and grows three to six inches high. A pretty and interesting plant for the cold greenhouse.

The bulbs do best in shallow pans, 4in. to 6in. deep and 8in. in diameter. Plant eight to twelve bulbs an inch deep in a compost of two parts sandy loam, one part leaf-mould, and one part of silver sand, any time in September, then store in a cold frame till growth begins. Supply water freely during the growing season, and keep dry when at rest. Increased by offsets.

Calochortus.—The Mariposa Tulips are natives of California, and noteworthy for the brilliancy of colour of their flowers, which are borne in June and July. They vary in height from six inches to two feet. There are a large number of species and varieties, the names of which will be found in the list of hardy bulbs on p. 51. Any or all of those described there may be grown in pots or pans in the cold greenhouse.

Five-inch pots, or pans 6in. deep and 8in. to 12in. in diameter, may be used to grow Calochorti. The compost

should consist of equal parts of peat, leaf-mould, sandy loam, and coarse silver sand. Good drainage must be provided. Plant the bulbs in October or early November, placing them two inches deep and three inches apart in the pans, or four in a 5in. pot. Store under fibre refuse in a cold frame until growth begins, then remove them to the greenhouse. Water carefully till growth is active, then give a liberal supply until the leaves begin to fade, when gradually discontinue the supply, withholding it entirely in autumn and winter. These bulbs must have full exposure to the sun both when growing and ripening their bulbs. Store in a cold frame in autumn, and repot in November. A little weak liquid manure may be given during the growing stage. Increased by offsets.

Chionodoxa.—Few bulbous-rooted plants are prettier than the Chionodoxas when in flower early in the year. Especially beautiful are the species Luciliæ, blue with a white eye; and sardensis, a lovely shade of blue. Other species will be found in the list of hardy bulbs.

Plant half a dozen bulbs in a 3in. pot, a dozen in a 5in. pot, or a number one inch apart in shallow pans, in a compost of two parts loam, one part leaf-mould, and one part coarse silver sand, any time in September. Bury the bulbs an inch deep. Store in a cold frame under fibre refuse, as advised for other bulbs, and remove to the greenhouse when growth begins. The after-treatment as regards watering and resting, should be similar to that advised in previous instances. Repot in September. Increased by offsets.

Chlidanthus.—C. fragrans is a native of Argentina, bears yellow, fragrant flowers in June, and grows about nine inches high.

It requires to be grown in a compost of equal parts peat, loam, leaf-mould, and silver sand, in 5in. pots. Plant five or six bulbs an inch deep in each pot in October, store

in cold frame under fibre refuse till growth begins, then place in the greenhouse, keep well watered whilst growing and dry when the leaves fade. Repot in autumn. Increased by offsets.

Colchicum.—The Colchicums flower in autumn or in early spring, producing their blossoms before making new growth. Those that flower in autumn are particularly valuable, because there is at that period a paucity of flowering bulbous-rooted plants. The kinds that flower then are: Autumnale, purple; byzantinum, rosy-purple; Decaisnei, flesh; and speciosum, lilac-purple. The spring-flowering species are: Hydrophilum, pink; libanoticum, rose and white; and crociflorum, purple and white.

The bulbs may be grown in pots or pans, planting them two inches deep and two to three inches apart, according to their size. The compost should be two parts of loam, one of leaf-mould, and one of coarse sand, and the planting be done in August for the autumn-flowering kinds, and in September or October for the others. Store in a cold frame till the flower stems show, and afterwards place in the greenhouse. Directly after flowering put them back in the cold frame to complete their growth. When the foliage fades withhold water entirely. Increased by offsets.

Crocosmia.—C. aurea is a South African bulbous-rooted plant, bearing orange-red flowers on graceful spikes in summer, and growing about two feet high. Although usually grown as a border plant, it is equally adapted for pot culture.

The corms should be planted one inch deep, and five in a 5in. pot, in November, in a compost of two parts loam, one part leaf-mould, with a plentiful addition of coarse silver sand. Store in a cold frame, and treat as advised generally for bulbs. When growth begins place in the greenhouse, and keep well watered whilst growing,

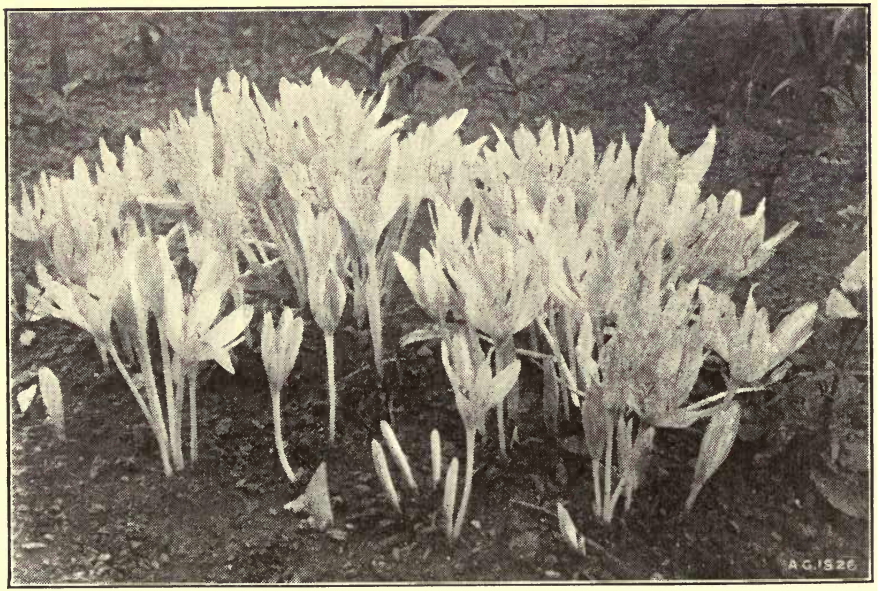
afterwards replanting in a sunny cold frame to ripen the corms. Keep dry in autumn and winter, and repot in November. Increased by offsets.

Crocus.—The crocus is too well known to need any detailed descriptions of its good qualities as a pot or border bulbous-rooted plant. But the inexperienced amateur may not possibly be aware that there are a number of very pretty species, apart from the common kinds, which flower in autumn as well as in spring, and make charming subjects for pot culture in the cold greenhouse. For example, asturicus, purple; iridiflorus, lilac; pulchellus, blue; nudiflorus, purple; sativus, purple; and speciosus, blue, flower in October and November; and biflorus, white and black; alatavicus, a similar colour; reticulatus, lilac and white; Sieberi, lilac; and vernus, white and purple, blossom from January onwards. These, therefore, with the ordinary Dutch kinds, will help to make the cold house quite gay from autumn to mid-spring.

The species just mentioned should be grown preferably in shallow pans, 4in. deep and 6in. wide, filled with compost of two parts loam, one part leaf-mould, and one part coarse silver sand. Arrange the corms an inch apart, and cover them with about half an inch of soil. Place in a cold frame, and cover with about an inch of fibre. The autumn-flowering kinds should be potted in August, and the others in October. Remove to the greenhouse directly growth begins. The common Dutch crocuses may be potted in any ordinary good sandy soil, containing a little leaf-mould or rotten manure. Three-inch pots are best for these, and five or six bulbs may be planted in each. Place the pots in a cold frame, and cover with fibre refuse or cinder ashes till growth commences; then transfer to the greenhouse. In all cases plenty of water must be supplied during growth. After growth is completed, transfer the choice kinds to the cold frame and withhold water. The common sorts are best planted out

CROCUS VERSICOLOR.

A hardy species. Flowers white veined with purple-blue; March.



MEADOW SAFFRON (COLCHICUM AUTUMNALE).

A showy hardy bulb, a native of Britain, and well adapted for naturalising in grass or growing in borders. The flowers are purple, and appear before the foliage in September. There are also white, rose, striped, and double varieties of it.

in odd corners of the garden, buying new ones for pots. The others may be grown on year after year, repotting at the times before specified. To ensure an early crop of flowers of the ordinary kinds place a few pots at a time in the cool house, when the flower stems begin to show. Increased by offsets.

Cyclamen.—Tuberous-rooted plants, usually grown outdoors in the case of the hardy species, or in a cool house in the case of C. latifolium. The species that we advise to be grown in a cold house are Coum and its varieties, and repandum; also the pretty hybrid, Atkinsii. These flower in winter, bear flowers of shades of rose, lilac, white, crimson, etc., and have pretty marbled foliage.

The tubers do best in shallow pans, well drained, and filled with a compost of equal parts peat, leaf-mould, loam, and silver sand. Plant the tubers three inches apart, and sufficiently deep to just leave their crowns exposed. Plunge the pans to their rims in fibre refuse in a cold frame, and do not give any water till growth commences. Afterwards keep fairly moist, and as soon as flowers begin to form place in the greenhouse. After flowering remove to the frame, and keep just moist all the year. Replant every third year, but topdress each year with a little dry, decayed cow manure. Increased by seeds.

Cypella. — Mexican and Peruvian bulbous-rooted plants, with quaint cup-like flowers, borne in summer. Interesting plants to grow in a cold house. The principal species are: Herbertii, yellow (July); peruviana, yellow and brown; and platensis, blue, white, and yellow.

They require precisely the same culture as Babianas, and may be increased by offsets.

Dierama.—D. pulcherrima was formerly included with the Sparaxis. It grows three or more feet high, bears

blood-red flowers late in summer, and certainly is an interesting plant to grow in the cold house.

Treat in every way as advised for Ixias and Sparaxis.

Eranthis.—E. hyemalis, known as the Winter Aconite, is one of the earliest plants to flower outdoors. It is tuberous-rooted, and bears yellow flowers in January and February.

The tubers should be planted an inch deep and an inch apart in shallow pans filled with any good ordinary sandy soil, in August or September, placed in a cold frame till growth begins, then be removed to the cold house to flower. Keep moist whilst growing. After flowering plant out in odd corners, and procure fresh tubers for another season. Increased by offsets.

Erythronium.—These pretty vernal-flowering bulbous plants are popularly known as Dog's-tooth Violets. They bear yellow, pink, purple, or white blossoms in March or April, and make dainty little subjects for early flowering in a cold house. See list of hardy bulbs for names of species.

The bulbs require to be planted in two parts loam and one part leaf-mould, with plenty of coarse sand in pans during August. Plant the bulbs one inch deep and an inch or so apart, then treat them as advised for Cyclamens. When the foliage dies withhold water, and place in a cold frame till new growth begins in spring. Repot every third year, and topdress in the meantime with decayed cow manure. Increased by offsets.

Eucomis.—The only species is E. punctata, and this bears creamy-white flowers in July on a stout spike two feet high. A distinctly pretty plant for a cold house.

The bulbs should be planted singly, in October, in a 5in. pot, in a compost of two parts sandy loam, one part decayed manure, and plenty of coarse silver sand. Place

in the greenhouse at once. Give only enough water to prevent the soil getting too dry until growth begins; then supply it freely. In autumn give less water, just enough to prevent the leaves shrivelling. Liquid manure may be applied during the summer. Repot every three or four years, and topdress other years. Increased by offsets.

Fritillaria.—The Fritillarias are very interesting, curious, and pretty plants, flowering in spring and early summer. Their graceful habit of growth and their quaint drooping flowers render them of special interest either in the garden or the cool house. All the species described in the list of hardly bulbs are suitable for pot and pan culture. The dwarf species do best in pans; the others in pots.

The compost for all the species should consist of two parts of sandy loam and one part of leaf-mould, with the addition of plenty of coarse silver sand. The bulbs should be planted five or six in a 5in. or a 6in. pot, according to their size, or an inch or so apart in pans 6in. to 12in. wide and 4in. to 6in. deep. Plant them two inches deep any time in September. Place in a cold frame, and give no water till growth begins. At this stage remove to the greenhouse, and water freely as growth proceeds. After flowering return to the cold frame, and when the foliage dies keep dry. Repot every two or three years. The Crown Imperial Lily (F. imperialis) also does well in pots. Plant one bulb in a 6in. pot, or three in an 8in. pot, and keep in cold frame till growth is well advanced; then place in the greenhouse. After flowering, return to the frame, and keep moist till the foliage dies. It will only be needful to repot every third year, top-dressing in the intervening years. Increased by offsets.

Galanthus.—Snowdrops make dainty little plants for cold-house culture, on account of their producing their flowers early in the year. All the species named in the list of hardy bulbs do well in pots or pans.

Half a dozen bulbs or so may be grown in a 3in. pot, or several may be planted an inch apart in shallow pans. Plant the bulbs an inch deep in any good ordinary soil, or two parts loam and one part leaf-mould, with a little sand, any time in September. Place the pots or pans in a cold frame, and otherwise treat as advised for Crocuses. Increased by offsets.

Galtonia.—G. candicans is a stately South African bulbous-rooted plant, bearing white fragrant Hyacinth-like flowers in summer, on spikes varying from three to four feet in height. A fine plant for the cold house, or for gentle forcing in the cool or warm house.

The bulbs require to be planted in October, either singly in 6in. pots, or three in an 8in. pot. The compost should consist of two parts of loam, one of well-decayed manure, and a little sand. Bury the bulbs so that their apex just shows through the soil. Stand the pots in a frame, and cover with ashes till growth begins, when remove to the greenhouse. Give a plentiful supply of water in spring and summer, and after flowering plant out in a sunny border, procuring fresh plants for pots. Increased by offsets.

Geissorhiza.—South African bulbous-rooted plants, flowering in May and growing about six inches high. The chief species are: Excisa, white; humilis, rose and yellow; and rochensis, violet-purple.

These bulbs should be grown in shallow pans, in a compost of equal parts peat, loam, leaf-mould, and sand; planted two inches apart and two inches deep in October; stored in a cold frame till growth begins; then placed in the greenhouse, watered freely till the foliage dies, and kept dry all winter. Increased by offsets.

Gelasine.—A South American bulbous-rooted plant. The only species is G. azurea, blue (May), 1ft.

Plant the bulbs in August one inch deep, and three or four in a 5in. pot, in a compost of two parts sandy loam, one part leaf-mould, and a little silver sand. Otherwise treat as advised for Babianas. Increased by offsets.

Gladiolus.—A well-known genus of very showy bulbous-rooted plants equally adapted for garden or greenhouse culture. The kinds specially suitable for pot culture are: Colvillei alba, white; ramosus, various colours; brenchleyensis, scarlet; and gandavensis in its numerous varieties. See also the selections on p. 179.

In the case of Colvillei alba (The Bride) and the ramosus section, the corms should be planted one inch deep and five in a 5in. or 6in. pot, early in November, the compost consisting of two parts of loam and one part of equal proportions of decayed manure, leaf-mould, and coarse silver sand. Place in a cold frame, and cover with fibre refuse till growth begins; then remove the fibre, keep in the frame till January, when transfer to the greenhouse. If flowers are required early place a few of the most forward plants in the warm greenhouse in February to force them on. During growth supply water freely, and when the foliage decays keep dry, repotting in November to flower again. Corms of the brenchleyensis and gandavensis kinds should be planted singly in 6in., or three in an 8in. pot, in March, kept in a frame till growth is well advanced, then placed in the greenhouse to flower. After flowering, gradually withhold water, and when the foliage has quite withered remove the corms from the soil, store them in a cool place in March, and plant out in the borders. Increased by offsets

Habranthus.—H. pratensis is a Chilian bulbous-rooted plant, bearing scarlet flowers in July, and growing one foot high. It belongs to the Amaryllis family. The modern name of this plant is Hippeastrum pratense.

The bulbs should be potted singly in a 5in. or 6in. pot

in September or October, and in a compost of two parts loam and one of equal proportions of peat, leaf-mould, and silver sand. Store in a cold frame under fibre refuse till growth begins, then transfer to the greenhouse, increase the supply of water as growth proceeds, and when the foliage begins to decay gradually withhold water, keep dry and in the greenhouse all the winter. Repot every third year, and give weak liquid manure the second and third years. Increased by offsets.

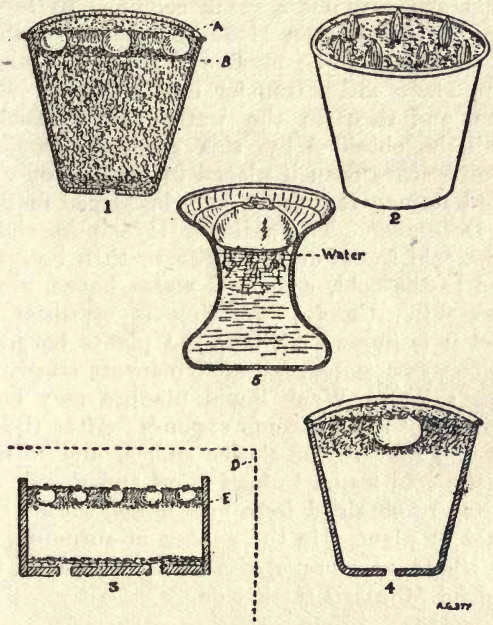
Homeria.—This genus, formerly known by the generic name of Bobartia, contains one species, viz., collina, orange, red, and yellow, flowering in May, which does well in pots in a cold house. Native of South Africa.

Plant the bulbs one inch deep and one inch apart in a 5in. pot, using a compost of equal parts loam, leaf-mould, and coarse silver sand. In other respects treat as advised for Babianas.

Hyacinthus.—The Hyacinth is one of the most popular and universally-grown of all bulbous plants for greenhouse decoration. It is a very accommodating bulb; may easily be forced to flower early in the year, or allowed to flower naturally in the cold house. The Roman Hyacinth may be had in flower as early as Christmas. The Dutch Hyacinth (H. orientale) flowers later, and exists in a great variety of colours; also has single and double flowers. The Roman Hyacinth is a white variety of the latter, its botanical name being H. orientale albulus. There is also a pretty dwarf species named H. ciliata or azureus (Syn. Muscari azureum), which bears blue flowers in February, and grows only four inches high. See also selections on p. 170.

Ordinary Hyacinths may be grown singly in 5in. or three in a 6in. pot, and Roman Hyacinths three or four in a 5in. pot. The most suitable compost in which to grow Hyacinths well consists of two parts loam and one part

each of well-rotted manure, leaf-mould, and coarse silver sand. The Roman Hyacinths are best planted in August for December flowering, and in September for blooming in January, while October is the proper period to pot the others. The bulbs should be buried so that their apices just shows through the soil, and the latter be pressed



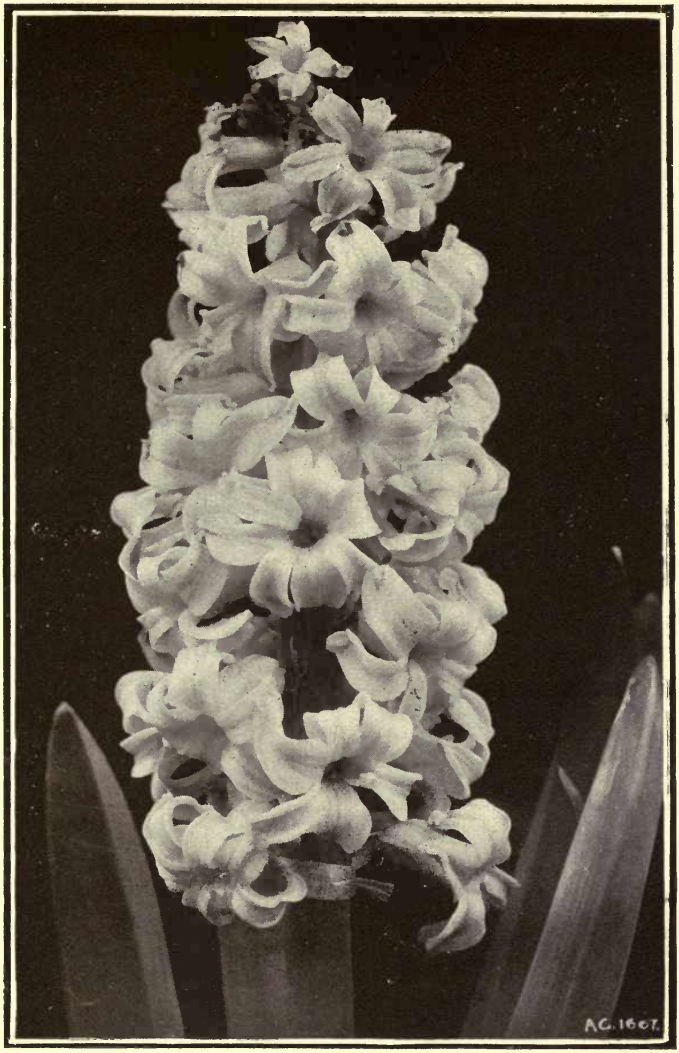
HYACINTH CULTURE.

Fig. 1, Roman hyacinths potted. Fig. 2, Period of growth for removal from ash bed. Fig. 3, Box culture and plunge bed, (E) Box, (D) Circumference of plunging material. Fig. 4, Dutch hyacinth in pot. Fig. 5, Hyacinth in a water-glass.

firmly into the pots. After potting place a pinch of silver sand over the apex of each bulb, and then stand the pots close together on a bed of cinder ashes in a cold, shady frame, or under a north wall outdoors, and cover with a

foot of fibre refuse or cinder ashes, the former being preferable. No water must be given before covering the pots. After six weeks examine the bulbs weekly, and remove any that have started to make growth from the covering material. At this stage the pots are best placed in a cold frame, and a small flower-pot inverted over each blanched young growth for a few days until it becomes accustomed to the light and assumes a green colour. In November the earliest-potted Roman Hyacinths will be sufficiently advanced in growth to be removed to the cold house. If wanted in flower early, transfer in a week or so to the cool house, and then to the warm one. Much finer flowers will be obtained by this gradual transfer to a higher temperature than if placed in heat at once. The later-potted Roman Hyacinths may be placed in the cold house in December. The ordinary Hyacinths should be kept in the cold frame until February; then be gradually introduced to the cold, cool, and warm house, according to requirements. Careful watering is essential at all times, and it is imperative that the plants be grown as near the glass as possible, in order to ensure sturdy foliage and flower spikes. Weak liquid manure may be given once a week until the blooms expand. After the plants have flowered remove the flower spikes, and return the plants to the cold frame to harden off and ripen. As the best results are obtained from new bulbs, those grown in pots should be planted in the garden in autumn. As regards H. ciliata or azureus, the bulbs should be treated as advised for Muscaris further on.

Iris.—The bulbous Irises are extremely pretty plants for cold greenhouse culture. Such species as bakeriana, Histrio, histrioides, orchioides, and reticulata produce a charming effect when in flower early in the year; and the many varieties of the Spanish and English Irises are equally effective and beautiful in late spring and early summer when grown in a cold house. All the species



HYACINTH "KING OF THE YELLOWS."

A FINE ROW OF BELLADONNA LILIES.

The Belladonna Lily (Amaryllis belladonna) is here shown flowering splendidly in an ideal position, a warm, narrow border at the base of a greenhouse. It revels in a warm, dry spot.

enumerated in the list of hardy bulbs are adapted for pot culture, so that we need not mention their names here.

September is the best time to pot bulbous irises, but the Spanish and English kinds may be potted as late as October. All require a compost of two parts sandy loam and one part of equal proportions of decayed manure, leaf-mould, and coarse silver sand. The dwarf species may be grown five or more in a 5in. pot, and the taller ones five in a 6in. pot, the bulbs being buried about an inch deep. After potting place the pots in a cold frame, plunging the pots to their rims in cinder ashes, and leaving the surface uncovered. The sashes should be left off the frame, except in wet weather, as the bulbs require cool treatment. The bulbs will not be long in making growth, and then water may be sparingly given. In November put on the sashes at night, and also on cold and damp days, but admit air freely. In due course the early-flowering kinds will begin to develop their flower spikes, and then they should be taken to the cold house. The late-flowering English and Spanish kinds should be kept in the frame till about April, then taken into the greenhouse. After flowering return the pots to the frame, and again plunge in ashes to ripen their bulbs; after which keep dry. The English and Spanish kinds should be planted out in the garden in autumn. The others may be retained in pots permanently, repotting every two or three years. The English and Spanish kinds do not force well. Increased by offsets.

Ixias.—Ixias are decidedly pretty spring-flowering bulbous-rooted plants, and easily grown in pots in a cold house. Especially interesting is the green-flowered viridiflora. Other pretty kinds will be found on p. 182. Natives of South Africa.

Ixias require to be potted in October, placing five or six bulbs in a 5in. pot, in a compost of two parts loam and

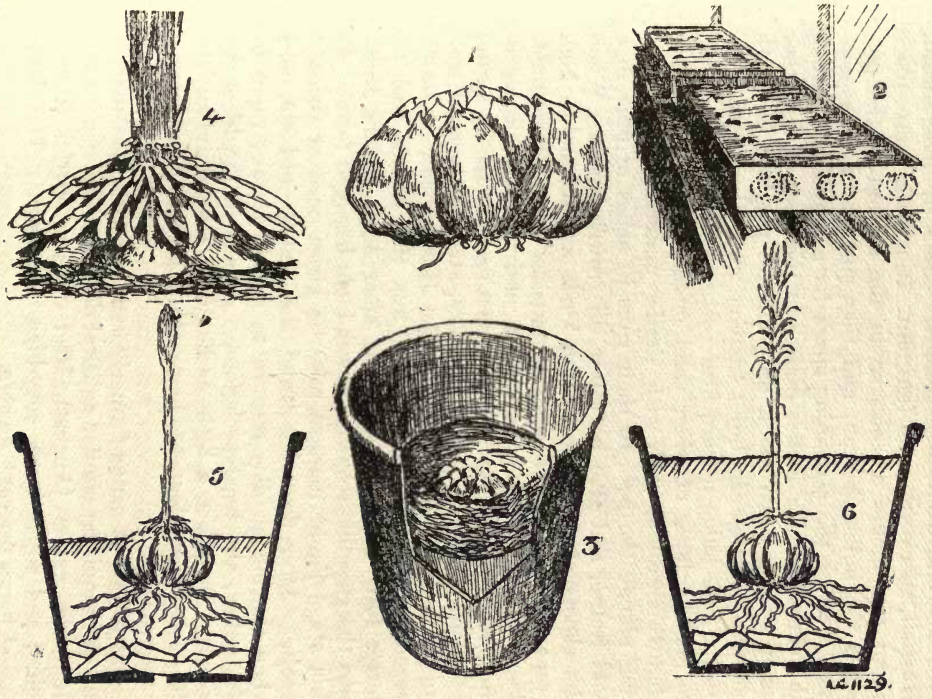
one of equal proportions of well-rotted manure, leaf-mould, and coarse silver sand. Plunge the pots to their rims in ashes or fibre refuse as advised for the irises, and let them remain in the frame till about the middle of February; then transfer to the cold house. Treat in all other respects as advised for the dwarf irises. Increased by offsets.

Lapeyrousia.—L. cruenta, known also as Anomatheca cruenta, is a South African bulbous-rooted plant bearing crimson flowers on elegant spikes a foot long, in summer. It makes a pretty plant.

Plant five bulbs in a 6in. pot any time in September, using a compost of equal parts of loam, leaf-mould, and coarse silver sand. Plunge the pots to their rims in ashes or fibre refuse in a cold frame, and transfer to the cold house early in March. Give no water till growth has well begun, and then only sparingly till April, when apply it freely. After flowering treat as advised for Irises. Increased by offsets.

Lilium.—Several kinds of lilies, as auratum, speciosum, Henryi, Hansoni, Krameri, excelsum, tigrinum, candidum, and umbellatum, thrive exceedingly well in pots, and make very attractive plants for the cold house in summer. So, too, do longiflorum and its varieties eximium (Harrisii) and Wilsoni. Indeed, all the hardy species may be grown in pots if desired.

So far as culture is concerned, all the species, except candidum, will thrive in a compost of two parts loam, one part peat, and one part of equal proportions of leaf-mould and coarse silver sand. The addition of a little fine charcoal is beneficial. For L. candidum two parts of loam and one of leaf-mould, with a little sand, will suffice. The lilies may be grown singly in 6in. pots, three in an 8in. pot, or five in a 10in. pot. Good drainage must be provided, and this covered by a thin layer of rough siftings.



HOW TO POT LILY BULBS.

1, Bulb received in a limp condition. 2, Bulbs placed in fibre in box. 3, Depth for placing bulb in pot. 4, Stem roots in search of food. 5, Development of roots. 6, Bulb after top-dressing.

Some Lilies have two sets of roots, basal and stem. These are auratum, Hansoni, Henryi, Krameri, longiflorum, Harrisii, speciosum, and tigrinum. In potting these, place about two inches of compost in the bottom of the pot, place the bulbs thereon, and then just cover with compost, leaving the remaining space for a top-dressing when the shoots are six inches high. In the case of the other kinds having basal roots, only fill the pot half full with compost, arrange the bulbs thereon, and fill up with compost. Lily bulbs require firm potting. It is a good plan to place a layer of silver sand under each bulb, and to slightly surround each with similar material. After potting plunge the pots to their rims in ashes or fibre in a cold frame, and give no water till growth begins. When the shoots of the stem-rooting kinds are six inches high prepare a compost of equal parts peat, loam, leaf-mould, decayed manure, and silver sand, and fill up the space in the pots with this, pressing it down firmly. In the spring let them have plenty of air by day, and see they are well supplied with water. Kinds like Harrisii can be transferred early to the greenhouse, but the others will do better fully exposed to the air after April, taking them into the greenhouse when flower buds begin to form. At this stage liquid manure may be given once or twice a week. After flowering stand the plants outdoors, and when the foliage dies remove to a cold frame; repot in November, and treat as before. If any of the lilies are required to flower a little earlier they may be placed in the cool or warm house to hasten their period of flowering.

Lycoris.—A genus formerly included with the Amaryllis, and requiring similar cultural details. The species are L. aurea, yellow (August), 1ft.; radiata, scarlet (June), 18in.; and squamigera, rosy-lilac (August). The last-named bears fragrant flowers.

Merendera.—Bulbous-rooted plants allied to the

Colchicums, and requiring the same cultural conditions. The principal species are those named in the list of hardy bulbs.

Milla.—M. biflora is a Mexican bulbous-rooted plant bearing white flowers in late summer, and growing about six inches high.

The bulbs may be grown in shallow pans or in 5in. pots, in a compost of two parts loam, one part leaf-mould, and one part coarse silver sand. Plant the bulbs an inch deep and an inch apart, in September; place in a cold frame till growth begins; then remove to the greenhouse, and otherwise treat as advised for irises. Increased by offsets.

Muscari.—The Muscaris are charming bulbous-rooted plants, natives of Europe, Persia, etc., and bearing pretty blue or white flowers in March and April. Although all the species mentioned in the list of hardy bulbs elsewhere may be grown in pots or pans with great success, preference should certainly be given to botryoides, blue, 6in.; botryoides alba, white; and conicum (Heavenly Blue), rich blue, 6in. These three will give great satisfaction, and produce a brilliant effect in the greenhouse in spring.

The bulbs of botryoides should be planted an inch apart and an inch deep in 5in. pots, or in pans 4in. deep and 6in. to 12in. in diameter; those of Heavenly Blue an inch deep and two inches apart in similar pots or pans. Two parts of loam and one part of equal proportions of leaf-mould, decayed cow manure, and coarse silver sand, will grow these bulbs to perfection. Plant in September or October, place in a cold frame under a covering of fibre refuse till growth begins, then remove to the greenhouse. Water freely during growth. After flowering return to a sunny cold frame, gradually withhold water, and finally keep dry, repotting in October and treating as before advised. Increased by offsets.

Narcissus.—In the genus Narcissus we have most beautiful subjects for pot culture in the cold house. Apart from the wealth of lovely varieties now in cultivation, there are several of the species that particularly commend themselves for pot culture. The Hoop Petticoat Daffodil (N. Bulbocodium) and its varieties; Cyclamen-flowered Daffodil (N. cyclamineus); Miniature Daffodil (N. minimus), growing three inches high only; and the Angel's Tears Daffodil (N. triandrus albus), are exceedingly interesting species, growing only six inches high, which will well repay for culture in the cold house. The Jonquils, again, are also pretty kinds for a similar purpose. For names of other sorts see selections on p. 175.

The Miniature Daffodil (N. minimus) does best in a shallow pan, 4in. deep and 6in. to 8in. wide. N. cyclamineus, triandrus, Bulbocodium, and juncifolius may also be grown in similar pans. In the case of minimus, plant the bulbs an inch apart, and the others two inches apart. The other kinds may be grown in 5in. or 6in. pots, placing five of the small bulbs in a 5in. or three or four of the larger ones in a 6in. pot. In all cases plant the bulbs so that their tips just show through the soil. Kinds like Bulbocodium, cyclamineus, triandrus, juncifolius, and minimus should be planted in August or early September; the others in September or early October; and the Polyanthus kinds in August. For the Bulbocodium, minimus, cyclamineus, and triandrus type the compost should consist of two parts sandy loam, one part of leaf-mould, and one of coarse sand. For the others use a similar compost, but substituting well-decayed manure for the leaf-mould. Press the compost firmly in the pots. The kinds advised for pans should be plunged to the rims in fibre refuse in a cold frame; the rest covered with fibre refuse and left thus till growth begins. Directly the growths are an inch or so high in the pans remove the pans to the cold house, placing them on a shelf near the glass. The others, too, may be brought into the house by degrees when their

growths are three inches long. To get the Polyanthus kinds early into flower place a few in the cool and a few in the warm house. The other sorts, however, grow more sturdily and produce finer flowers if not subjected to heat. Still, sorts like Sir Watkin, Empress, and Horsefield force very well. When growth is active give plenty of water. Soot-water is a splendid fertiliser for Narcissi in pots; it imparts colour to the foliage, and assists in the development of the blooms. Other manures are not advised for Narcissi. Of course, plenty of air on fine days is essential. After flowering continue the supply of water till the foliage dies, then withhold it. Those grown in pans should be stood in a sunny cold frame, and protected from heavy rains. The others may also be placed in a frame till the foliage is dead; then the bulbs should be removed from the soil, stored in a cool place, and planted out in the garden, procuring fresh ones for pots. Those in pans may be left undisturbed till August; then be replanted in fresh soil to flower the next year. Increased by division.

Ornithogalum.—A genus of bulbous-rooted plants, popularly known as the Star of Bethlehem. The species that may be grown in pots in a cold house are: Nutans boucheanum, white (spring), 1ft.; umbellatum and its varieties Leichtlinii and splendens, green and white (May), 1ft.; and lacteum (Chickereekie), white.

The foregoing species should be grown in a compost of two parts loam and one part each of peat, leaf-mould, and coarse silver sand. Plant in October, placing five bulbs or so in a 5in. pot, then placing in a cold frame till growth begins, after which remove to the greenhouse. Supply water freely during the period of growth, and keep dry after the leaves fade. Repot annually in October. Increased by offsets.

Pancratium.—P. illyricum, white (summer), 1ft.; and P. maritinum, white (summer), 18in.; natives of

South Europe. May be grown in pots in a cold house. Both are pretty and very interesting bulbous plants.

These should be planted singly in 5in. or 6in. pots, in October, in a compost of two parts loam, one part of decayed manure, and one part of coarse silver sand. Plunge the pots to their rims in fibre refuse in a cold frame until growth commences; then transfer to the cold house. From thence, and until the foliage fades, give plenty of water, and keep dry during the winter. Repot every third year. Liquid manure may be given during the second and third years. Increased by offsets.

Puschkinia.—P. scilloides is a pretty little bulbous-rooted plant, bearing squill-like, striped white and blue flowers in April, and growing about six inches high. A native of the Orient. Compacta is a dwarf variety of it.

It requires to be grown in pans, and in every other respect similarly to the Chionodoxas, which see.

Rigidella.—Two species — flaminea, orange-purple; and immaculata, scarlet and yellow, both May-flowering —only are worthy of culture. Natives of Mexico and South America.

Grow in equal parts of loam, peat, and sand, and treat as advised for Ixias.

Scilla.—The Squills are excellent bulbous-rooted plants for pot or pan culture in cold greenhouses. S. sibirica, blue (February), 6in.; sibirica alba, white; and bifolia, blue (March), 6in.; and its varieties alba, præcox, and rosea, are particularly pretty kinds to grow thus.

They require precisely the same treatment as Crocuses and Snowdrops, which see.

Sparaxis.—S. grandiflora bears white, violet, and crimson flowers in May, on graceful spikes one to two feet high; and tricolor, a very beautiful species, bears orange,

yellow, purple, and brown flowers on spikes a foot high, also in May. Both are charming bulbous-rooted plants for the cold house.

Culture as advised for Ixias.

Sternbergia. — Autumn-blooming, bulbous-rooted plants, growing from 4in. to 12in. high, and bearing yellow flowers. The kinds best suited for pot culture are lutea major and macrantha.

The bulbs should be planted an inch deep and an inch or so apart, in pans 6in. deep and 8in. to 12in. in diameter, in August. The compost should be two parts of loam, one of leaf-mould, and one of coarse silver sand. After potting plunge the pans to their rims in fibre refuse in a cold frame till growth begins; then remove to the cold house. Water moderately. After flowering, and growth is completed, withhold water. As these bulbs rarely flower well a second year in pots, they should be planted out in a sunny spot in the garden in August, and fresh ones procured for pot culture. Increased by offsets.

Tecophilæa.—T. cyanocrocus (the Chilian Crocus) is a Chilian species, which bears fragrant gentian-blue flowers with a white eye in March. The flowers are Crocus-like, and the perfume is similar to that of the Sweet Violet.

Best grown in pans 4in. deep and 6in. to 8in. in diameter. The corms should be planted an inch deep and an inch apart in a compost of equal parts loam, peat, leaf-mould, and sand, in August. Plunge the pans to their rims in fibre refuse in a cold frame till growth commences; then place them in the greenhouse. No water should be applied till growth begins, when give a moderate supply. After flowering remove to a sunny cold frame to ripen the bulbs, keep dry after the foliage fades, and repot in August. Increased by offsets.

Tigridia.—The Tiger Flowers are exceedingly hand-

some bulbous-rooted plants, with richly-coloured flowers. All the species and varieties named in the list of hardy bulbs are suitable for pot culture. They flower in July, and are natives of Mexico.

Plant three bulbs in a 5in. pot early in April. Two parts loam, one part peat, and one part of coarse silver sand will be a suitable compost. Place in a cold frame under fibre refuse till growth begins, after which remove to the greenhouse. Water freely until the foliage fades; then cease the supply, remove the bulbs from the soil, and place them in a dry, frost-proof place till April, when repot or plant outdoors. Increased by offsets.

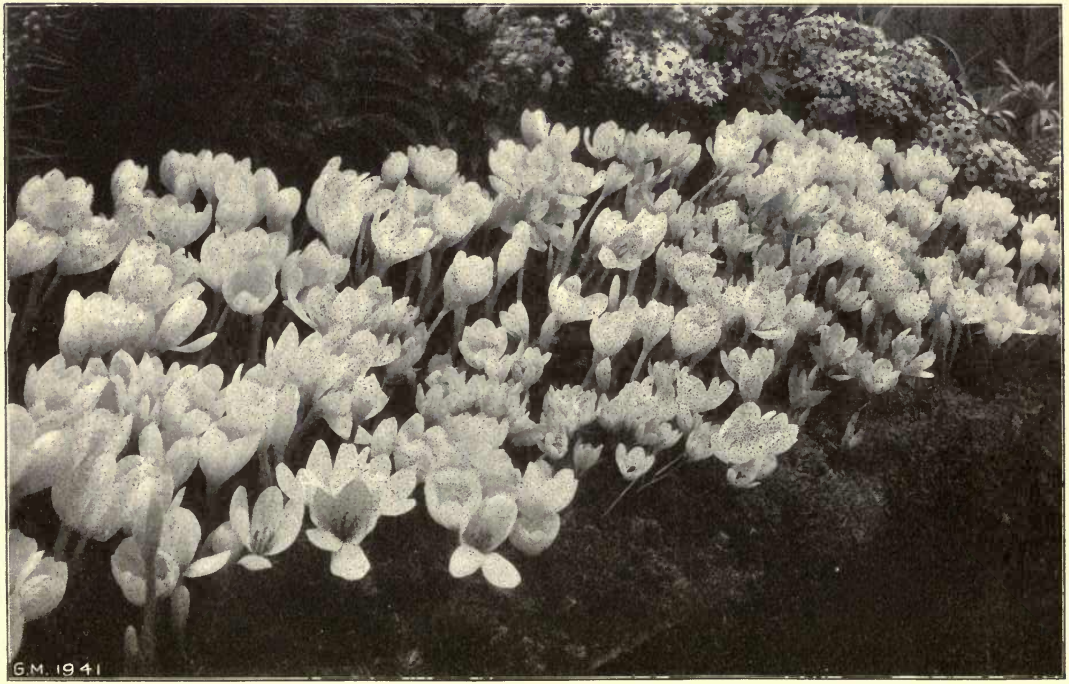
Tritonia.—South African bulbous-rooted plants, formerly known as Montbretias. Although usually grown outdoors, yet their showy character and their comparatively easy culture render them by no means uninteresting plants to grow in pots in a cold house, to flower in early summer. T. crocata, orange; crocosmiæflora, orange-scarlet; and Pottsii, vermilion-scarlet, are suited for pot culture.

They should be grown in a compost of two parts sandy loam, one part of well-decayed manure, and one part of coarse silver sand. Five bulbs may be grown in a 5in. pot. Plant the bulbs an inch deep, and then treat as advised for Ixias. Repot annually, always choosing the largest corms, and then good results will be ensured. Increased by offsets.

Tulipa.—All the species named in the list of hardy bulbs, and scores of varieties named in trade lists, may be easily grown in a cold house. If early supplies of flowers are desired, the early-flowering Duc Van Thol type may be easily forced in the warm house. Those who have cold greenhouses and little garden space may certainly grow any or all of those named in the list of hardy bulbs published elsewhere, or any of the single or double varieties

LARGE AUTUMN CROCUS (CROCUS SPECIOSUS).

A blue-flowered species from Asia Minor. Does well on the rockery or naturalised in turf. Flowers in September.



COLCHICUM SPECIOSUM AND C. S. ALBUM.

Showy autumn-flowering bulbs which produce their flowers before the leaves. Excellent for naturalising

sold by the trade. Any bulb dealer will supply a suitable collection of Dutch varieties adapted for pot culture. We would, however, specially commend to the enthusiastic amateur and possessor of a cold house the cultivation of such lovely forms as billietiana, yellow and red; clusiana, rose, red, and violet; Didieri, crimson, indigo, and primrose; elegans, crimson, vermilion, and yellow; Greigi, orange, scarlet, and black; kolpowskyana, yellow and rose; persica, yellow and bronze; retroflexa, yellow; and vitellina, yellow, as specially interesting kinds to grow in pots. See also the selections on p. 172.

Tulips of any kind do well grown in a compost of two parts loam, one part decayed manure, and one part coarse silver sand. Plant three in a 5in. or four in a 6in. pot early in November, burying the bulbs so that their apex just shows through the surface. Make the compost quite firm. The species named above should be plunged in fibre refuse in a cold frame until growth begins; then be removed to the cold house. The early-flowering sorts should be treated similarly, but, if wanted early, be transferred first to the cool and then to the warm houses by easy stages, but as soon as the flowers open they will last longer in perfection if placed in the cold house during the flowering season. Those that flower naturally in May, and which are described in the list of hardy bulbs, are best not subjected to heat, but kept in the cold house. Duc Van Thols, required to flower at Christmas or soon after, should be potted in August or early in September. After flowering, transfer all kinds to the cold frame to complete their growth. When the leaves fade take the bulbs from the soil, carefully dry and store them in a cold place till October or November. Choice kinds may be repotted then, but ordinary Dutch forms, or such as have been forced, are best planted out in the garden and new ones purchased for pot culture. During the growing period give an ample supply of water; when at rest give none. Increased by offsets.

Watsonia.—This genus of South African bulbous-rooted plants resemble the gladioli in habit of growth and manner of flowering. They are well adapted for cold-house culture, or for forcing into flower early, similarly to Gladiolus Colvillei The Bride. The species and varieties are W. meriana, purple-scarlet; meriana coccinea, scarlet; meriana iridifolia, white; meriana rosea-alba, white and pink; and rosea, rose. W. meriana iridifolia alba is valuable for yielding flowers for cutting.

The cultural details are similar to those advised for Gladiolus Colvillei and its varieties.

Zephyranthes.—Beautiful South American bulbous flowering plants. The species adapted for pot culture are those mentioned in the list of hardy bulbs.

They should be grown three in a 5in. pot, in a compost of two parts loam, one part peat or leaf-mould, and one part of coarse silver sand. Plant the bulbs an inch deep in August, and otherwise treat as advised for Babianas.

CHAPTER V.

FORCING BULBS.

To have bulbs in flower at Christmas, or in the months of January or February, certain special kinds must be selected, given special treatment, and be grown in a higher temperature than under ordinary conditions. A hothouse or a warm greenhouse is indispensable to ensure early flowers. The bulbs, moreover, must be potted

earlier than those that are to be grown in the cold or cool greenhouse. Roman Hyacinths, for example, that are required to flower at Christmas must be potted as early in August as is possible, and those for flowering in the New Year, not later than the middle of September.

Bulbs that Force Well are narcissi, early tulips, Roman hyacinths, freesias, and jonquils. In the way of Narcissi the best sorts are Golden Spur, bicolor Horsfieldi, Empress, Stella, Sir Watkin, poeticus ornatus, Paper White, Double Roman, Grand Monarque, White Perfection, Soleil d'Or, telemonius plenus, Henry Irving, Queen of Spain, and Madame Graaff. The white Roman and the Pink Italian are good varieties of Hyacinths for the earliest crop, and any of the others may be grown to flower in January and February. Of Tulips the single Duc Van Thol varieties and the White Pottebakker, Proserpine, and Vermilion Brilliant are all good sorts. Allium neapolitanum, Freesias, Lilium Harrisii, and Gladiolus Colvillei The Bride are likewise useful bulbs for forcing.

Potting and Boxing the Bulbs.—Small quantities of narcissi, hyacinths, and tulips may be grown in 5in. pots, but where a large number of flowers are desired they should be grown in boxes 4in. to 6in. deep, 12in. to 18in. wide, and 2ft. to 3ft. long. Narcissi do well grown thus. The soil should be similar to that advised for each kind in the chapters on warm, cool, and cold house bulbs. Those that are to be grown in boxes should be planted about a couple of inches apart. Press the compost down firmly, then stand the pots or boxes at the foot of a north wall outdoors, and cover with a foot or so of fibre refuse or cinder ashes; or store them in a cold frame until they begin to grow. In November the Roman hyacinths and the Paper White narcissi will be forward enough to move into the cool house for a week or two, after which transfer

to the warm house or the hot house, to bring them into flower. It is most essential that the bulbs should be well rooted before they are placed in heat; otherwise they will only throw stunted or deformed flowers. To obtain a long succession of flowers, only a few should be introduced into heat at a time, some being left in the cold frame, and others placed in the cool house. As the bulbs come into flower remove them to a cooler house; then their flowers will last a longer period in perfection. Keep the plants not too far from the glass, in order to avoid an attenuated growth. After flowering, bulbs of narcissi, hyacinths, and tulips should be gradually hardened and planted out in the garden, fresh bulbs being procured annually for forcing. See also note on " Retarded Bulbs " on p. 190.

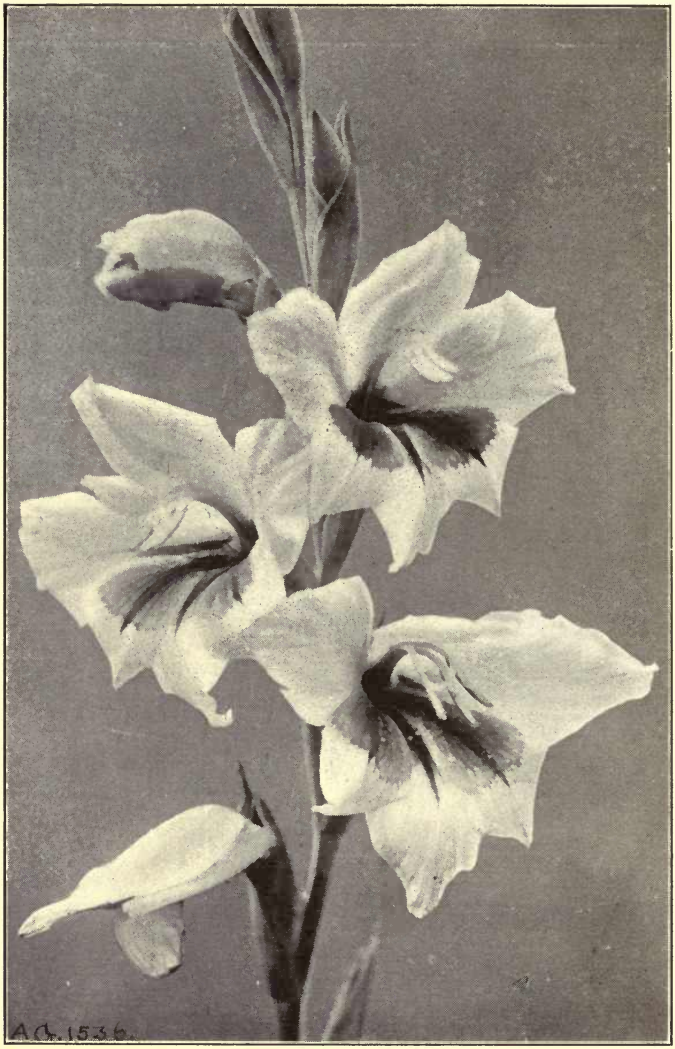
CHAPTER VI.

BULBS IN FRAMES.

Some of the more choice and tender bulbs that fail to thrive outdoors may be grown in cold frames, as the Calochorti, for instance. Here the grower is able to afford them the slight protection they require from frost and excessive rains during the flowering and ripening period. Ixias, sparaxises, babianas, besseras, bravoas, brodiæas, many of the fritillarias, gelasines, habranthuses, irises, Milla biflora, Tecophilæa cyanocrocus, and zephyranthes are genera which may, in cold districts, be grown in prepared beds of the composts advised for each on pp. 48 to 76, in cold, sunny frames.

A PRETTY WHITE IXIA.

The Ixias, or African Corn Lilies, are charming half-hardy bulbous plants for pot or frame culture, as well as for growing in warm sheltered beds outdoors. The variety figured is White Queen. Its flowers are white with a distinct crimson eye.



GLADIOLUS LEMOINEI, GIL BLAS.

Colour, pale salmon, with a heavy blotch; flowers in late summer.

Compost.—The natural soil should be dug out to a depth of two feet, and a foot of broken bricks placed in the bottom to serve as drainage. Over this place a layer of turfs grass-side downwards. The space inside the frame should be divided into small beds according to the number of bulbs of each kind to be grown, using bricks on edge for the divisions. The depth of each bed above the layer of turfs should be sixteen inches, thus bringing the surface above the level of the outside ground. Fill each compartment or bed with special compost, then plant the bulbs.

General Culture.—The after treatment consists of giving air freely, even in winter, on fine days, and removing the sashes entirely in fine weather in spring and summer. Watering must be carefully attended to. In autumn and winter practically none will be required; but in spring, when growth becomes active, give sufficient to keep the soil moist. Exposure to warm spring and early summer rains will be beneficial, but when the ripening period begins, protection from rain must be afforded; yet plenty of air must be admitted at the same time. A mulching of cow manure will be helpful, and should be applied when growth commences. About every third or fourth year the bulbs should, as a rule, be lifted and replanted in renewed compost, but so long as they show no signs of deterioration they may remain undisturbed. Given the foregoing simple code of treatment, many of the more tender and beautiful half-hardy kinds may be grown with success in a cold frame.

Part IV.—MISCELLANEOUS.

CHAPTER I.

PROPAGATION.

Nearly all bulbous and tuberous-rooted plants may be increased by seeds, scales, or offsets. The latter is the easiest method of the two, because it is possible to get flowering-sized bulbs much earlier than from seeds. Bulbs, as a rule, take from three to five or more years to reach their flowering age, whereas offsets may be had in flower when a couple of years old or so. In the case of hyacinths, tulips, and crocuses, these hardly pay the small grower to rear from seed, as far better bulbs, reared by skilled experts in soil specially adapted for the purpose, are to be obtained at a cheap rate every year from Holland.

By Seeds.—The first consideration is the seed. This may be gathered from the plants when fully ripe, in which case it should be sown at once. All bulbous and tuberous-rooted plants do not, however, bear seeds that will ripen sufficiently in this country to germinate, and, unless they are fully ripe, it is a waste of time to sow them. Generally speaking, the seed-pods should be gathered when they assume a brownish tinge and begin to open. Then

is the time to gather and place them in a warm position to complete the ripening process. Seedsmen offer seeds of a few bulbous and tuberous-rooted plants, such as freesias, cyclamen, etc., but the supply is limited. Anyway, if the seeds can be obtained they should be sown at once, no matter what period of the year it may be. A suitable compost for all seeds of bulbous and tuberous-rooted plants is one composed of equal parts of loam, leaf-mould, and silver sand. This compost should be placed in pans, shallow boxes, or pots, each being well drained. Press the soil down evenly and firmly, and leave an inch of space between the soil and the top of the box or pan Sow the seeds thinly, and just cover with fine soil; then water thoroughly, and cover with a pane of glass. Seeds of hothouse kinds should be reared in a temperature of 75 to 85 deg.; warm greenhouse ones in a temperature of 55 to 65 deg.; cool greenhouse ones in a temperature of 45 to 55 deg.; half-hardy ones in a cold greenhouse; and hardy ones in a cold frame.

Subsequent treatment consists of keeping the soil just moist, and shading from sunshine. Some seeds will germinate in a month or two; others in six months; and others, again, may be a year before doing so. It will, therefore, be understood that considerable patience is required in rearing bulbs from seed. When the seedlings do appear, and can be easily handled, they will require to be carefully transplanted either singly in thumb-pots or placed an inch or so apart in pans or boxes in similar compost to that used for seeds. They should be allowed to remain thus for a year; then the hothouse and greenhouse kinds may be transferred to larger pots, and the hardy ones likewise, or planted out in a bed of sandy soil in a cold frame. In the third year treat the indoor kinds as advised for the parent bulbs, and the hardy ones plant out in prepared beds in the open, treating them precisely as advised for hardy bulbs generally. Some may flower when three or four years old, while others, like lilies, will

not do so till six or seven years old. We cannot, owing to want of space, specify which bulbs can or cannot be easily reared from seed. This information can be obtained from our "Encyclopædia of Gardening." See advertisement pages elsewhere.

Nearly all hardy bulbs, including lilies, may be reared from seed in the open air. For this purpose, mark off a bed three feet wide, well fork up the soil, and mix plenty of leaf-soil and grit with it; then draw drills a quarter-inch deep and six inches apart; sow the seeds thinly, and cover with soil. Leave the seedlings undisturbed for two years, then transplant in other prepared beds.

By Offsets.—This is a simple method of propagation, easily carried out by the merest novice. It merely consists of separating the baby bulbs or cormlets from the parent bulb when lifting for storing, or for transplanting, or when repotting indoor plants. The offsets of hardy bulbs should be sorted into two sizes, large and small, and each be replanted separately at the periods and in the manner advised for parent bulbs. The larger sizes may flower the second or third year, and the smaller ones the third or fourth year. The indoor offsets must be grown on in pots in their respective soils and temperatures until they attain a flowering size. The Eucharis Lily and the Vallota and Hippeastrum, among indoor kinds, readily produce offsets; while the narcissi, crocus, gladioli, tulip, chionodoxa, etc., are equally proliferous among outdoor bulbs. Except in the case of Cottage Tulips and their species, it is hardly worth while trying to rear bulbs from offsets, and it is equally futile to rear hyacinths thus, as they give poor results in comparison with imported bulbs. Generally speaking, all other kinds are well worth the trouble of rearing from offsets where time and space permit of it being done, and there is a desire to rear home-grown bulbs.

By Bulbils.—In the axils of the leaves of Lilium bulbiferum and tigrinum tiny bulbs frequently develop. If these are removed in early autumn and sown in shallow boxes of sandy loam and leaf-mould, and treated like seeds, keeping the box in a cold frame, they will make little plants to plant out the succeeding year, and flower in the fourth or fifth year. The Boussingaultia produces similar tubers on its stems, and these may be treated in the same way.

By Scales.—Another method by which lilies may be increased is by pulling off the large fleshy scales at the base of the bulb, and inserting these half-way in a box of light sandy soil, placing the box in a cold frame for a few weeks, then removing it to a warm greenhouse. In due course little bulblets will form at the base of the scale, and, when this takes place, gradually harden the bulbs off and plant out in prepared soil in the open.

By Division.—Gladioli that have two or more buds developed on a corm may be divided into as many parts with a sharp knife. Do this at planting time, and rub the wounds over with slaked lime or sulphur to stop bleeding of the tissue. The same applies to tuberous-rooted begonias and caladiums. In the last two cases dust the wounds with flowers of sulphur.

By Leaf Cuttings.—Gloxinias are readily increased by means of their fleshy leaves. For this purpose fully-developed fleshy leaves must be chosen. One method is to fill a shallow pan with a compost of equal parts peat, leaf-mould, and silver sand, and cover the surface with about $\frac{1}{8}$in. of silver sand. The leaf should then be turned over with its back uppermost, and the thick ribs cut through where the laterals join the main rib. After this is done reverse the leaf and lay it on the sand in the pan; place a pebble here and there to keep it in position. Stand

the pan on the staging in a warm house, and see that the soil is kept uniformly moist. In a month or so embryo tubers will form at the cut portions of the ribs, and later a bud will develop and produce leaves. When this takes place separate the young tubers from the leaves and plant them in pots. The other method is to cut off the upper half of the leaf, and then to insert the stalk end of the lower half a few inches apart in pots or pans of sandy soil. Leaves thus treated will also form tubers at the base of the leaf-stalk, which will in due course give birth to a tiny plant.

CHAPTER II.

PESTS AND DISEASES.

Bulbous and tuberous-rooted plants, like other classes of the vegetable kingdom, are not immune from the attacks of numerous insect, animal, and fungoid enemies. Thanks, however, to modern scientific investigation, and a better knowledge of the life-history of all, or nearly all, plant pests and diseases, it is possible to cope with them more effectually than in the past. Experience has shown that, where proper cultural conditions are observed, and preventive measures adopted, plants may be rendered immune from attack. Once allow any pest to secure a foothold on bulb, tuber, or leaf, considerable difficulty is experienced in eradicating it, and there still remains the fact of the injury resulting from the attack, which may, or may not, be of a serious nature, crippling the future growth of

the plant. Prevention, therefore, is better than cure. We will now proceed to give a brief description of each pest, dividing them into two sections, insect and animal pests, and fungoid diseases.

I. INSECT AND ANIMAL PESTS.

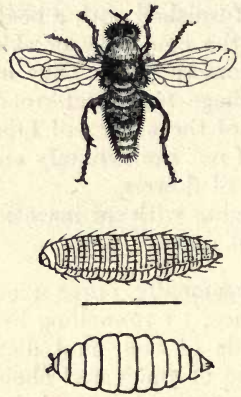
Aphides.—These, popularly known as "greenfly," and of which there is said to be fully 200 species, are small pale green insects, furnished with a beak-like mouth, with which they pierce the epidermis or skin of the leaf, and suck out the sap from the cells, thus injuring the tissues and causing the foliage to be deformed. They are very partial to the tips of the shoots of Lilium Harrisi grown under glass, and, if not immediately eradicated, will prevent the formation of flowers.

Remedies.—Syringing with an insecticide, directly they are seen, is the best remedy.

Ants.—Ants occasionally prove troublesome in beds, borders, and rockeries, by tunnelling beneath the surface, throwing up mounds of soil, and disturbing bulbs and tubers. In the case of small and choice bulbs much injury is likely to accrue, owing to their presence. They also run about the leaves of lilies infested with greenfly in search of the honeydew deposited by the latter; and will, in fact, carry these insects about to fresh positions to encourage them to produce the aforesaid secretion. Darwin, indeed, called the greenfly the milch cow of the ant.

Remedies.—The simplest way of getting rid of ants in the soil is by asphyxiation—viz., making holes six inches deep and a few inches apart in their nests, dropping in a large pinch of a soil fumigant, and then closing the holes firmly with soil. The fumes from this will permeate the soil and suffocate the ants.

Narcissus Fly (Merodon narcissi).—Of late years the larva of this fly has been found to do serious injury to the bulbs of Narcissi. The larvæ are of a yellow or brownish tint, and about half an inch long. They feed upon the scales in the centre of the bulb, and cause them to become soft and spongy and to decay. The fly is bee-like in shape, and black in colour, and appears during spring. then laying its eggs on the bulbs, the resultant maggots afterwards gnawing into the centre.



Narcissus Fly, Larva, and Chrysalis.

Remedies.—(1) Burn all bulbs that feel soft or spongy to the touch. (2) Immerse bulbs suspected of containing the maggots in water for a week or so, to drown them. Do this in August. (3) Trap the flies by placing saucers of syrup or molasses among the plants in spring.

Thrips.—An active little insect which is harmful both in its perfect and larval state. The perfect insect is of a pale brown hue, and very agile in habit, jumping off like a flea when disturbed. The larvæ are pale yellow.

Both feed on the undersides of the leaves of indoor plants, sucking out the sap and causing the foliage to assume a pale, sickly hue. If allowed to increase rapidly they will soon render Eucharises, Cyclamen, etc., unhealthy.

Remedies.—In case of attack syringe the foliage with an insecticide, or fumigate with one of the nicotine compounds.

Mealy Bug.—A most troublesome pest, fortunately confining its attacks to hothouse and greenhouse plants only. The female insect is wingless, and has an oval body about ⅛in. long, covered with a white mealy powder. The male is smaller and winged. It is the former that gives the gardener so much anxiety and trouble once it gains access to a hothouse or greenhouse. By means of its beak it pierces the leaves and shoots, and sucks out the sap. It establishes itself along the mid-ribs of the leaves, and at the base of the leaf-stalks; and, as it multiplies very fast, soon becomes a nuisance.

Remedies.—The infested plants should either be carefully sponged or well syringed with an insecticide. This remedy should be persisted in until every vestige of the pest is eradicated.

Rats and Mice.—The Rat, the Long-tailed Field Mouse, and the Common Vole are destructive to outdoor bulbs in some districts.

Remedies.—Laying down poison, where there are no domestic animals, is a good remedy for destroying them. Traps baited with toasted cheese and then sprinkled with the following scent to attract the rats will generally lure them to their doom: Aniseed, ½oz.; aquafortis, 3 drops; musk, 1 grain. Mix the musk and aniseed well together; then add the aquafortis, and sprinkle the mixture freely over the trap. Mice and voles may also be trapped with toasted cheese as a bait, or the bulbs protected from attack by placing them in water for a short

time, then rolling them in powdered red lead before planting.

Sparrows.—These feathered vagabonds possess the bump of wilful destructiveness. In spring, when the crocuses are in flower, they peck off the petals and destroy the beauty of the blossoms.

Remedies.—To guard against this injury, stretch lines of black cotton fixed to short sticks a few inches above the flowers. This will frighten the mischievous creatures away.

Moles (Talpa europæa).—These creatures often do much harm in gardens by burrowing beneath lawns and in beds and borders. Their natural diet consists of earthworms, wireworms, grubs, and slugs, so in this sense they render service to the gardener; and, as they are voracious feeders, the number of worms they dispose of must be great. However, there is no getting away from the fact that they do serious harm by burrowing in the garden, and therefore cannot be tolerated.

Remedies.—(1) Trapping is the surest way of getting rid of moles, but it requires a good deal of skill to do this, as the Mole is a wary creature. His sense of smell, moreover, is very acute. Iron mole-traps are the best kind to use, and these should only be handled by gloved hands. Find out the principal runs, open the soil with a spud or trowel, not with the hands; set the trap, and fix it directly across the run; then cover with soil. We may here mention that it is no use setting a trap in a mole-hill; leave this alone. If a trap be set in every run the culprit is bound to be caught ere long. (2) Collect half a pint of earthworms, take them to a chemist and get him to add one drachm of powdered strychnine to them. Stir them up well for a few minutes; then find out the runs, make a hole here and there with a stick, and drop in one of the worms, closing the hole with soil. The greedy mole will

FRITILLARIA MELEAGRIS.

The Native Snake's-head Fritillary grown in fibre in a bowl. A fine species also for naturalising in grass. Flowers purple, yellow and white ; borne in May.

[*Photo: G. W. Leak.*

TULIP CULTURE IN FIBRE.

As the illustration admirably testifies, Tulips do remarkably well grown in moss fibre compost. The variety is Queen Victoria (Syn. La Reine). A white and rose-coloured single.

soon find them, and be killed. (3) Carefully watch the spot where a mole has recently been at work. If he is still at work you will see the soil heave up, and wherever this occurs stamp the ground heavily with the foot, open the run, and the mole will be found, when dispatch him.

Leather Jacket Grub.—Another soil pest, with a dark-coloured body, no legs, and a truncated tail. It is the larva of the Daddy Long Legs, or Crane Fly, and when fully grown measures about an inch in length. It has a tough skin, hence its name. The grubs feed on bulbs, tubers, and roots of plants, and in some seasons do an immense amount of mischief. The remedies are precisely the same as advised for the wireworm.

Weevils.—The grubs of several species of Weevils are very partial to the corms of cyclamen, both indoors and out. They are short, fat, white, legless grubs, and easily detected in the soil.

Remedies.—If cyclamen become unhealthy, the base of the corms should be examined for the presence of these grubs, and the latter promptly removed. To guard against the presence of the grubs in the compost—by the way, they are introduced in the egg or young state with the leaf-mould—the compost should be spread out thinly and sprinkled with sufficient boiling water to moisten it. If this be done a day or so before using, all insect life will be destroyed, and no harm done to the compost.

Red Spider.—An almost invisible mite with a pale red body, which lives in colonies under a fine web on the surface of the foliage. It is more prevalent in heated structures than in the open air. The mite pierces the epidermis of the leaf, and sucks out the sap, causing the portion of leaf attacked to assume a pale colour.

Remedies.—As a rule the Red Spider flourishes chiefly in hot, dry atmospheres, a damp atmosphere not being

favourable to it. Frequent syringing with water will prevent its increase, or spraying with an insecticide at once destroy it if numerous.

Wireworms.—These, the larvæ of Click Beetles, are most destructive to bulbs. They have yellowish, cylindrical, and jointed bodies, six legs in front and a pair behind, and must not be confounded with the active little animals known as Millipedes, with legs all along each side of the body. The wireworms live from three to five years in the larval stage, then pupate, and become beetles in due course.

Remedies.—Wireworms are voracious insects, and used to be difficult to eradicate till soil fumigants were introduced. Either of these, dug deeply into the soil before planting, will soon eradicate wireworms, and do no harm to the bulbs. If these substances are always dug into the soil before planting, earth pests will be an unknown quantity. The old idea was to bury pieces of cut potato tuber or carrot, attached to the sticks, in the soil. These had to be lifted daily, and the wireworms found thereon pulled off and killed under foot or broken in halves.

Eucharis Mite.—This is a minute creature, nearly akin to the well-known Red Spider. The individual mites can scarcely be discerned by the naked eye, so small are they. Examined under a lens, they are seen to have colourless bodies furnished with bristly hairs. They attack Eucharis bulbs specially, but will not hesitate to attack other evergreen and deciduous bulbs, feeding on their outer scales and causing decay to set in.

Remedies.—Bulbs badly infested with this pest speedily become unhealthy. If bulbs are discovered with decayed scales covered with reddish patches, and the mites can be seen by means of a lens, immediately burn all badly-infested bulbs and the soil, and plunge the pots in boiling

water. Where only slightly infested, pull off and burn the decayed scales, and well wash the bulbs in a solution of Gishurst Compound, to which some flowers of sulphur has been added. Burn the soil, and throw the pots into hot water. Repot the bulbs in fresh compost and in clean pots, and never allow the soil to get too dry. Dryness at the root is favourable to the increase and activity of this pest; moisture is fatal to its progress.

Dart Moth Caterpillars.—The larvæ of the Heart and Dart Moth (Agrotis exclamationis) and of the Dart Moth (Agriotes segetum) are destructive to many bulbs. They are of a dirty grey colour, furnished with dots and hairs. Both feed beneath the soil.

Remedies.—Before planting the bulbs dress the soil with a soil fumigant, digging this substance in deeply. The fumes will diffuse themselves through the soil, and suffocate all soil insects, including the above, and wireworms, and Leather Jacket grubs. In the case of established bulbs, apply to the surface and fork in as deeply as possible.

Slugs and Snails.—Both do a good deal of harm in gardens, especially to the young shoots of lilies. There are two kinds of harmful snails, the Common Snail (Helix aspera), and the Garden Snail (Helix hortensis). They are easily distinguished from slugs by carrying their shells on their backs. There are several kinds of the latter—the Black Slug (Arion ater), Garden Slug (A. hortensis), Yellow Slug (Limax flavus), Field or Milky Slug (Limax agrestris), and the Large Slug (Limax maximus).

Remedies.—As both are increased by eggs deposited in the soil, it naturally follows that if the eggs can be destroyed the less will be the number of Slugs and Snails to do damage to crops. Therefore, if a dressing of Apterite or Vaporite be given in autumn, winter, or early spring, and this dug deeply into the soil, the eggs will be destroyed. Others remedies are to lay down heaps of

bran or brewers' grains to attract the Slugs, and to collect and destroy the latter in the morning; to dust soot and lime freely over the soil in the evening; or to surround groups of lilies with cordons of soot or lime. A hedgehog is the mortal enemy of the Slug and Snail; and so, indeed, is the thrush.

II. FUNGOID DISEASES.

Hyacinth Sclerotinia. — Hyacinths and several other bulbs are sometimes attacked by the above fungoid disease. It first appears in the form of patches of olive-brown mould, preceded by yellowish patches on the leaves. In due course the disease spreads down to the scale of the bulb, and there forms a blackish mould, or sclerotia, which sets up decomposition of the outer scales, and eventually destroys the bulb.

Remedies.—There is only one remedy, and that is to at once burn all infected bulbs, and to desist from growing hyacinths in the same site for a few years.

Anemone Sclerotinia.—This is a disease which attacks the tubers or rhizomes of anemones, causing the growth to be unhealthy, and the eventual death of the plant.

Remedies.—The only remedy is to burn infected roots.

Hyacinth Bacteriosis.—A disease of bacterial origin, which causes yellow spots or patches to form on the leaves and bulbs. The spots are composed of mucus, in which are located colonies of bacteria. Bulbs so attacked either refuse to grow or make stunted growth.

Remedies.—In any case the bulbs and their foliage should be promptly consigned to the fire.

Lily Disease.—The stems, leaves, and flower buds of the Madonna Lily (Lilium candidum) are frequently attacked by a fungus which develops in the form of orange-brown or buff specks, and in a short time either kills or renders the foliage so unhealthy that they neither grow nor flower properly. It is a disease which spreads quickly, and appears to be difficult to eradicate.

Remedies.—It is utterly useless to try to cure plants that are infected; the only thing to do in the interest of other healthy plants in the garden is to up-root and burn both bulbs and foliage. As a preventive remedy, spray the plants once or twice during the season with a solution of sulphide of potassium. Dissolve an ounce of sulphide of potassium in a quart of hot water, and add water to make two and a-half gallons of solution.

Japanese Lily Disease.—It sometimes occurs that newly-imported bulbs of L. auratum and speciosum refuse to grow; and, upon examination as to the cause, it is found that they have become rotten. This is due to the bulbs being infected with a fungus prior to exportation. The disease develops in course of transmission of the bulbs to this country, the packing together of so many bulbs in the vessel facilitating the process.

Remedies.—The bulbs should be carefully examined when purchased, and if the outer scales are badly discoloured or decayed it is useless planting them; they should be burnt. If only slightly attacked, remove the infected scales and burn them, and then immerse the bulbs in a one per cent. solution of salicylic acid for twenty minutes before planting. Anyway, this is the advice of that eminent expert in plant diseases, Mr. George Masse.

Colchicum Smut.—A fungus which forms oblong patches of black mould on the leaves of Colchicums and Muscaris, arresting growth, and finally killing the plants.

Remedies.—Diseased plants should be burnt. To safeguard healthy plants from attack, spray with a solution of Condy's Fluid.

Freesia Disease.—A relative of the Carnation Fairy Ring fungus, named Heterosporium gracile, attacks the leaves of freesias, irises, antholyzas, and hemerocallis, forming oval pale brown spots, which eventually become covered with an olive-brown mould. This disease speedily kills the leaves if allowed to develop to any extent.

Remedies.—To prevent attack, or to check a slight attack, spray the foliage with the following solution: Mix together one ounce of carbonate of copper and five ounces of carbonate of ammonia. Dissolve in a quart of hot water, and make up to sixteen gallons with cold water. Burn badly infested leaves and bulbs.

Iris Bulb Scab.—This fungoid disease forms black patches on the surface of bulbs of I. reticulata, and gradually kills the bulbs.

Remedies.—Mr. George Masse recommends the bulbs to be soaked for two hours in a solution of one part of formalin to three hundred parts of water. This will cure a slight infection; badly attacked ones should be burnt.

Tulip Mould.—The stems, leaves, and flowers of tulips are occasionally attacked by a fungus called Sclerotinia parasitica, which causes olive-brown velvety patches of mould to form thereon. It eventually descends to the bulb, on which it forms a blackish crust, the bulb in due course shrivelling and decaying.

Remedies.—Directly the mould is observed on the foliage pull the bulb up and burn it.

Snowdrop Mildew.—A fungoid disease which attacks the bulbs of the snowdrops, and gradually spreads

upwards to the foliage and flowers. Its presence on the bulb may be detected by small blackish grains in the scales, and by a whitish mould on the leaves and flower stems. Bulbs attacked thus make stunted growth, and rarely flower.

Remedies.—The only remedy is to pull up and burn the infected bulbs. It is useless applying fungicides.

CHAPTER III.

ENGLISH NAMES OF BULBS.

African Corn Lily (the genus Ixia).
African Harlequin Flower (the genus Sparaxis).
Amazon Lily (Eucharis grandiflora).
Angel's Tears Narcissus (Narcissus triandrus albus).
Autumn Crocus (the genus Colchicum).
Baboon Root (the genus Babiana).
Belladonna Lily (Amaryllis belladonna).
Bell-wort (Uvularia grandiflora).
Black Arum Lily (Arum sanctum).
Bermuda Butterup (Oxalis cernua fl. pl.).
Bermuda Lily (Lilium longiflorum eximium, syn. Harrisii).
Blood Flower (the genus Hæmanthus).
Bluebell (Scilla festalis).
Blue Spiderwort (Commelina cœlestis).
Brown's Lily (Lilium japonicum Brownii).
Bugle Lily (the genus Watsonia).
Butter and Eggs Daffodil (Narcissus incomparabilis fl. pl.).
Butterfly Tulip (the genus Calochortus).
Californian Fire Cracker (Brevoortia Ida-Maii).
Californian Hyacinth (the genus Brodiæa).
Californian Lily (Lilium californicum).
Campernelle Jonquil (Narcissus odorus Campernelli).
Canadian Lily (Lilium canadense).
Cape Cowslips (the genus Lachenalia).
Cape Hyacinth (Galtonia candicans).
Carolina Lily (Lilium carolinianum).
Caucasian Lily (Lilium monadelphum).
Chalice-cupped Daffodil (Narcissus incomparabilis).
Chickereekie (Ornithogalum lactrum).
Chilian Crocus (Tecophilæa cyanocrocus).
Cloth of Silver Crocus (Crocus biflorus).
Codlins and Cream Daffodil (Narcissus incom. fl. pl.).
Coral Drops (Bessera elegans).
Corn Flag (the genus Gladiolus).
Crimson Satin-flower (Brevoortia Ida-Mai).
Crown Imperial Lily (Fritillaria imperialis).
Cyclamen-flowered Daffodil (Narcissus cyclamineus).
Daffodil (the genus Narcissus).
Daffodil Garlic (Allium neapolitanum).
Dog's Tooth Violet (the genus Erythronium).
Dolly-cup Narcissus (Narcissus Burbidgeii).
Dragon's Mouth (Helicodiceros crinitus).
Dragon's Plant (Dracunculus vulgaris).

Easter Lily (Lilium longiflorum eximium, syn. Harrisii).
Eggs and Bacon Daffodil (Narcissus incomparabilis fl. pl.).
English Iris (Iris xiphioides).
Eucharis-flowered Narcissus (Narcissus Leedsii).
Flowering Grass (Lapeyrousia cruenta)
Flower of the West Wind (Zephyranthes candida).
Fortune's Lily (Lilium tigrinum Fortunei).
Fritillary (the genus Fritillaria).
Ganymede's Cup (Narcissus triandrus).
Gardenia-flowered Narcissus (N. poeticus fl. pl.).
Giant Lily (Lilium giganteum).
Glory Lily (the genus Gloriosa).
Glory of the Snow (Chionodoxa Luciliæ).
Golden Garlic (Allium Moly).
Golden Zephyr Flower (Zephyranthes Andersonii).
Gold-rayed Lily (Lilium auratum).
Grape Hyacinth (the genus Muscari).
Greek Grape Hyacinth (Muscari Heldreichii).
Greig's Tulip (Tulipa Greigii).
Guernsey Lily (the genus Nerine).
Heavenly Blue (Muscari conicum)
Herb Lily (the genus Alströmeria).
Hoop Petticoat Daffodil (Narcissus bulbocodium).
Humboldt's Lily (Lilium Humboldtii).
Hyacinth (Hyacinthus orientalis).
Italian Bluebell (Scilla italica).
Italian Grape Hyacinth (Muscari botryoides cæruleum).
Ixia Lily (the genus Ixiolirion).
Jacobæan Lily (Sprekelia formosissima).
Jonquil (Narcissus jonquilla).
Kramer's Lily (Lilium Krameri).
Lebanon Squill (Puschkinia libanotica).
Lent Lily (Narcissus pseudo-narcissus).
Lily (the genus Lilium).
Lily-of-the-Field (Sternbergia lutea).
Madeira Vine (Boussingaultia baselloides).
Madonna Lily (Lilium candidum).
Mariposa Lily (the genus Calochortus).
Martagon Lily (Lilium Martagon).
Max Leichtlin's Lily (Lilium Leitchlinii).
Meadow Saffron (the genus Colchicum).
Mount Etna Lily (Sternbergia lutea).
Musk Hyacinth (Muscari moschatum)
Musk-scented Daffodil (Narcissus moschatus).
Nankeen Lily (Lilium testaceum).
Natal Cornflower (the genus Ixia).
Neilgherry Lily (Lilium neilgherense).
Netted Iris (Iris reticulata).
Nosegay Daffodil (Narcissus Tazetta).
Orange Lily (Lilium croceum).

Ostrich Feather Hyacinth (Muscari plumosum).
Panther Lily (Lilium pardalinum).
Parry's Lily (Lilium Parryi).
Peacock Tiger Flower (Tigridia Pavonia).
Persian Lily (Fritillaria persica).
Persian Tulip (Tulipa persica).
Peruvian Lily (the genus Alströmeria).
Pheasant's Eye Narcissus (Narcissus poeticus).
Plume Hyacinth (Muscari plumosum).
Poet's Narcissus (Narcissus poeticus).
Polyanthus Narcissus (Narcissus Tazetta).
Poor Man's Orchid (the genus Iris).
Primrose Peerless Daffodil (Narcissus biflorus).
Pyrenean Lily (Lilium pyreniacum).
Quamash (Camassia esculentea).
Queen Anne's Jonquil (Narcissus odorus plenus).
Queen Lily (the genus Phædranassa).
Rush Jonquil (Narcissus juncifolius).
Sacred Lily (Narcissus Tazetta).
St. Joseph's Lily (Lilium candidum).
Scarborough Lily (Vallota purpurea).
Scarlet Turk's Cap (Lilium chalcedonicum).
Scarlet Twin-flower (Bravoa geminiflora).
Scorpion Iris (Iris alata).
Scotch Garland Lily (Narcissus scoticus).
Sea Daffodil (Pancratium maritinum).
Siberian Orange Lily (Lilium davuricum).
Siberian Squill (Scilla sibirica).
Silver Star Narcissus (Narcissus Leedsii).
Snowdrop (the genus Galanthus).
Snowflake (the genus Leucojum).
Soap Plant (Chlorogalum pomeridianum).
Sowbread (the genus Cyclamen).
Spanish Bluebell (Scilla hispanica).
Spanish Iris (Iris Xiphion).
Spring Meadow Saffron (Bulbocodium vernum).
Spring Snowflake (Leucojum vernum).
Spring Star Flower (Brodiæa uniflora).
Squill (the genus Scilla).
Star Hyacinth (Muscari neglectum majus).
Star Hyacinth (Scilla amœna).
Star Narcissus (Narcissus incomparabilis).
Star of Bethlehem (the genus Ornithogalum).
Star Tulip (the genus Calochortus).
Striped Squill (Puschkinia scilloides).
Summer Snowflake (Leucojum æstivum).
Sun's Eye Tulip (Tulipa ocula solis).
Swamp Lily (Lilium superbum).
Sword Lily (the genus Gladiolus).
Tassel Hyacinth (Muscari comosum).

Tenby Daffodil (Narcissus obvallaris).
Tiger Flower (Tigridia Pavonia).
Tiger Lily (Lilium tigrinum).
Tile-root (Geissorhiza rochensis).
Trinity Flower (the genus Trillium).
Trumpet Lily (Lilium longiflorum).
Tuberose (Polyanthes tuberosa).
Turban Lily (Lilium pomponium).
Turk's Cap Lily (Lilium Martagon).
Wake Robin (Trillium F. grandiflorum).
Wandflower (the genus Dierama).
Wild Tulip (Tulipa sylvestris).
Wilson's Lily (Lilium longiflorum Wilsonii).
Winter Aconite (Eranthis hyemalis).
Winter Daffodil (Sternbergia lutea).
Wood Hyacinth (Scilla festalis).
Wood Lily (the genus Trillium).
Yellow Star of Bethlehem (Gagea lutea).
Zephyr Flower (the genus Zephyranthes).

CHAPTER IV.

SELECTIONS OF BULBS AND TUBERS.

SECTION A.—HYACINTHS.

TWENTY-FIVE SINGLES FOR POTS.

Albus Maximus, white, second early.
Bird of Paradise, yellow, mid-season.
Baron Van Tuyll, purple, first early.
Czar Peter, blue, mid-season.
Baroness Van Tuyll, white, first early.
General Pelisier, crimson, first early.
Grand Lilas, silvery lilac, second early.
Grand Maître, porcelain blue, second early.
Grandeur à Merveille, white and rose, second early.
Jacques, coral-pink, mid-season.
King of the Blues, dark blue, late.
King of the Belgians, crimson scarlet, late.
King of the Yellows, yellow, late.
La Grandesse, white, mid-season.
Leonidas, blue, second early.
Lord Percy, pale rose, second early.
Mrs. Robert Steiger, rosy carmine, mid-season.
Mr. Plimsoll, blush, mid season.
Norma, pink, rose, second early.
Pink Perfection, pink, mid-season.
Primrose Perfection, yellow, mid-season.
Queen of Blues, azure blue, late.
Roseus Maximus, rose, late.
The Sultan, purple, late.
Vuurbank, crimson, late.

SIX DOUBLES FOR POTS.

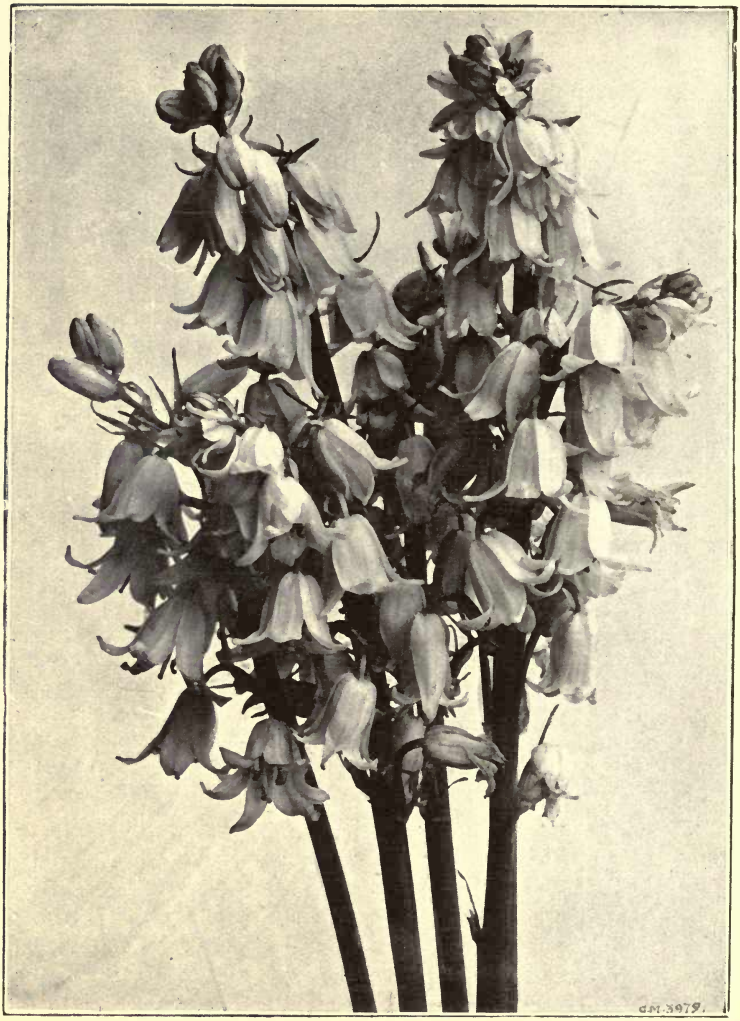
Dainty Maid, blush rose, mid-season.
Grootvorst, blush pink, mid-season.
Koh-i-Noor, salmon pink, late.
Blocksberg, blue, late.
Lady of the Lake, blush white, mid-season.
Latour d'Auvergne, white, first early.

TWELVE SINGLES FOR GLASSES AND BOWLS.

Alba maxima, pure white, early.
Grandeur à Merveille, rosy white, second early.

IXIOLIRION MONTANUM TARTARICUM.

An interesting bulbous plant for sunny borders or rockeries. Flowers, lilac, borne in early summer. Native of Western Asia.



SPANISH SQUILL, "ROSE QUEEN."

Scilla hispanica Rose Queen is a very pretty rose-coloured variety of the Spanish Squill, and forms an excellent companion to the blue and white kinds.

Baron de Tuyll, pink, early.
Cardinal Wiseman, rosy pink, mid-season.
Jacques, coral pink, mid-season.
General Pélissier, crimson, mid-season.
King of the Belgians, scarlet, mid-season.
Captain Boyton, lilac blue, mid-season.
Grand Maître, soft blue, second early.
King of the Blues, Oxford blue, late.
Adeline Patti, claret, mid-season.
King of the Yellows, golden-yellow, mid-season.

TWENTY-FIVE SINGLES FOR BEDDING.

Amy, crimson, mid-early.
Baron Van Tuyll, blue, early.
Baroness Van Tuyll, early.
Charles Dickens, porcelain and lilac, mid-early.
Czar Peter, porcelain blue, mid-early.
Gertrude, rose, mid-early.
Grand Vainquer, white, mid-early.
Grandeur à Merveille, rose, mid-early.
Grand Maître, lavender and blue, mid-early.
King of the Blues, blue, late.
King of the Yellows, yellow, late.
La Grandesse, white, mid-early.
Lord Macaulay, red and rose, mid-early.
Mauve Queen, mauve, mid-early.
Norma, rose, early.
Regulus, porcelain, mid-early.
Roi des Belges, red, late.
William the First, dark blue, early.
Marie, blue and purple, mid-early.
Voltaire, rosy-white, mid-early.
La Franchise, white and rose, mid-early.
Madame Hodson, pink, mid-early.
Madame Van der Hoop, white, late.
Robert Steiger, crimson, mid-early.
Queen Victoria, white, early.

TWELVE MINIATURE HYACINTHS FOR BOWLS.

Beauty, pink.
Blanche, white.
Canary Bird, yellow.
Eveline, rose.
Fire King, crimson.
John Bull, purple.
Loveliness, blue.

Maggie, creamy-white.
Mary, sulphur.
Prince of Orange, orange.
Princess of Wales, blue.
Uncle Tom, black.

SECTION B.—TULIPS.

TWELVE EARLY SORTS FOR FORCING.

Coleur Cardinal, crimson scarlet, late.
Duc Van Thol, scarlet, white, yellow, early.
Duchess de Parma, scarlet and yellow, mid-early.
Keizer Kroon, scarlet and yellow, late.
Jost Van Vondel, crimson and white, mid-early.
Pottebakker White, white, early.
La Belle Alliance, crimson scarlet, late.
Pottebakker Yellow, yellow, late.
Vermilion Brilliant, scarlet, early.
Proserpine, carmine rose, early.
Rose Grisdelin, rose and white, mid-early.
Primrose Queen, yellow, mid-early.

SIX DOUBLE SORTS FOR FORCING.

Couronne d'Or, yellow, second early.
Imperator Rubrorum, scarlet, second early.
La Candeur, white, late.
Le Matador, scarlet, late.
Tournsol Yellow, yellow, second early.
Salvator Rosa, rosy pink, early.

TWELVE EARLY SINGLES FOR POTS OR BOWLS.

Bride of Haarlem, crimson and white, mid-early.
Canary Bird, yellow, early.
Cottage Maid, rosy-white, mid-early.
Grace Darling, scarlet, early.
La Rêve, rose, orange, and chamois, late.
Miranda, carmine rose, mid-early.
Mon Tresor, yellow, early.
Pink Beauty, rose, white, and yellow, late.
Queen of the Netherlands, rose and white, mid-early.
Snowflake, white, mid-early.
Vesuvius, vermilion scarlet, early.
White Swan, white, mid-early.

TWELVE EARLY DOUBLES FOR POTS OR BOWLS.

Blue Flag, mauve purple, late.
Carmen Sylva, rose and white, late.
Duke of York, crimson and white, late.
El Toreador, scarlet and yellow, early.
Lucretia, rose, mid-early
Murillo, rose and white, mid-early.
Princess Beatrice, white and rose, late.
Rosea Perfecto, rose and white, mid-early.
Soprano, yellow and salmon, mid-early.
Voltaire, maroon crimson, early.
Vuurbaak, scarlet, mid-season.
Yellow Rose, yellow, late.

TWELVE EARLY SINGLES FOR BEDDING.

Chrysolora, yellow, mid-early.
Crimson King, scarlet crimson, early.
Duc Van Thol, scarlet, early.
Pottebakker, white, mid-early.
Proserpine, rose, mid-early.
Vermilion Brilliant, vermilion, mid-early.
Coleur Ponceau, crimson and white, mid-early.
Crimson Beauty, crimson scarlet, early.
Koh-i-Noor, crimson, mid-early.
Rose Grisdelin, rose and white, mid-season.
Rose Luisante, pink and white, mid-early.
Pink Beauty, pink, early.

TWELVE EARLY DOUBLES FOR BEDDING.

Duc Van Thol, red and yellow, early.
Blue Flag, mauve purple, late.
Eastern Queen, scarlet and white, late.
Imperator Rubrorum, crimson, early.
La Candeur, white, late.
Le Matador, scarlet, early.
Murillo, white and rose, early.
Prince of Wales, crimson scarlet, late.
Queen of the Netherlands, white and blush rose, late.
Couronne d'Or, yellow and orange, early.
Yellow Rose, yellow and orange, late.
Rubra Maxima, vermilion, early.

SIX PARROT OR DRAGON TULIPS.

Amiral de Constantinople, scarlet and orange.
Feu Brilliant, crimson scarlet.

Lutea Major, yellow and scarlet.
Crimson Beauty, crimson and black.
Markgraaf Van Baden, gold, scarlet, purple, and green.
Perfecta, yellow and scarlet.

SIX VARIEGATED TULIPS.

(These have their leaves edged with golden or silver tints).

Belle Alliance, scarlet, leaves edged with silver.
Cottage Maid, rose and white, leaves edged yellow.
La Candeur, white, leaves edged silver.
Pottebakker, yellow and scarlet, leaves edged with yellow.
Rex Rubrorum, crimson, leaves edged silver and striped red.
Royal Standard, white and cerise, leaves edged silver.

TWENTY-FIVE MAY-FLOWERING TULIPS.

Albiflora, white, 18 in., mid-early.
Blushing Bride, white, pink, rose, blue, 15 in., mid-early.
Bouton d'Or, yellow, 17 in., mid-early.
Canary Cup, yellow 16 in., mid-early.
Cottager's Pink, pink, 13 in., late.
Cygnet, white, 21 in., late.
Dainty Maid, rose and lilac, 21 in., mid-early.
Fulgens, vermilion and white, 24 in., early.
Inglescombe Scarlet, scarlet and blue, late.
La Merveille, salmon, rose, red, 18 in., late.
Leghorn Bonnet, yellow, 20 in., mid-early.
Merry Maid, crimson, yellow, white, 20 in., late.
Moonlight, primrose yellow, second early.
Mrs. Moon, yellow, 28 in., late.
Orange Beauty, orange and red, 20 in., late.
Orlando, vermilion, black and yellow, 14 in., mid-early.
Orpheus, primrose and red, 21 in., late.
Picotee, white and rose, 20 in., mid-early.
Rose Beauty, rose, white, and blue, 30 in., mid-early.
Shahzada, crimson and yellow, 19 in., mid-early.
Sweet Nancy, white, pink, and blue, 18 in., mid-early.
Parisian Yellow, yellow, 20 in., late.
Striped Beauty, rose, crimson, and white, 20 in., late.
Yellow Hammer, yellow, 19 in., late.
York and Lancaster, white, rose, and yellow, 13 in., mid-early.

TWENTY-FIVE DARWIN TULIPS.

Baronne de la Tonnaye, rose, 24 in., mid-early.
Carminea, carmine, rose, and blue, 22 in., mid-early
Clara Butt, rose, 19 in., late.

Donders, crimson, violet, and white, 25 in., early.
Dorothy, heliotrope and white, 17 in., mid-early.
Edmée, cherry red, 25 in., late.
Edouard André, purplish, rose, and grey, 25 in., early.
Europe, salmon, scarlet, and white, 26 in., mid-early.
Flambeaux, scarlet and blue, 20 in., mid-early.
General Kohler, cherry crimson, 24 in., mid-early.
G. F. Wilson, crimson, carmine, white, and blue, 26 in., early.
Gipsy Queen, maroon, 26 in., late.
Glow, vermilion, blue and white, 23 in., early.
Grand Monarque, purple and white, 26 in., early.
Joseph Chamberlain, crimson scarlet, 19 in., mid-early.
Maiden's Blush. rose and white, 20 in., mid-early.
Margaret, blush pink, 24 in., late.
May Queen, rose blue, and white, 25 in., mid-early.
Mrs. Farncombe Sanders, rose, scarlet, white, 27 in., early.
Nautica, cerise, rose, and violet 24 in., early.
Pride of Haarlem, salmon, rose, and blue, 26 in., early.
Queen of Roses, rosy-blush, 23 in., late.
The Sultan, maroon black, 24 in., early.
White Queen, white, 24 in., early.
Zulu, purple black, 28 in., early.

TWELVE REMBRANDT TULIPS.

Annie Mary, feathered lilac.
Butterfly, lilac, striped carmine.
Crimson Beauty, crimson, flamed with red and white.
Diana, pink and white, striped red.
Hebe, white and lilac, striped maroon.
La Coquette, lilac, striped black.
Marco Spado, red on white ground.
Purity, pink on a white ground.
Salome, rose, feathered and striped.
Semele, pink, feathered
Vesta, lilac, striped carmine.
Zenobia, amaranth and white, striped maroon

SECTION C.—DAFFODILS OR NARCISSI.

TWENTY-FIVE FOR FORCING.

Aspasia, white and yellow, early.
Barrii Conspicuus, primrose and orange scarlet, second early.
Bicolor Empress, yellow and white, second early.
Crown Prince, white and orange, early.
Cernuus, silvery white, second early.
Emperor, yellow, second early.

Golden Spur, yellow, early.
Henry Irving, yellow, early.
The Bride, white, double, early.
Waterwitch, pure white, second early.
Klondyke, yellow and golden, early.
Mrs. Langtry, white and yellow, second early.
Obvallaris, yellow, second early.
Poeticus ornatus, white and red, second early.
Princeps, white and yellow, second early.
Double Roman, white and yellow, early.
Paper White, white, early
Bazelman Major, white and yellow, early.
Grand Monarque, white and yellow, early.
Jaune Supreme, yellow and orange, early.
Soleil d'Or, yellow, early.
White Perfection, white, early.
Queen of Spain, yellow, second early.
Sir Watkin, yellow, second early.
Sulphur Phœnix, white and sulphur, second early.

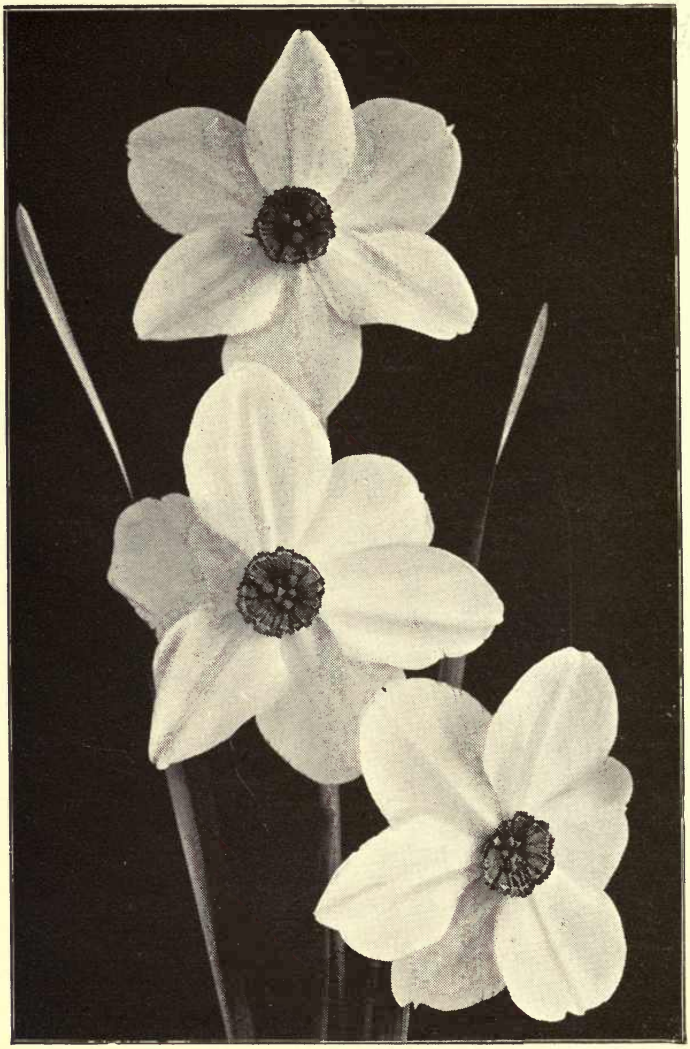
TWENTY-FIVE FOR POT CULTURE.

(These may be grown with artificial heat).

Albicans, white and primrose, 14 in.
Bicolor Empress, white and yellow, 20 in.
Bicolor Victoria, white and yellow, 18 in.
Cyclamineus, yellow, 6 in.
Emperor, yellow, 21 in.
Golden Spur, yellow, 18 in.
Triandrus Albus, white, 7 in.
Elvira (Poetaz), white and yellow, 15 in.
Almira (Poeticus), white and red, 18 in.
Evangeline (Leedsii), pure white, 18 in.
White Wings (Incomparabilis), white and yellow, 15 in.
Princess Mary (Incomparabilis), white and orange, 15 in.
The Bride (Double), white, 1 ft.
Barrii Conspicuus, yellow and scarlet, 21 in.
Johnstoni Queen of Spain, yellow, 12 in.
Madame de Graaff, primrose, 16 in.
Weardale Perfection, white and primrose, 14 in.
Poeticus Cassandra, white and red, 17 in.
Odorus Campernelli, yellow, 18 in.
Minimus, yellow, 3 in.
Hoop Petticoat, Large Yellow, yellow, 6 in.
M. M. de Graaff (Leedsii), white and primrose, 17 in.
Sir Watkin (Incomparabilis), yellow, 21 in.
Eggs and Bacon (Incomparabilis), white and orange, 17 in.
Codlins and Cream (Incomparabilis), white and sulphur, 18 in.

TRUMPET DAFFODIL, "KING ALFRED."

The largest and finest Trumpet Daffodil in cultivation. Colour: yellow.



NARCISSUS POETICUS, HOMER.

A charming variety of Poet's Narcissus suitable for culture in beds, borders, pots, or bowls. Perianth, white; cup, orange, banded with crimson. One of the best of this section.

TWENTY-FIVE FOR NATURALISING.

Katherine Spurrell (Leedsii), white, yellow, late.
Cyclamineus (Trumpet), yellow, early.
Empress (Trumpet), white and yellow, second early.
Cynosure (Incomparabilis), primrose and orange red, second early.
Waterwitch (Leedsii), pure white, late.
Aspasia (Poetaz), white and yellow, late.
Golden Spur (Trumpet), yellow, early.
Klondyke (Poetaz), yellow and golden, late.
Seagull (Barrii), white and canary, early.
Elvira (Poetaz), white and yellow, late.
Ceres (Incomparabilis), white and yellow, early.
M. M. de Graaff (Leedsii), white, primrose, orange, late.
Mrs. Backhouse (Nelsonii), white and yellow, late.
Mrs. Langtry (Leedsii), white and primrose, late.
Moschatus (Trumpet), white, early.
Obvallaris (Trumpet), yellow, very early.
Pallidus Præcox (Trumpet), pale yellow, early.
Barrii Conspicuus (Barrii), yellow, orange scarlet, late.
Campernelle (Odorus), yellow, early.
Queen of Spain (Johnstonii), yellow, early.
Sir Watkin (Incomparabilis), yellow, early.
Stella (Incomparabilis), white and yellow, late.
Poeticus Ornatus (Poet's), white and scarlet, late.
Rugilobus (Trumpet), yellow, early.
Victoria (Trumpet), white and yellow, early.

TWENTY-FIVE FOR BEDS AND BORDERS.

Glory of Leiden (Trumpet), yellow, 14 in., second early.
P. R. Barr (Trumpet), primrose, 16 in., late.
Madame de Graaff, creamy white, second early.
Grandis (Bicolor), white and yellow, 12 in., late.
Mrs. Walter Ware (Bicolor), white and yellow, 16 in., second early.
Proserpine (Bicolor), white and yellow, 12 in., early.
Cernuus pulcher (White Trumpet), white and primrose, 16 in., early.
W. P. Milner (White Trumpet), sulphur, 10 in., early.
Beauty (Chalice-cup), sulphur yellow, 23 in., second early.
Frank Miles (Chalice-cup), yellow, 22 in., second early.
Princess Mary (Chalice-cup), cream and orange, 16 in., second early.
Stella Superba (Chalice-cup), white and yellow, 20 in., second early.
Barii Conspicuus (Barrii), yellow and orange, scarlet, 20 in., late.

Elvira (Poetaz), white and yellow, second early.
Duchess of Westminster (Leedsii), white and orange, 18 in., late.
Katherine Spurrell (Leedsii), white and canary, 16 in., late.
Mrs. Langtry (Leedsii), white and primrose, 16 in., late.
Nelsoni Major (Nelsoni), white and orange, 16 in., late.
Odorus Campernelli (Giant Jonquil), yellow, 18 in., early.
John Bain (Hybrid Poet's), white and citron, 15 in., early.
Ornatus (Poet's), white and scarlet, 12 in., late.
Telemonius Plenus (Double), yellow, 12 in., early.
Butter and Eggs (Double), yellow and orange, 16 in. early.
Codlins and Cream (Double), white and sulphur, 18 in., second early.
Eggs and Bacon (Double), white and orange, 16 in., second early.

TWELVE DAFFODILS FOR ROCKERIES.

Minimus (Trumpet), yellow, 3 in., early.
Nanus (Trumpet), yellow, 6 in., early.
Cyclamineus (Trumpet), yellow, 6 in., early.
Bulbocodium citrinum (Hoop Petticoat), citron and yellow, 6 in., second early.
Bulbocodium monophyllum (Hoop Petticoat), white, 6 in., early.
Bulbocodium conspicuum (Hoop Petticoat), yellow, 6 in., late.
Triandrus albus (Angel's Tears), white, 6 in., second early.
Triandrus calathinus (Angel's Tears), white, 7 in., second early.
Juncifolius (Rush Daffodil), yellow, 3 in., late.
Jonquilla (Jonquil), yellow, 1 ft., late.
Minor (Trumpet), yellow, 6 in., very early.
Capax plenus (Double), lemon, 6 in., early.

DAFFODILS FOR SHADY POSITIONS.

Ard Righ (Trumpet), yellow, 15 in., early.
Obvallaris (Trumpet), yellow, 1 ft., early.
Spurius (Trumpet), yellow, 15 in., early.
Lobularis (Bicolor), white and yellow, 7 in., early.
Scoticus (Bicolor), white and yellow, 1 ft., early.
Colleen Bawn (White Trumpet), white, 15 in., early.
Cernuus (White Trumpet), white, 1 ft., early.
Tortuosus (White Trumpet), white, 15 in., early.
Queen of Spain (Johnstoni), yellow, 1 ft., second early.
Pseudo-narcissus plenus (Double), yellow, 9 in., second early.
Odorus plenus (Double Jonquil), yellow 1 ft., second early.
Scoticus plenus (Double), white and yellow, 1 ft., second early.

SECTION D.—IRISES.

TWELVE ENGLISH IRISES.

Blanche Fleur, white and rose, 20 in.
Hector, rosy lavender and purple, 18 in.
La Vierge, violet and blue, 20 in.
La Pureté, lavender, crimson, and white, 20 in.
L'Unique, purple, rose, and white, 20 in.
Lilacina, lavender, violet, and blue, 20 in.
Lord Roberts, violet, black, and blue, 23 in.
Mont Blanc, white, 21 in.
Proserpine, purple, white, and yellow, 24 in.
Purple Queen, purple, violet, crimson, white, and yellow, 16 in.
Rosa Bonheur, white, crimson, and rose. 21 in.
The Sultan, purple, blue, and yellow, 20 in.

TWELVE SPANISH IRISES.

Avalanche, white and yellow, 20 in.
Bronze Queen, bronzy brown, orange, and yellow, 18 in.
Carmen, purple, ruby, yellow, and orange, 24 in.
Donna Maria, silver blue and orange, 24 in.
Golden King, yellow and orange, 24 in.
Lemon Queen, lemon and gold, 20 in.
Princess Ida, white, primrose, and orange, 26 in.
Princess Margaret, lavender, silver, and yellow, 22 in.
Snowball, white and golden, 24 in.
Solfatare, blue and orange, 30 in.
Thunderbolt bronzy purple and brown, 24 in.

SECTION E.—GLADIOLI.

TWELVE EARLY-FLOWERING GLADIOLI.

Following are suitable for outdoor culture to flower in summer, or for growing in pots for forcing or blooming in a cold house.

Blushing Bride, white and crimson, 2 ft.
Cardinalis elegans, orange, scarlet, and white, 20 in.
Cardinalus roseus, rose and salmon, 15 in.
Colvillei roseus, salmon rose, 2 ft.
Colvillei, The Bride, pure white, 2 ft.
Byzantinus, rosy claret, 2 ft.
Crimson Queen, orange scarlet, carmine, and white, 20 in.
Fairy Queen, salmon rose, white, and crimson, 2 ft.
Ne Plus Ultra, salmon rose, scarlet, and red, 2½ ft.

Pink Perfection, salmon rose, white, and crimson, 2 ft.
Queen Wilhelmina, blush, cream, and crimson, 20 in.
Rose Queen, rose, blush, red, and cream, 20 in.

TWELVE GANDAVENSIS GLADIOLI.

America, flesh pink and lavender; very fine.
Canary Bird, yellow; striking.
Fra Diavolo, orange rose and violet red.
Heilé, soft lilac pink.
Hercules, scarlet, orange red, violet, and mauve.
La Candeur, white, yellow, and carmine.
Le Triomphe, rosy lilac, carmine, and white.
Madame Potter Palmer, rosy pink, carmine, and cream.
Matador, carmine red, blotched white.
Pyramide, orange rose and cream.
Triomphe de Paris, creamy white, lilac, carmine, and yellow.
Van Dael, delicate soft salmon.

TWELVE GLADIOLUS KELWAYI.

An exceptionally fine race of hybrids, noted for their stately growth, handsome spikes, and richly-coloured flowers.

Admiral Togo, magenta, carmine, yellow, and rose.
Baden Powell, cerise, white centre.
Countess Amy, rose pink, crimson, and cream.
General French, crimson with blue spot.
King of Gladioli, scarlet or salmon red with white spot.
Lady Mary Lyon, pale mauve, ivory spot.
Marks Barn, rosy crimson, shaded maroon.
Nilus, mauve with white centre.
Prince Henry of York, bright scarlet.
Richard Martin, salmon rose, striped carmine.
Royal Purple, a rich purple.
Vigilant, dark purple, shaded maroon.
Viscountess Iveagh, white, flushed with pink.

TWELVE GLADIOLUS CHILDSII.

A vigorous growing strain of Gladioli, remarkable for long spikes and large flowers.

Anaxis, rose, crimson, and white.
Ballerine, rich rosy crimson.
Burne Jones, crimson, with white centre.
Crevantes, salmon, with white centre.
Ellen Terry, white, carmine, purple, and yellow.
Lady Constance Gore, white, flaked purple and white.
Massa, white and carmine, with blue markings.

Langportian, magenta, striped white.
Queen Wilhelmina, rosy crimson and white.
Sir Horace Plunkett, rosy crimson.
Tullius, orange salmon, lined white.
Vestalin, mauve pink, striped carmine.

TWELVE JULY-FLOWERING GLADIOLI.

A strain of large-flowered Gladioli, which flower in July, and especially suitable for northern gardens.

Abercorn, lilac, flaked with purple.
Brightness, cochineal red, with white spot.
Elea, orange salmon, with white spot.
Geminius, rose, flaked with carmine.
J. G. Clarke, salmon, with yellow spot.
Lord Curzon, cerise, with yellow centre.
Lord Spencer, salmon rose, white centre.
Persimmon, blue, with white lines.
Picciola, scarlet, with yellow centre.
Sea Mouse, pink, mottled with violet, blotched white.
Velocity, salmon red, white, maroon striped.
Zopyrus, purple maroon.

TWELVE HYBRID BUTTERFLY GLADIOLI.

Alligator, blue, white, violet, and yellow.
Anti, lilac rose, carmine, and yellow.
Butterfly, yellow, carmine, and orange.
Crimson King, crimson maroon.
Edina, pink carmine and yellow.
Empire, rosy lilac, carmine, and yellow.
Gem, sulphur, carmine, and yellow.
Ladas, mauve, carmine, and yellow.
Magenta King, magenta violet and yellow.
Paragon, white, spotted blue
Sunshine, rosy pink, carmine, and yellow.
Witch, lilac rose and violet.

SECTION F.—MISCELLANEOUS.

TWELVE TRITONIAS (MONTBRETIAS).

Anglia, golden yellow, red tipped.
King Edward VII., golden yellow, spotted chocolate.
Ernest Davison, orange, red, and carmine.
Hereward, pale orange.

George Davison, pale orange yellow.
Lord Nelson, orange, scarlet, crimson, yellow eye.
Lady Hamilton, yellow.
Martagon, orange. with reddish throat.
Norvic, yellow, stained red.
Crocosmiæflora, orange, yellow, and red.
Rayon d'Or, yellow and brown.

TWELVE IXIAS.

Achievement, pale rose.
Admiration, chrome yellow, purple eye.
Aurora, orange red.
Beauty of Norfolk, canary yellow and carmine.
Bucephalus major, violet crimson.
Crætericides major, rosy scarlet.
Golden Drop, golden yellow.
Hogarth, cream and crimson, brown eye.
Morning Star, pink.
Prince of Orange, orange yellow, black eye.
Village Maid, silvery white, rose reverse
Viridiflora, sea green, dark centres.

TWELVE DOUBLE POPPY ANEMONES.

Beauty of Cannes, scarlet and white.
Blue Beard, purplish blue.
Blush Beauty, white and rose pink.
Chapeau de Cardinal, cerise scarlet.
Fire King, scarlet.
Rose de Nice, rose.
Rose Mignon, deep rose.
Scarlet King, rich scarlet.
Snowball ,white.
King of Scarlets, dazzling scarlet.
Queen of the Netherlands, white, crimson, and rose.
Sir Joseph Paxton, violet blue.

TWELVE SINGLE POPPY ANEMONES.

The Bride, white, very chaste.
Eastern Queen, vermilion, cream, and black.
His Excellency, scarlet, dark centre.
Victoria Giant, various colours, very showy.
Madame Dombrain, lilac.
Aart Admiral, crimson and blush.
Ard Righ, rosy violet.

Gambetta, blush white and purplish.
Madame Zocher, mauve and pink.
Red Dragon, scarlet and white.
Orida, flesh tinted.
St. Brigid, various, semi-double

TWELVE DUTCH CROCUSES.

Agnes Maria, purple.
Blue Celeste, blue and white.
David Rizzio, purple.
King of Whites, white.
Snow Queen, white.
Madame Mina, white and yellow.
King of the Blues, blue.
Corregio, blue and white.
Lilaceus, porcelain and white.
Cloth of Gold, yellow.
Mont Blanc, white.
Purpurea grandiflora, purple.

SIX PERSIAN RANUNCULI.

Bridesmaid, pure white.
Fire King, scarlet.
Jaune Supreme, yellow, dark centre.
Princess Victoria, rose and green.
Queen Victoria, white and carmine.
King of the Netherlands, black.

SIX DOUBLE FRENCH RANUNCULI.

Bessie May Welmar, white and rose.
Attraction, carmine.
Dorothy, lemon and rose.
Fairy Queen, pure white.
Pink Beauty, pink and lemon.
Florian, white and rose.

SIX DOUBLE TURBAN RANUNCULI.

Turban Black, dark scarlet.
Turban Carmine, a rich carmine.
Turban grandiflora, crimson and yellow.
Hercules, white, very large.
Merveilleuse, orange and yellow.
Viridiflora, green, edged scarlet

SIX SPARAXISES.

Angelique, white, yellow centre.
Delicata, maize yellow and chestnut.
Garibaldi, crimson and yellow.
Lady Carey, white, spotted purple.
Queen Victoria, white, yellow, and black.
Victor Emmanuel, red and yellow.

SIX BABIANAS.

Alba Sulphurea, sulphur white.
Bicolor, white and blue.
Celia, rose and white.
Fragrans, yellow, fragrant.
General Scott, rose and white.
Lady Carey, rose and silvery white.

CHAPTER V.

GLOSSARY OF TERMS, ETC.

"Bizarre" Tulip.—A term applied to tulip blooms having a yellow ground colour, marked with another colour, as crimson, scarlet, black, brown, etc.

"Boxing Bulbs."—A term applied to the culture of tulips and narcissi in boxes for forcing for yielding flowers for cutting. This plan enables a larger quantity of bulbs to be grown in a given space than is possible in pots. The boxes are usually 12in. to 18in. wide, 18in. to 2ft. long, and 6in. deep, holes also being bored in the bottom to allow water to escape. The bulbs may be planted 1in. to 2in. apart, according to size. See chapter on Forcing.

"Breeder" Tulip.—A term synonymous with "Mother" tulip, which see.

"Broken" Tulip.—A term synonymous with "rectified" tulip.

"Bulb."—See Chapter I., p. 9.

"Bulbil."—A term applied to the bulb-like bodies found in the axils of the leaves on the stems of Lilium tigrinum.

"Bybloemen" Tulip.—A term applied to tulip blooms that have a pure white ground colour, marked with various tints of violet, purple, or black, lilac, lavender, or brown.

"Chalice-cup" Daffodils.—A term applied to narcissi which have cup or bowl-like coronas, as the varieties of N. incomparabilis, Barrii, and Leedsii types, for example.

"Cocoanut-fibre Refuse."—This is a bye-product obtained from the manufacture of cocoanut-fibre matting, etc., and a very useful substance for mulching the surface of beds planted with bulbs, and for growing bulbs in bowls, etc. Usually sold by the bushel or bag.

"Corm."—See Chapter I., p. 12.

"Corona."—A term applied to the trumpet or tubular portion of a daffodil bloom.

"Cross-breeding."—A term applied to the interesting operation of transferring the pollen of one variety of a given species to another variety of the same species. The object in this case is to obtain a new type of superior quality to the parents. Thus one variety may have a lovely flower and a weak constitution, and another a more vigorous habit, but a less superior flower in size or colour. By crossing the two, either singly or reciprocally, the product may be a plant with a good constitution and beautiful flowers. To cross-fertilise a flower, the bloom must be protected from insects by enclosing it in a muslin bag before it becomes fully developed. The anthers, too, of the

bloom that is to receive the pollen must be removed directly the flower opens. The bloom must be carefully watched, and directly the stigma or female organ is seen to be coated with a moist sticky substance, the pollen grains must be removed by means of a camel-hair brush from the anthers of the other plants and applied to the stigma, afterwards replacing the muslin to prevent foreign pollen being conveyed by insects. In a few hours, or a day or so, the pollen grains will germinate, force their tube-like appendage down the interior of the pistil, pierce the ovule, or embryo seed, in the ovary, and thus impregnate it with the peculiar virtues which in due course will make itself manifest in the offspring. The same course has to be pursued in obtaining a hybrid between two species or a cross-bred between two varieties of the same species.

"Cut Flowers."—Flowers required for decorative purposes or for exhibition should always be cut early in the morning whilst the dew is upon them, or late in the evening. The early morning before 8 a.m. is the best period. Never cut flowers during the middle of the day. Flowers maintain their freshness longer if cut before they are fully developed. Narcissi, indeed, should be cut when about half developed. They will gradually attain full development after placing in water. If required for exhibition store in a cool cellar. To keep flowers fresh place a pinch of salt or a piece of charcoal in the water, and cut off a thin slice from the base of the stems every morning. Change the water daily.

"Daffodil."—A term applied to the section of narcissi which have their coronas or trumpets nearly as long or longer than the perianth segments, as Emperor, Cyclamineus, etc.

"Darwin" Tulip.—A race of self-coloured tulips of Flemish origin said to be derived from Tulipa gesneriana. Blooms goblet or cup-shaped, stems very long, and colours of all shades of rose, scarlet, maroon, purple, black, violet, and white.

"Dolly-cup" Narcissi.—A term applied to a section of narcissi—N. Burbidgeii, Engleheartii, and poeticus—which have a corona or cup in depth less than one-quarter the length of the perianth segments.

"Dragon" Tulip.—A term synonymous with "Parrot," which see.

"Feathered" Tulip.—A term applied to "rectified" or "broken" tulips, and that have the colour of the edges only of their petals distinctly pencilled or feathered.

"Flamed" Tulip. — A term applied to "rectified" or "broken" tulips, that have their petals, in addition to "feathered" edges, prettily marked with bold streaks or bands of colour distinct from the ground colour. The streaks or bands must commence at the base of the petal and radiate upwards to the "feathered" edges.

"**Half-Hardy.**"—A term applied to bulbs that require to be planted in specially warm positions outdoors, or that require to be lifted and stored during the winter and replanted in spring, or that require protection in winter. Such bulbs and tubers are indicated by an asterisk prefixed to the generic name in the tables.

"**Hardy.**"—This term applies to bulbs that may be grown outdoors all the year round without any protection whatever.

"**Hybrid.**"—The product of a cross between two species of the same genus, as Gladiolus gandavensis, raised from the interchange of pollen between Gladiolus psittacinus and G. cardinalis. Narcissus Barrii, again, is a hybrid between N. incomparabilis and N. poeticus.

"**Jonquil.**"—A term applied to Narcissus odorus and jonquilla, derived from juncus, a rush, and signifying narcissi with rush-like leaves.

"**Labels.**"—These are usually made of wood, iron, and zinc. Wooden labels may be purchased ready-made, painted one side with white lead. These are suitable for one season's use only. The lettering will be more durable if the face be smeared with fresh white lead paint at time of writing, and an indelible "Wolf" pencil be used. For permanent use the "Acme" labels are best. These are made of cast iron and have the lettering embossed in relief on a black ground. Zinc labels, with names written thereon in indelible ink, are also very durable. Before writing well rub the face of the label with emery paper. Special ink for the purpose may be obtained of any sundriesman.

"**Leaf-mould.**"—The best form of leaf-mould consists of oak leaves partially or wholly decayed into a fine flaky mass. Best obtained from an oak coppice. The layer just beneath the last season's leaves is the most serviceable. The lower layer, which has decomposed into a compact black mould, is not so good, usually being sour and containing injurious fungi and earth grubs Avoid decayed poplar, elm, sycamore, lime, and conifer leaves. Beech leaves also make an excellent leaf-mould.

"**Loam.**"—This should consist of the upper three inches of turf from an old pasture or common, and stacked grass side downwards in a heap for a year before using. Between each layer of turves place two inches of decayed manure, a handful of bone-meal, and two ounces of "Vaporite" or "Apterite" to each square yard. When required for use, chop down the face of the heap. The loam should contain a fair proportion of sand to render it friable.

"**Mother**" **Tulip.**—A term applied to seedling tulips until they "break" or change to another colour.

"**Mulching.**"—This means covering the surface of the soil with a layer of decayed manure to (a) enrich the soil, and (b)

prevent evaporation of the moisture in summer. Failing decayed manure, cocoanut-fibre refuse may be used as a substitute. Lawn mowings may also be used.

"Narcissus."—The generic or family name of the daffodil, and also used commonly in the case of those narcissi which have coronas or cups shorter than the perianth segments.

"Narcissi for Cutting."—Where large quantities of flowers are required for cutting for decoration or sale, the bulbs should be planted 3in. to 5in. deep, according to size, 8in. to 1ft. apart, in rows 15in. asunder, in October. The soil should be previously deeply dug and, if poor, have some well-rotted manure, basic slag, at the rate of 7lb. per square rod, and 1lb. of kainit to the same area added. A good site for planting is between the rows of fruit trees or some other sheltered spot. Lift the bulbs every third year late in July, and sort them into three sizes. The largest may be sold to bulb dealers, and the remaining two smaller ones stored till October, then replanted to flower the next year. On good loamy or sandy soils narcissi grown thus will yield a considerable revenue. The flowers are usually marketed in bunches, each containing a dozen blooms arranged to face one way, and with a few leaves added. They are sold wholesale by the dozen bunches, these averaging 1s. to 4s. per dozen. The most popular sorts are Horsfieldi, Sir Watkin, Golden Spur, Princeps, Poeticus ornatus and Barri conspicuus.

"Nosegay" Daffodils.—A term applied to narcissi which bear several flowers in a bunch or umbel, as N. tazetta and its varieties.

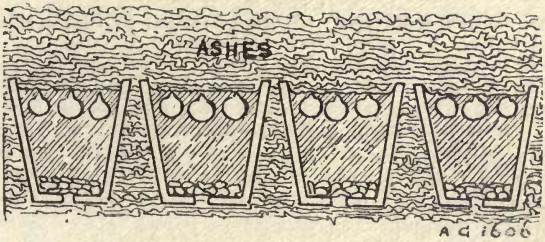
"Parrot" Tulip.—A race of tulips with laciniated or fantastically-cut petals, grotesquely marked or feathered with brilliant yellow and scarlet colours. Said to be derived from Tulipa viridiflora.

"Peat."—This is decayed vegetable matter obtained from heaths or bogs, and it should be of a fairly solid consistency, plentifully intermixed with sand. Black boggy peat is usually too sour for use in gardens.

"Perianth."—A term applied to the petal-like appendages of a daffodil or narcissus flower, the segments of which radiate round the base of the corona or trumpet. The perianth in this case is the combination of the calyx and corolla.

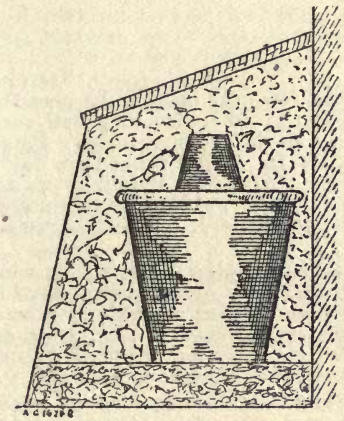
"Plunging."—A term signifying the covering of newly-potted bulbs with cocoanut-fibre refuse (see diagram A) until they have an opportunity of forming roots. The latter is to keep the pots, etc., and the soil uniformly moist in order to dispense with watering. If newly-potted bulbs were exposed to the air the latter would extract the moisture from the soil and render the soil too dry; then, if water was applied, before there were any roots to absorb it, the soil would be rendered

sour, and healthy root action would not take place. The pots or boxes should be placed in a frame or close to a north wall, and then be covered with about 6in. to 8in. of material. In the case of hyacinths and choice bulbs it is advisable to place a small inverted pot over each bulb before covering



PLUNGING BULBS.

A. Shows method of covering bulbs with ashes or fibre after potting.



B. Shows method of covering bulb with an inverted pot before covering with ashes, etc.

with ashes. This prevents any deleterious substances in the ashes from injuring the bulb. It is well also to cover the material with a board, as shown in diagram B. Examine the

bulbs once a week after they have been covered two months, and remove those that have begun to grow to a cold frame. The exclusion of light, as well as the moist surroundings of the material, promote rapid and healthy root action.

"Poet's Daffodil."—A term applied to the varieties of Narcissus poeticus, which have pure white perianth segments and a flattened corona or cup, edged with red.

"Polyanthus Narcissi."—A term applied to varieties of Narcissi tazetta. See "Nosegay Daffodils."

"Pots."—These are made of burnt clay and sold by the "cast." A "cast" means a given quantity of clay, which will make either two pots of the largest size or eighty of the smallest size. The standard sizes are as follows:—

Sizes of Flower Pots.	Ins. diam. at top.	Ins. deep.
Thimbles are inside	2	2
Thumbs (90's)	2½	2½
Sixties (60's)	3	3½
Forty-eights (48's)	4½	5
Thirty-twos (32's)	6	6
Twenty-fours (24's)	8½	8
Sixteens (16's)	9½	9
Twelves (12's)	11½	10
Eights (8's)	12	11
Sixes (6's)	13	12
Fours (4's)	15	13
Twos (2's)	18	14

When first received from the pottery the pots should be soaked in water before using, otherwise they will suck the moisture out of the soil, and do the roots an injury. Pots that have been used before should be well scrubbed in hot water prior to being used again. Dirty pots should on no account be used, as the filth on the exterior, as well as the interior, will prevent air having access to the soil, besides, in time, rendering the latter sour.

"Protection."—This implies covering in winter the site in which half-hardy bulbs are grown with a hand-light, bell-glass or cloche, or a frame. Other methods of protection are covering the bed with a layer of bracken fern, litter, or cocoanut-fibre refuse. The idea is to prevent the soil becoming too damp in winter and thus easily rendering the bulbs subject to decay.

"Rectified" Tulip.—A term applied to seedling tulips that have changed from a self colour to two or more colours.

"Rembrandt" Tulip.—Similar to "Darwin" tulips in shape, but striped with a colour distinct from the basal or ground colour.

"Retarded Bulbs."—A term applied to bulbs placed in a refrigerating chamber when in a dormant state and kept there

for a considerable time. The temperature of the freezing chamber is usually maintained at 90 deg. below zero. During the period of storage growth is at rest. It is possible by this means to have such lilies as Harrisii, etc., in flower at any season of the year. Ordinary bulbs, as tulips, narcissi, and hyacinths, are not amenable to this treatment. Bulbs of Lilium Harrisii that have been retarded—i.e., prevented making growth in their natural season—will, in eight weeks after removal from the refrigerating chamber, be in full flower. No high temperature is required for growing retarded bulbs. Simply pot the bulbs, place them in a temperature of 40 deg. to 50 deg., and they will start into growth at once. They may even be started in a cold house to flower in ten weeks' time. Retarded bulbs are sold by most dealers.

"Rose" Tulip.—A term applied to "rectified" tulips that have the ground colour of their flowers of a pure white marked with another colour, as rose, pink, scarlet, or crimson.

"Sand."—The coarse silver sand obtained from Bedfordshire is the best for bulb growing. Sea sand, if well washed and exposed to the air for a time to get rid of the excess of saline matter, will also do well for bulbs.

"Self" Tulip.—A term applied to seedling or "mother" tulips, which have their blooms of one colour only.

"Spawn."—A term applied to the young corms which form on the roots of gladioli, and which, if removed, planted, and grown on, will in four or five years make flowering corms.

"Star" Narcissi.—A term applied to those forms of narcissi which have narrow, radiating perianth segments, as the N. Leedsii type.

"Sterilising the Soil."—A term used to signify the destruction of all animal and vegetable life in loam, leaf-mould, or manure used for potting or seed sowing. The simplest way is to spread the material out thinly, then apply boiling water through a fine rosed can in sufficient quantity to just saturate it. This will kill every weed seed, soil grub, or fungi, and do no harm to the fertility of the soil. Immediately after applying the water throw the material into a heap, and use a day or so afterwards.

"Top-dressing."—A term applied to the practice of adding additional compost to pot-grown bulbs, as lilies, for example. The compost used for this purpose is usually a trifle richer than is employed for potting. Many kinds of bulbs, too, that do not require an annual repotting are benefited by top-dressing. In this case the old surface mould is removed to the depth of an inch or more and replaced by fresh compost.

"Tuber."—See Chapter I., p. 12.

INDEX.

ILLUSTRATIONS.